Calnev Pipeline Expansion Project Draft Environmental Impact Statement/ Environmental Impact Report

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Lead Agencies:

NEPA Lead - U.S. Department of Interior, Bureau of Land Management (BLM)
CEQA Lead - San Bernardino County, California

Cooperating Agencies:

U.S. Department of Agriculture, Forest Service (USFS)
U.S. Department of Defense, Marine Corps (USMC)

March 2012

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
California State Office
2800 Cottage Way, Suite W-1623
Sacramento, California 95825

In Reply Refer To:
1610/2881 (P)
CACA-49138/CAD08000.26

Dear Reader:

Following for your review and comment is the Draft California Desert Conservation Area Plan Amendment, Draft Environmental Impact Statement, and Draft Environmental Impact Report (Draft CDCA Plan Amendment/DEIS/EIR) for the Calnev Pipeline Expansion Project. The Bureau of Land Management (BLM) with the County of San Bernardino prepared the CDCA Plan Amendment/DEIS/EIR for the Calnev Expansion Project in consultation with cooperating agencies taking into account public scoping comments received during the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) process. The proposed plan amendment allows for construction of a portion of the pipeline outside of a utility corridor identified in the CDCA Plan (1980), as amended. The decision on the Calnev Expansion Project will be to approve, approve with modification, or deny issuance of the right-of-way grant applied for by Calnev Pipeline, LLC.

This CDCA Plan Amendment/DEIS/EIR for the Calnev Expansion Project has been developed in accordance with NEPA and the Mineral Leasing Act of 1920, as amended. The CDCA Plan Amendment is based on Alternative 3 (the Agency-Preferred Alternative) which avoids the Mojave National Preserve. The CDCA Plan Amendment/DEIS/EIR contains the proposed plan amendment, an analysis of the impacts of the proposed decisions, a summary of the public scoping comments and responses to those comments.

The BLM will accept public comment on the Draft CDCA Plan Amendment/DEIS/EIR within 90 days after the date the Environmental Protection Agency publishes the Notice of Availability in the Federal Register. Comments may be submitted electronically at: BLM_CA_CalNev_EIS@blm.gov. Comments may also be submitted by mail to: Bureau of Land Management, Barstow Field Office, 2601 Barstow Road, Barstow, CA 92311. To facilitate analysis of comments and information submitted, we strongly encourage you to submit comments in an electronic format.

The BLM encourages the public to provide information and comments pertaining to the analysis presented in the Draft CDCA Plan Amendment/DEIS/EIR. We are particularly interested in feedback concerning the adequacy and accuracy of the proposed alternatives, the analysis of their respective management decisions, and any new information that would help the BLM as it develops its plan and decision.

In developing the Proposed RMP/Final EIS/EIR, which is the next phase of the planning process, the decision maker may choose portions from any of the action alternatives to form the selected alternative. The selected alternative will create a management strategy that best meets the needs of the resources and values in this area under the BLM multiple use and sustained yield mandate. Your review and comments on the content of this document are critical to the success of this effort. If you wish to submit comments on the Draft CDCA Plan Amendment/DEIS/EIR, we request that you make your comments as specific as possible. Comments will be more helpful if they include suggested changes, sources, or methodologies, and reference to a section or page number.

Before including your address, phone number, email address, or other personal identifying information in your comment, please be advised that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Public meetings to provide an overview of the document, respond to questions, and take public comments will be announced by the local media, website, and/or public mailings at least 15 days in advance. Copies of the Draft CDCA Plan Amendment/DEIS/EIR have been sent to affected Federal, State, and local government agencies. Copies of the Draft CDCA Plan Amendment/DEIS/EIR are available for public inspection at:

Victorville City Library, 15011Circle Drive, Victorville, CA 92395,
Rialto Branch Library, 251 West 1st Street, Rialto, CA 92376,
Las Vegas Library, 833 Las Vegas Blvd. N., Las Vegas, NV 80101.

Copies are also available for public inspection at the following BLM locations:

Barstow Field Office, 2601 Barstow Road, Barstow, CA 92311
Needles Field Office, 1303 S. Hwy 95, Needles, CA 92363
Las Vegas Field Office, 4701 North Torrey Pines Drive, Las Vegas, NV 89130

Thank you for your continued interest in the Calnev Expansion Project. We appreciate the information and suggestions you contribute to the planning process. For additional information or clarification regarding this document or the planning process, please contact Rich Rotte, Realty Specialist, 760-252-6026.

Sincerely,

James

James G. Kenna
State Director

Abstract

Calnev Pipe Line, LLC (Calnev), operating partnership for Kinder Morgan Energy Partners, LP, proposes to expand its refined petroleum products pipeline, the Calnev Pipeline System. The existing system extends from the North Colton Terminal in Colton, San Bernardino County, California to the North Las Vegas Terminal, in Las Vegas, Clark County, Nevada. The Calnev Pipeline Expansion Project would involve the construction, operation, and maintenance of 233 miles of new 16-inch-diameter pipeline from the North Colton Terminal to the Bracken Junction near the McCarran International Airport in Las Vegas, Nevada, which would parallel the existing system for most of the route. In addition to the new pipeline, the Proposed Project would include a new pump station, electrical substation, and ancillary facilities near Baker, California; a new 3-mile lateral from the Bracken Junction to McCarran International Airport; and new or modified connections to new or modified laterals, valves, and ancillary modifications.

The existing and proposed pipelines primarily traverse undeveloped lands administered by the BLM. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the USFS and the USMC. Lands under the jurisdiction of the State of California, the State of Nevada, San Bernardino County, and Clark County would also be crossed by the pipeline. Incorporated communities crossed by the pipeline include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

This EIS/EIR evaluates the potential impacts of the Proposed Project and alternatives developed to avoid potentially significant impacts of the Proposed Project.

Point of Contact:

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The BLM will be accepting additional public comment on the Draft CDCA Plan Amendment/DEIS/EIR through June 21, 2012.

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Acronyms and Abbreviations

%	percent
A/M	attainment/maintenance area
A/U	attainment and/or unclassifiable
AADT	annual average daily traffic
ac-ft	acre-feet
ACOE	Army Corps of Engineers
AFB	Edwards Air Force Base
ACEC	Area of Critical Environmental Concern
AHPA	Archaeological and Historic Preservation Act
AIRFA	American Indian Religious Freedom Act
A/M	Attainment/maintenance area
APE	Area of Potential Effect
APMs	applicant proposed measures
APMM	applicant's proposed minimization measures
ARPA	Archaeological Resources Protection Act
AT&SF	Atchison, Topeka & Santa Fe Railroad
ATC	alcohol type concentrate (fire suppressant)
ATV	all-terrain vehicles
BCC	Birds of Conservation Concern
BEP	Business Emergency Plan
bgs	below ground surface
BLM	Bureau of Land Management
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe
BRC	Clark County Blue Ribbon Commission
Btu	British thermal unit
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CADTSC	California Department of Toxic Substances Control
CA-E	Endangered under the California Endangered Species Act
CalEPA	California Environmental Protection Agency
Calnev	Calnev Pipe Line, LLC
CalOSHA	California Occupational Safety and Health Administration
Caltrans	State of California Department of Transportation
CA-NV	California-Nevada (state line)
CARB	California Air Resources Board
CAT	Citizens Area Traffic
CA-T	Threatened under the California Endangered Species Act
CBD	Central Business District
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFG	California Department of Fish and Game
CDPR	California Department of Pesticide Regulation

Acronyms and Abbreviations

CEA	Cumulative Effects Area
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund Act)
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CH_4	Methane
CHL	California Historic Landmark
CHMIRS	California Hazardous Material Incident Reporting System
CNDDB	California Natural Diversity Database
CNEL	Community Noise Exposure Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	Equivalent CO_2 Emission Rate
Cortese	Hazardous Waste and Substances Sites (California)
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
DAQEM	Department of Air Quality and Environmental Management (Clark County, Nevada)
dB	decibel
DCH	Designated Critical Habitat
DHS	Department of Homeland Security
DOD	Department of Defense
DOI	U.S. Department of the Interior
DOT	Department of Transportation
DSFLF	Delhi sands flower-loving fly
DT	desert tortoise
DWMA	Desert Wildlife Management Area
DWPA	Nevada State Drinking Water Protection Area
EA	Environmental Assessments
ECSZ	Eastern California Shear Zone
EDR	Environmental Data Resources
EFZ	Earthquake Fault Zone
EIA	Energy Information Administration

Acronyms and Abbreviations

EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EITP	El Dorado-Ivanpah Transmission Project
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Environmentally Sensitive Area
^{o}F	Fahrenheit
FBFM	Flood Hazard Boundary Map
FE	Endangered under the Federal Endangered Species Act
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FHBM	Flood Hazard Boundary Map
FICC	Federal Interagency Communications Commission
FIRM	Flood Insurance Rate Map
FLPMA	Federal Land Policy and Management Act
FOSHA	Federal Occupational Safety and Health Administration
FSMCRA	Federal Surface Mining Control and Reclamation Act
FS-RFA	Forest Service Recreation Facility Analysis
FT	Threatened under the Federal Endangered Species Act
FWA	Federal Wilderness Area
g	gravity
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	geographic information system
GWP	Global Warming Potential
H_2S	Hydrogen Sulfide
HA	Hydrographic Area
HAP	Hazardous Air Pollutant
HAZ	Hazardous
HCA	High Consequence Area
HDD	horizontal directional drilling
HFC	Hydrofluorocarbon
HMBE/CP	Hazardous Materials Business Emergency/Contingency Plan
HP	horsepower
HPTP	Historic Property Treatment Plan
Hz	hertz
I	Interstate
IMPLAN	Impact Analysis for Planning
INRMP	Integrated Natural Resource Management Plan
IPCC	Intergovernmental Panel on Climate Change
IRP	Installation Restoration Program

Acronyms and Abbreviations

ISEGS	Ivanpah Solar Electric Generating System
iVRM	interim Visual Resource Management
JPOE	Joint Point of Entry
KOP	Key Observation Point
kV	kilovolt
LADWP	Los Angeles Department of Water & Power
lbs	pounds
lbs/day	pounds per day
L_{dn}	day-night average sound level
L_{eq}	equivalent sound level
$L_{eq(24)}$	equivalent sound level (24 hour average)
Ll	left lateral
LOS	Level of Service
LRMP	Land Resource Management Plan
LRWQCB	Lahontan Regional Water Quality Control Board
LST	Localized Significance Threshold
LUST	leaking underground storage tank
LVCVA	Las Vegas Convention and Visitors Authority
LVRMP	Las Vegas Resource Management Plan
LVVSZ	Las Vegas Valley Shear Zone
LVVWD	Las Vegas Valley Water District
m^3	cubic meters
µg	microgram
$µg/m^3$	micrograms per cubic meter
MBTA	Migratory Bird Treaty Act
McCarran	McCarran International Airport
MCLB	Marine Corps Logistics Base
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MET	meteorological
MGM	Metro-Goldwyn-Mayer
MGS	Mohave ground squirrels
MIS	Management Indicator Species
Ml	local magnitude
MM	mitigation measures
MM-C	Mitigation Measure - cumulative
MNP	Mojave National Preserve
MP	Milepost
MRV	Minor Route Variation
MRZ	Mineral Resource Zone
MSHCP	Multiple Species Habitat Conservation Plan
MTBE	methyl-tert butyl ether
MUC	multiple uses classes

Acronyms and Abbreviations

Mw	moment magnitude
MW	megawatt
mya	million years ago
N_2O	nitrous oxide
NA	nonattainment area
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NAFB	Nellis Air Force Base
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NBWQP	Nevada Bureau of Water Quality Planning
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NDEP	Nevada Department of Environmental Protection
NDOF	Nevada Division of Forestry
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NECO	Northern and Eastern Colorado Resource Management Plan
NEMO	Northern and Eastern Mojave Resource Management Plan
NEPA	National Environmental Policy Act
NIEP	New Ivanpah Evaporation Pond
NHMLAC	National History Museum of Los Angeles County
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NLCS	National Landscape Conservation System
No.	number
NO_2	nitrogen dioxide
NOA	Notice of Availability
NOC	Notice of Completion
NOI	Notice of Intent
NOI/NOP	Notice of Intent/Notice of Preparation
NO_x	oxides of nitrogen
n	normal
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NRCS	U.S. Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes
NSA	Noise Sensitive Area
NTSB	National Transportation Safety Board
NWI	National Wetlands Inventory
NWSRS	National Wild and Scenic Rivers System
O_3	Ozone

Acronyms and Abbreviations

OES	Office of Emergency Services
°F	Degrees Fahrenheit
OHV	off-highway vehicle
OIEP	Old Ivanpah Evaporation Pond
OPA	Oil Pollution Act
OPR	Office of Planning and Research (California Governor's)
OPS	Office of Pipeline Safety
OSHA	Occupational Safety and Health Administration
OSNHT	Old Spanish National Historic Trail
OSPR	Office of Spill Prevention and Response
OSRP	Oil Spill Response Plan
PCT	Pacific Crest Trail
PFC	Perfluorocarbon
PFYC	Potential Fossil Yield Classification
PGA	peak ground acceleration
PHMSA	Pipeline and Hazardous Materials Safety Administration
PM	particulate matter
PM_{10}	particulate matter (10 microns)
$PM_{2.5}$	particulate matter (2.5 microns)
PMMP	Paleontological Mitigation and Monitoring Plan
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
Project	Calnev Pipeline Expansion Project
PRRR	Paleontological Resources Recovery Report
PSD	Prevention of Significant Deterioration
r	reverse
RCA	Riparian Conservation Area
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Conservation and Recovery Act
REC	Recreational Resources
RI	right lateral
RMP	Resource Management Plan
ROC	Record of Completion
ROD	Record of Decision
ROG	Reactive Organic Gas
ROI	region of influence
ROW	right-of-way
RTC	Regional Transportation Commission of Southern Nevada
RUSD	Rialto Unified School District
RV	Recreational Vehicle
RWD	Report of Waste Discharge
RWQCB	Regional Water Quality Control Board

Acronyms and Abbreviations

SARWQCB	Santa Ana Regional Water Quality Control Board
SB Co.	San Bernardino County
SBCM	San Bernardino County Museum
SBNF	San Bernardino National Forest
SCAB	South Coast Air Basin
SCADA	Supervisory Control and Data Acquisition
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCEC	Southern California Earthquake Center
SCLA	Southern California Logistics Airport
SCORP	Statewide Comprehensive Outdoor Recreation Plan (Nevada)
SDWA	Safe Drinking Water Act
SF_6	sulfur hexafluoride
SFHA	Special Flood Hazard Areas
SHPO	State Historic Preservation Office
SIO	Scenic Integrity Objectives
SIP	State Implementation Plan
SMA	Special Management Area
SMGB	State Mining and Geology Board
SO_2	sulfur dioxide
SO_x	sulfur oxides
SOON	Surplus Off-Road Opt-In for NOx
SPCC	Spill Prevention Control and Countermeasures
SPT	Standard Penetration Tests
sq. mi.	square miles
SQG	small quantity generator
SR	State Route
SRMA	Special Resource Management Area
ss	strike slip
SSC	Species of Special Concern (California)
STATSGO	State Soil Geographic Database
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	California State Water Resources Control Board
TAC	toxic air contaminant
TBD	to be determined
TDS	Total dissolved solids
tpy	tons per year
TSD	Treatment, Storage, and Disposal
UPRR	Union Pacific Railroad
URS	URS Corporation
U.S.	United States

Acronyms and Abbreviations

USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UTC	Utility and Transportation Corridor
VOC	volatile organic compound
VRM	Visual Resource Management
VRP	Visibility Reducing Particles
WA	Wilderness Area
WCI	Western Climate Initiative
WEMO	West Mojave Plan
WHPP	Wellhead Protection Program
WL	Watch List
WRS	Wildlife Refuge System
WSA	William Self and Associates
Yr	Year

Executive Summary

Executive Summary

ES.1 Introduction

Project Description

Calnev Pipe Line, LLC (Calnev), operating partnership for Kinder Morgan Energy Partners, LP, proposes to add an additional refined petroleum products pipeline in California and Nevada, in order to expand the capacity of the Calnev Pipeline System. The Calnev Pipeline Expansion Project (hereafter, the Proposed Project) would involve the construction, operation, and maintenance of a new 16-inch-diameter pipeline and ancillary facilities from an existing facility in Colton, California to an existing facility in Las Vegas, Nevada. The proposed pipeline would parallel two existing system pipelines for most of the route.

The new pipeline would extend approximately 233 miles from the existing North Colton Terminal in Colton, San Bernardino County, California to the Bracken Junction near the McCarran International Airport in Las Vegas, Clark County, Nevada. In addition to the new pipeline, the Proposed Project would include a new pump station and ancillary facilities near Baker, California; a new 3-mile lateral from the Bracken Junction to McCarran International Airport; and new or modified connections to new or modified laterals, valves, and ancillary modifications (Figure 1-1). The pipeline crosses lands primarily under the jurisdiction of the Bureau of Land Management. In addition, the proposed pipeline would cross lands under the jurisdiction of the United States Forest Service, the United States Navy, Marine Corps Logistics Base, the Counties of San Bernardino, California and Clark, Nevada, and various cities along the Interstate 15 corridor from Colton, California to Las Vegas, Nevada.

Purpose and Need

The BLM's purpose is to determine if Calnev's Proposed Project to address the energy needs of the California high desert and southern Nevada, or a modification thereto, are in the public interest, and, if so, to determine appropriate conditions of approval.

Consistent with the Mineral Leasing Act of 1920, as amended, BLM must respond to Calnev Pipe Line, LLC's right-of-way (ROW) application to construct, operate, and maintain a new petroleum pipeline and associated ancillary facilities on federal lands, in compliance with BLM ROW regulations, and other applicable federal, State, and local laws. The County of San Bernardino, California must process Calnev's requests for amendments to franchise agreements, a Conditional-Use Permit, and encroachment, grading, special use and other permits on lands under its jurisdiction. Other federal agencies and local jurisdictions may require additional permits on lands under their jurisdiction or purview.

Authorities

The existing Calnev Pipeline System primarily crosses land managed by the BLM. The BLM would issue a ROW grant across all Federal lands as defined under the Mineral Leasing Act, as amended, for construction of the Proposed Project. The Proposed Project is considered a major federal action that, under NEPA, requires an EIS. The BLM is the lead agency under NEPA.

Other federal agencies that manage lands through which oil and gas pipelines are proposed have various mechanisms to authorize access and construction activities. The other agencies that have been requested to provide access for and construction of the Proposed Action include the Marine Corps Logistics Base (MCLB) in Daggett, California. The San Bernardino National Forest and the MCLB are cooperating agencies in the EIS for lands under their jurisdiction. The County of San Bernardino is the lead agency under CEQA to take discretionary action on an amendment to its existing franchise agreement with the Applicant for a privately-owned pipeline. The EIR is also required to be considered along with a Conditional Use Permit for a new pump station, if the station is located on jurisdictional land. The station would be located near Baker, California (Figure 2-13). Because the County of San Bernardino would consider and take discretionary action on an amendment to the franchise agreement and possibly a Conditional Use Permit, the Proposed Project is subject to CEQA requirements. The County is the CEQA lead agency for preparation of the combined EIS/EIR.

CDCA Plan Amendment

In addition to the Proposed Project, this EIS/EIR also considers an amendment to the CDCA Plan. The Energy Production and Utility Corridors Element of the CDCA Plan identifies 16 planning corridors designated for utility facilities, including pipelines with diameters greater than 12 inches. The CDCA Plan requires that utility needs that do not conform to the adopted corridor system will be processed by means of a Plan Amendment in conjunction with necessary permit hearings required by other agencies.

For the Proposed Project, the majority of the proposed route of the pipeline is located within designated utility corridors D and BB, with the exception of the proposed route between Adelanto Junction and Lenwood Junction (approximately between mileposts MP-47 and MP-60). In that area, the proposed route would continue to occur within the right-of-way followed by the existing 8-inch and 14-inch pipelines. Therefore, although the proposed route would not be within a designated corridor in this area, it would be located in a right-of-way which has already been disturbed, and which is already the location of other utilities.

Because the proposed pipeline route varies from the designated corridors in one location, the required Plan Amendment and EIS for the proposed project are being processed together, and the NEPA process has been modified as needed to also satisfy plan amendment requirements and timeframes. This is a Category 3 amendment, in which there is a request for a specific use or activity (the pipeline ROW) which requires additional analysis and decision (this EIS) beyond the Plan Amendment decision. The process for considering Category 3 Plan Amendments begins with the recommendation of the Plan Amendment by the Desert District manager to the State Director, and public notice of the amendment decision. Once the decision has been published, protests will be received for 30 days following the notice. For this project, the proposed plan amendment will be identified concurrent with the release of the FEIS/FEIR, and the final decision will be made after required protest periods and consultations, concurrent with the BLM Record of Decision for the EIS.

ES.2 Proposed Action and Alternatives

Alternative 1 – Proposed Action

The Proposed Action would add an additional 16-inch pipeline and support facilities within a standard 100-foot-wide construction right-of-way and a more narrow permanent ROW for operation and maintenance activities, the width of which would be dependent upon specific facilities in a particular location. All alternative pipeline alignments are fairly similar in length to the existing approximately 233 mile system running from the existing Colton Terminal and Pump

Station in Colton, California to the Bracken Junction facility near McCarran Airport in Las Vegas, Nevada, roughly following the Interstate 15 corridor. A new 12-inch diameter 3-mile lateral from the new 16-inch pipeline to McCarran International Airport would be installed adjacent to the existing McCarran Lateral. The Proposed Project and action alternatives would also include new or modified connections to existing laterals between Colton and Bracken Junction, including the existing laterals to the Southern California Logistics Airport (SCLA), Edwards Air Force Base (AFB); Burlington Northern Santa Fe Rail Yard, Barstow Coolwater; and McCarran International Airport. Aboveground facilities associated with the pipeline would include a new pump station (Silver lake Pump Station) near Baker, California, and a new junction to be constructed at the location of the current Bracken Junction at the intersection of Hacienda and Valley View Boulevard in Las Vegas. Other features considered as elements of the Proposed Action include construction access and pipeline maintenance roads.

Alternative 2 – Modified Route Alternative

During the public scoping period, government agencies and members of the public evaluated the Proposed Action and identified issues and concerns. Most of the issues were related to concerns about the proximity of the Proposed pipeline route to sensitive receptors including schools, residences, wetland and riparian areas, infrastructure, seismic hazards, biological resources, cultural resources, and Special Management Areas. In response to these issues, BLM, the County, and the Applicant worked to develop alternative routes in the locations of concern, in an attempt to identify routes that would avoid or reduce the level of impacts to those resources and receptors.

Alternative 2 is a compilation of eight changes to the Proposed Action. The Proposed route for Alternative generally follows the same right-of-way as that for the Proposed Action, and would also incorporate the same construction, operations and maintenance, and decommissioning methods as the Proposed Action. A summary of the changes that are evaluated as part of Alternative 2 in provided in Table ES-1.

Table ES-1 Summary of Alternative Route/Facility Changes

Change from Proposed Action	Rationale for Proposed Change
Bloomington Alternative	Reduce impact on residences in Rialto
Rialto Alternative	Avoid locations of schools and proposed Renaissance Redevelopment Project
Wagon Train Road Alternative	Avoid impacts to riparian area in San Bernardino National Forest
Phelan Road/Baldy Mesa Alternative	Avoid location of two schools in Baldy Mesa
Zzyzx Alternative	Reduce impacts by placing pipeline in same ROW as existing pipelines
Baker Alternative	Avoid conflicts with existing utilities and development within Baker
Silver Lake Pump Station Alternative	Avoid conflict with expansion of substation, and place facility further from school
Sunset Lateral/Sunset Junction Alternative	Avoid need to construct new lateral in close proximity to casinos in Las Vegas

Alternative 3 – Agency Preferred (NEPA) and Environmentally Superior (CEQA) Alternative

The environmental impacts of the routes for Alternatives 1 and 2 are evaluated in Chapter 3 of this EIS/EIR. Based on the results of that analysis, the route which would present the least net environmental impact was developed as Alternative 3, which is the agency preferred alternative under NEPA for the BLM, and the Environmentally Superior Alternative for the County under CEQA.

Of the eight potential variations considered as part of Alternative 2, those selected for inclusion in Alternative 3 include:

- Rialto Alternative
- Wagon Train HDD Alternative
- Zzyzx Alternative
- Silver Lake Pump Station Alternative
- Sunset Lateral and Sunset Junction Alternative

Those not selected for inclusion in Alternative 3 include the Bloomington Alternative, the Baker Alternative through the town of Baker, and the Baldy Mesa Alternative around the Baldy Mesa Elementary School. In these areas, the original Proposed Route for the pipeline has been included in Alternative 3.

ES.3 Summary of Impacts

Proposed Project

The following subsections summarize the impacts that would be associated with the Proposed Project.

Topography, Geology, and Geologic Hazards

The analysis of the Proposed Project in Section 3.2.3 identified the following potential impacts associated with topography and geologic hazards:

- Impact GEO-1: Severe damage to the pipeline from unstable soils or a geologic event; and
- Impact GEO-2: Impact to adjacent facilities or resources through blasting vibrations.

For both potential impacts, the analysis determined that direct, adverse impacts under NEPA could occur in the event of a geologic event, and that these impacts could be significant under CEQA. The pipeline crosses a seismically active area, and damage to the pipeline from a seismic event could result in a release of up to 5,000 barrels (210,000 gallons) of petroleum product. The volume of potential releases would be minimized by the placement of shutoff valves and other mitigation measures, as specified in Section 3.2.3.2. Because the Proposed pipeline would be located in close proximity to the existing Calnev pipelines and other infrastructure, it is possible that a seismic event could cause releases from multiple sources, causing adverse cumulative impacts.

Soils

The analysis of the Proposed Project in Section 3.3.3 identified the following potential impacts associated with soil resources:

- Impact SOIL-1: Soil Removal and Loss of Topsoil; and
- Impact SOIL-2: Potential Impacts from Unstable Soils.

For both potential impacts, the analysis determined that direct, adverse impacts under NEPA could occur as a result of the Proposed Project, and that these impacts could be significant under CEQA. The duration of these impacts could range from temporary and short-term to permanent, depending on the scope of any event related to unstable soils, and the length of time required for revegetation. Damage to the pipeline from unstable soils is only a potential impact, and the impact of the removal of topsoil during construction would be limited because the pipeline would be constructed primarily in a corridor which has already been disturbed by previous projects.

Energy and Minerals

The potential impacts to energy and mineral resources evaluated in Section 3.4.3 included:

- Impact ENE-1: Access to mineral or energy resources; and
- Impact ENE-2: Loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

For both potential impacts, the analysis concluded that direct, indirect, and cumulative adverse impacts would not occur to energy or mineral resources. No mitigation measures were identified for energy or mineral resources.

Water Resources/Hydrology and Water Quality

The analysis of the Proposed Project in Section 3.5.3 identified the following potential impacts associated with water resources:

- Impact WR-1: Introduce hazardous contamination into surface and groundwater resources such that water quality is degraded and water quality standards are exceeded.
- Impact WR-2: Introduce non-hazardous, non-beneficial discharges into surface water and groundwater resources such that water quality is degraded and water quality standards are exceeded
- Impact WR-3: Substantially deplete groundwater supply and/or interfere with sufficient groundwater recharge
- Impact WR-4: Impact floodplain integrity and alter existing drainage patterns such that flood flows will be impeded or re-directed, the risk of flooding are substantially increased, and stormwater drainage capacity is exceeded
- Impact WR-5: Reduce stream flow quantity or impact riparian vegetation such that significant damage occurs to beneficial uses or aquatic life
- Impact WR-7: Increase of risk to people or structures due to placement of structures within a floodplain.

For most of these potential impacts, the analysis concluded that direct, indirect, and cumulative adverse impacts would not occur to water resources. However, applicant-proposed minimization measures and agency mitigation measures were identified in Section 3.5.3 to reduce the potential for these impacts.

With respect to Impact WR-3, the analysis evaluated whether the withdrawal of large volumes of groundwater for use in construction could deplete groundwater supplies in the surrounding vicinity if the withdrawal exceeds basin capacity or duration needed for recharge. If it occurred, this impact could be intense, short-term, and affect large areas outside the point of withdrawal. This impact could also contribute to well-documented cumulative impacts to the availability of groundwater supplies within the Proposed Project area. Water for use in daily construction activities and for hydrostatic testing of the pipeline would be supplied from five sources, as follows:

- West Valley Water District, Rialto, California;
- Mojave Water Agency, Apple Valley, California;
- Baker Community Services, Baker, California;
- Molycorp Minerals, Mountain Pass, California; and
- Las Vegas Valley Water District, Las Vegas, Nevada

Of these five sources, only the West Valley, Baker, and Molycorp sources are supplied by groundwater. The evaluation in Section 3.5.3 concluded that the volume of the proposed withdrawal from these systems was well within the capacities of the systems, and because the withdrawal would be temporary, would not contribute to long-term depletion of groundwater supplies. The Applicant has proposed that, if water is unavailable from the Molycorp and Baker systems (the two smallest systems) at the time of construction, then water would be accessed from the larger sources, and transported by truck to the construction site. If this occurred, there would be additional air emissions and traffic associated with the water truck deliveries. However, this alternative water supply scenario would assist in ensuring that no adverse impacts occur to groundwater supplies.

Air Quality and Climate

Construction of the Proposed Project would generate air pollutant emissions, such as equipment and vehicle exhaust and fugitive dust. These emissions would occur within areas which are already classified as non-attainment or maintenance areas for CO, NO_2, ozone, and PM10 based on state and federal air quality standards. The emissions would exceed both daily and hourly emission thresholds for the SCAQMD and MDAQMD, as well as the federal General Conformity Applicability Threshold. As a result, a variety of mitigation measures are proposed, including development and implementation of a Construction Fugitive Dust Control Plan. In addition, the project will be required to undergo a General Conformity Determination.

All air emissions associated with the Proposed Project would occur only during construction, which will occur for a period of approximately one year. In addition, emissions would be localized within the construction area, so would only occur in each specific area for a period of a few days before the construction zone moves on.

Should the Applicant find that water availability at the proposed Baker and Molycorp sources is limited, they would access water from their other proposed sources, resulting in a substantial increase in total mileage driven by water trucks. This would result in increased air emissions from the water trucks. However, the emissions from the water trucks are still small compared to overall project emissions.

Because the Proposed Project area is already classified as either non-attainment or maintenance areas for various pollutants, the emissions associated with the project would contribute incrementally to an existing adverse cumulative impact to air quality.

Biological Resources

The analysis of the Proposed Project in Section 3.7.3 identified the following potential impacts associated with biological resources:

- Impact BIO-1: Impact to vegetation communities.
- Impact BIO-2: Impact to special status plants.
- Impact BIO-3: Impact to Wildlife.
- Impact BIO-4: Impact to special status terrestrial wildlife species.
- Impact BIO-5: Impact to bird species.
- Impact BIO-6: Introduction of invasive, non-native plants.
- Impact BIO-7: Impact to Federally protected wetlands.
- Impact BIO-8: Impacts to wildlife linkages, corridors, wintering areas, and big game species ranges would be indirect, temporary, and minor.
- Impact BIO-9: Conflict with Policies, Ordinances, or Habitat Conservation Plans.

For these impacts, the analysis determined that direct and indirect, adverse impacts under NEPA would occur as a result of the Proposed Project. Ground-disturbing activities associated with installation of the 16” pipeline, above-ground facilities, new maintenance roads, and pipeline markers would disrupt both plant and wildlife communities. Although displacement of habitat during construction would be temporary, long-term residual impacts would occur due to the length of time required for revegetation efforts to be successful.

The species that would be displaced would include federally-listed threatened and endangered species, state-listed species, and various BLM special-status and USFS Sensitive and Watch List species. Federal threatened or endangered species that occur within the Proposed Project area include:

- Slender-horned Spineflower (*Dodecahema leptoceras*)
- Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*)
- Arroyo Toad (*Bufo californicus*)
- Desert Tortoise (*Gopherus agassizii*)
- Coastal California Gnatcatcher (*Polioptila californica californica*)
- Least Bell’s Vireo (*Vireo bellii pusillus*)
- Southwestern Willow Flycatcher (*Empidonax traillii extimus*)
- San Bernardino Kangaroo Rat (*Dipodomys Merriam paves*)

Because the Proposed Project could potentially impact individuals and/or habitat of these and other species, the Applicant has proposed 43 minimization measures to be included as part of their Proposed Project Description. These include general measures to protect biological resources such as topsoil preservation, employee training, and site restoration, as well as species-specific measures to minimize the potential for impacts to individuals and habitat. In addition, 27 additional agency mitigation measures are proposed to avoid or reduce impacts, or to compensate for impacts.

Cultural Resources

The analysis of the Proposed Project in Section 3.8.3 evaluated the potential for the Proposed project to impact cultural or historic resources:

- Impact Cult-1: Adverse impact to an historic property or historical or archaeological resource.

Construction of the Proposed Project would involve above and below-ground disturbance within the APE, resulting in impacts on surface and subsurface cultural resources. Above ground resources may be disturbed by construction activities, which could result in changes to the integrity of the resource and the significant vales they convey. Below ground construction has the potential to affect buried archaeological resources. Based on the review of environmental settings (e.g., river crossings) and historic maps for the Project including General Land Office plats, U.S.G.S. maps, highway maps, etc., there are a number of areas where possible buried prehistoric and historical archaeological sites might occur in the APE.

Quantifiable impacts to cultural resources could occur on sites further detailed in the survey reports. If not mitigated, these impacts could be significant under CEQA. Mitigation measures outlined in Section 3.8.3 will be employed pending BLM approval and as long as they do not conflict with any agreement documents prepared for the Project. Impacts to historic properties and/or historical resources would be reduced to less than significant levels under CEQA, with the implementation of these mitigation measures. By avoiding and managing resources as specified below, there would be no residual impacts to cultural resources under NEPA.

Paleontological Resources

Although the analysis of the Proposed Project and Alternatives in Section 3.9.3 identified potential impacts that could occur to paleontological resources, these potential impacts were expected to be completely avoided and/or minimized through the implementation of mitigation measures.

Land Use

The analysis of the Proposed Project in Section 3.10.3 evaluated a variety of potential land use impacts, including restrictions on land use authorizations by BLM, USFS, and DoD, and impacts to potential grazing, agricultural, and other land uses. The impact for which a potential impact was identified was temporary disturbance to residents, which would be a direct, adverse impact under NEPA. This impact would occur during construction, and if it occurred, the effects would be temporary. The impact would be avoided or reduced through implementation of mitigation measures identified in Section 3.10.3.

Because land use impacts associated with the Proposed Project and Alternatives would be temporary during construction, and would be reduced or avoided through mitigation, they would not contribute to cumulative impacts associated with land use.

Special Management Areas

The Special Management Areas (SMAs) traversed by the Proposed Project, and therefore potentially subject to impacts, include the San Bernardino National Forest, the California Desert Conservation Area, the Mojave Monkeyflower, and Cronese Basin ACECs, and the Shadow Valley and Ivanpah Desert Wildlife Management Area (DWMAs). In addition, the Proposed Project would border several SMAs, including the Mojave fringe-toed lizard, Calico Early Man Site, Parish's Phacelia, and Manix ACECs, as well as the Mojave National Preserve. The potential impacts evaluated in Section 3.11.3 included whether the Proposed Project would conflict with any of the management objectives established for the CDCA, or for any of the specific SMAs. The analysis resulted in the development of a mitigation measure, MM-SMA-2, which would require that the Proposed project comply with the protection measures established for each of the SMAs.

Aesthetics and Visual Resources

The analysis of the Proposed Project in Section 3.12.3 identified the following potential impacts associated with aesthetics and visual resources:

- Impact VIS-1: Impacts on KOPs
- Impact VIS-2: Adverse Effect on a Scenic Vista
- Impact VIS-3: Damage to Scenic Resources within a State Scenic Highway
- Impact VIS-4: Degradation of Existing Visual Character
- Impact VIS-5: New Source of Substantial Light or Glare Affecting Daytime or Nighttime Views

For these impacts, the analysis determined that direct and indirect, adverse impacts under NEPA could occur as a result of the Proposed Project. The effects of these impacts occurring during construction would likely be temporary. However, the visual nature of above-ground facilities, new maintenance roads, and pipeline markers would be permanent. Also, due to the length of time required for revegetation efforts to be successful, impacts along the pipeline ROW could be long-term. To avoid or reduce these impacts, mitigation measures proposed included development of a reclamation plan to revegetate the pipeline corridor, and facility-specific requirements to reduce the visual impact of the proposed Silver Lake Pump Station.

Despite reclamation, the pipeline ROW would be visible permanently, particularly in areas of low rainfall where reseeding efforts may be ineffective and in areas where the ROW is permanently cleared of trees or larger vegetation. Additionally, the permanently clear ROW may increase access in undeveloped areas to OHV enthusiasts and other unapproved uses, reducing the effectiveness of revegetation plans. Longer-term visual impacts would also result from the removal or alteration of vegetation that may currently provide a visual barrier or the introduction of landform changes that introduce contrasts in visual scale, special characteristics, form, line, color, or texture.

Noise

The analysis of the Proposed Project in Section 3.13.3 identified the following potential impacts associated with noise:

- Impact NOI-1: Temporary increase in ambient noise and vibration levels during construction

- Impact NOI-2: Increase in ambient noise levels at new project stationary facilities and during ROW operation and maintenance activities
- Impact NOI-3: Exposure to ground-borne vibration

Noise generated by the Proposed Project would include operation of heavy equipment during construction, blasting, and noise from pumps associated with the proposed Silver Lake Pump Station. For these potential impacts, the analysis determined that direct, adverse impacts under NEPA could occur as a result of the Proposed Project, and that these impacts could be significant under CEQA. These impacts would occur during construction, and if they occurred, they would be temporary, lasting only a few weeks before the work zone moved past any given point along the route. To avoid or reduce these impacts, a variety of mitigation measures, including implementation of a noise mitigation plan, would be required.

Recreation

The analysis of the Proposed Project in Section 3.14.3 identified the following potential impacts associated with recreation:

- Impact REC-1: Disrupt Recreation Activities in Designated Recreation Areas
- Impact REC-2: Increase Access to Previously Undisturbed Areas (Back Country)

With respect to impact REC-1, the Proposed Project would have temporary impacts on the Stoddard Valley OHV Area by disrupting access patterns, resulting in the use of other access points. The Proposed Project would impact 121 acres of the OHV area during construction. The Proposed Project would also have temporary impacts on recreation resources in the Ivanpah Valley, including Ivanpah Dry Lake and Jean Lake/Roach Lake Special Resource Management Area (SRMA), by restricting access to the areas. The Proposed Project would temporarily disrupt 72.73 acres of Ivanpah Dry Lake, and 169.7 acres of Jean Lake/Roach Lake during the three-week construction period. These impacts would occur during construction, and if they occurred, they would be temporary.

Impacts associated with Impact REC-2 could contribute to a permanent cumulative impact, if not mitigated. Mitigation measures would be required to deter OHV use during and after construction in order to reduce the potential for the Proposed Project to increase access to previously undisturbed areas for unauthorized users.

Social and Economic Conditions

The analysis of the Proposed Project in Section 3.15.3 did not identify any adverse impacts to socioeconomics or environmental justice. Construction of the Proposed Project would have a moderate beneficial short-term impact on the region's economy. As noted in Section 3.15, the estimated labor expenditures would be about $120 million with $60 million expected to be local. Non-pipe materials and consumables expenditures are estimated to be $20 million with $16 million in local spending. Pipe costs are estimated at $60 million and these expenditures have the potential to be procured from within the region. Pipe procurement would depend on which pipe manufacturer was selected. Potentially, up to $136 million in construction spending could be directly channeled into the region. The indirect and induced impacts to the regional economy could be an additional $41 million and $69 million, respectively. The total impact to the regional economy would be about $246 million. Temporary increases in labor would contribute up to 650 jobs for the region, with up to 293 being jobs for the local labor pool. This would place a demand on temporary housing in the region, which may a sizeable, short-term impact on some rural communities. The Proposed Project would add about $1.6 million in ad valorem taxes to local governments, not including franchise fees.

Overall, these increases in economic activity, labor and taxes receipts would provide a socioeconomic benefit to the local and regional economies.

Transportation and Traffic

The analysis of the Proposed Project in Section 3.16.3 identified the following potential impacts associated with traffic and transportation:

- Impact TRAN-1: Increase traffic or roadway hazards.
- Impact TRAN-2: Result in inadequate parking capacity
- Impact TRAN-3: Degrade the existing roadway conditions as a result of construction

For these potential impacts, the analysis determined that direct, adverse impacts under NEPA could occur as a result of the Proposed Project. In addition, Impact TRAN-1 could be significant under CEQA. The duration of these impacts would be temporary for Impact TRAN-1 and TRAN-2, but could be permanent for Impact TRAN-3 if the impact is not mitigated.

During construction, transportation systems in the Proposed Project area would be impacted by an increase in traffic due to an influx of construction workers and the delivery of construction equipment and materials. Construction would also directly affect transportation and traffic in the Proposed Project area at those locations where the pipeline would cross a road or BLM designated open route. To mitigate the impact of construction across transportation routes, MM TRAN-1, which would require development of a Traffic Management Plan, would restrict lane closures and obstacles and requires consultation with jurisdictional agencies regarding construction schedule at road crossings. Lane closures would be identified prior to construction, and in urbanized areas, and limited to off-peak periods. Detours would be clearly identified and adequately noticed to local residents and businesses.

The cumulative analysis concluded that current conditions on Interstate 15, along with concurrent construction of the Proposed Project and other reasonably foreseeable future projects, the number of vehicles using I-15 would increase and would adversely impact traffic load and LOS on I-15 principally on Fridays from noon to 10 p.m. and Sundays afternoon and evenings. The Proposed Project could contribute incrementally to a cumulatively considerable impact, and therefore mitigation would be necessary. Mitigation measures MM-C-TRANS-1 will require the applicant to limit the use of I-15 on Fridays from noon to 10 p.m. and on Sunday afternoons and evenings

Public Safety/Hazardous Materials

The analysis of the Proposed Project in Section 3.17.3 identified the following potential impacts associated with public safety and hazardous materials:

- Impact HAZ-2: Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Impact HAZ-3: Construction or operation of the pipeline would result in the exposure of the public or environment to existing contamination

- Impact HAZ-5: Increase the potential for wildland fires and risk of loss, injury, or death involving fires.

For these potential impacts, the analysis determined that direct, adverse impacts under NEPA could occur as a result of the Proposed Project, and these impacts could be significant under CEQA. The duration of these impacts would range from short-term to long-term, depending on the scope of any incident that involved release of hazardous materials.

The major hazards associated with the operation of petroleum liquids pipelines are the potential release of petroleum products, fires, and explosions. Releases of petroleum products could result in the contamination of soil, surface water, and/or groundwater. Fires occurring as a result of a release from a pipeline can also cause the release of potentially toxic products of incomplete combustion and can also lead to secondary fires of nearby vehicles or structures, or wildfires. A pipeline accident has the potential to cause a significant local impact, including injuries and fatalities to members of the public, property damage, disruption of community activities and traffic patterns, and disruptions to the local energy supply. As discussed in Section 3.2, one potential contributing factor to an accidental release of petroleum from the pipeline would be rupture of the pipeline due to a seismic event. The Applicant has estimated the potential volumes of product lost due to a pipeline rupture at the different fault zones along the pipeline route. The locations of potential releases are specified in Table 3.2-7, and potential release volumes range 1,300 to 5,000 barrels (54,600 to 210,000 gallons).

Alternative 2

A comparison of the impacts of Alternative 2 with the Proposed Action, Alternative 3, and the No Action/No Project Alternative, is provided in Table 2-16 of the Draft EIS/EIR. The route for Alternative 2, at 237.0 miles, is approximately 2.6 miles longer than that of the Proposed Project. Therefore, any potential impacts generally associated with construction of the pipeline, including soil disturbance, disturbance of cultural of paleontological resources, air emissions, noise, water use, visual resources, and traffic and transportation, would be slightly higher for Alternative 2 than for the Proposed Project.

However, Alternative 2 would also incorporate route variations designed to avoid or reduce impacts to specific resources and/or sensitive receptors. Impacts that would be avoided or reduced through these route variations include:

- By using the HDD construction method to avoid the Cajon Wash riparian area at the Wagon Train Road area, Alternative 2 would avoid disturbance of wetlands and biological resources (arroyo toad, least Bells vireo, and Southwestern Willow flycatcher) in the riparian area, avoid potential soil erosion and impacts to surface water quality in the area, and avoid placing the pipeline in an area of potential liquefaction.
- Selection of the Bloomington and Rialto route variations as part of Alternative 2 would increase the length of the pipeline route, but would avoid placing the pipeline in close proximity to schools, parks, residents, and the proposed Renaissance Redevelopment Plan area.
- Selection of the Sunset Lateral route variation as part of Alternative 2 would avoid the need to construct a new lateral in close proximity to two major casinos in Las Vegas.

Selection of Alternative 2 would also potentially result in an increase in impacts in certain areas. In the Rialto and Phelan Road/Baldy Mesa areas, the alternative route would be longer, and have a more circuitous route, than the Proposed route, thus slightly increasing the potential for damage and accidental releases from the pipeline. In the Baker area, selection of the Baker

Alternative would route the pipeline through the developed portion of the town of Baker, rather than bypassing the town as would be done in the Proposed Project.

Alternative 3 (Agency Preferred/Environmentally Superior Alternative)

A comparison of the impacts of Alternative 3 with the Proposed Action, Alternative 2, and the No Action/No Project Alternative, is provided in Table 2-16 of the Draft EIS/EIR. The route for Alternative 3, at 237.5 miles, is approximately 3.1 miles longer than that of the Proposed Project, and 0.5 miles longer than Alternative 2. Therefore, any potential impacts generally associated with construction of the pipeline, including soil disturbance, disturbance of cultural of paleontological resources, air emissions, noise, water use, visual resources, and traffic and transportation, would be slightly higher for Alternative 3 than for either the Proposed Project or Alternative 2.

Alternative 3 would also incorporate several of the route variations which were designed to avoid or reduce impacts to specific resources and/or sensitive receptors. Alternative 3 would include the Wagon Train Road, Rialto, and Sunset Lateral route variations, and would avoid the Cajon Wash riparian area, the schools and parks in Rialto, and the casinos in Las Vegas. However, the route for Alternative 3 would not incorporate the longer and more circuitous route in the Phelan Road/Baldy Mesa area, and would not route the pipeline through the developed portion of the town of Baker.

No Action/No Project Alternative

With the No Action/No Project Alternative, the purpose and need considerations discussed in Section 1.3 of the Draft EIS/EIR would not be met. The anticipated fuel demand in Las Vegas, Nevada and the California High Desert resulting from growth in population and/or tourism would exceed the capacity of the existing Calnev system within the next few years. The current pipeline is at its maximum design capacity; adding additional pump stations cannot increase transport capacity. If this occurred, it is possible that demand would be met through delivery of fuel by rail or truck, options which were considered but eliminated from further consideration in Section 2.3.1.1. If this occurred, adverse impacts associated with these other delivery mechanisms could include increased traffic, air emissions, and potential for accidental releases of petroleum products.

Section 1.0

1.0 Purpose, Need, and Objectives

1.1 Introduction

Calnev Pipe Line, LLC (Calnev), operating partnership for Kinder Morgan Energy Partners, LP, proposes to add an additional refined petroleum products pipeline in California and Nevada, in order to expand the capacity of the Calnev Pipeline System. The Calnev Pipeline Expansion Project (hereafter, the Proposed Project) would involve the construction, operation, and maintenance of a new 16-inch-diameter pipeline and ancillary facilities from an existing facility in Colton, California to an existing facility in Las Vegas, Nevada. The proposed pipeline would parallel two existing system pipelines for most of the route.

Calnev filed an Application for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299) in June 2007 for a grant of right-of-way (ROW) for the new pipeline because the project would be located primarily on lands managed by the United States (U.S.) Department of the Interior (DOI) Bureau of Land Management (BLM). In compliance with the National Environmental Policy Act of 1969 (NEPA), as amended, and the California Environmental Quality Act (CEQA), the BLM together with the County of San Bernardino, California, have prepared this Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to assess impacts that may result from the Proposed Project. Project objectives are summarized below:

- Construct, operate, and maintain a new 16-inch diameter pipeline between Colton, California and Las Vegas, Nevada to increase the capacity of the existing Calnev system to meet future demand;
- Expand the existing Calnev system's capacity to transport up to 200,000 barrels per day of refined petroleum products to delivery points in the California high desert and southern Nevada;
- Increase the reliability of petroleum-products delivery to the California high desert and southern Nevada; and
- Interconnect with the existing Calnev system (e.g., laterals and pump stations).

The existing Calnev Pipeline System transports petroleum products through two pipelines. One pipeline is 8 inches in diameter and the other is 14 inches in diameter. The existing system is the primary means of delivery of petroleum products to the California high desert and southern Nevada. Ongoing growth in the region is projected to require additional delivery of refined petroleum products during the next few years. Additionally, Las Vegas is a major tourist destination, and McCarran International Airport has become a major aviation transportation hub in the Southwest. This has accelerated the demand for refined petroleum products in the region.

The existing two pipelines are nearing their combined capacity and expected to reach maximum capacity in the near future. In 2007, the Applicant increased pumping rates, added storage tanks, and made other improvements to increase capacity from 140,000 to approximately 156,000 barrels per day. Even with this increase, however, maximum capacity could be reached by 2012, depending on economic recovery in the region and associated demand.

Construction of the Proposed Project would increase Calnev Pipeline System capacity from 156,000 to approximately 200,000 barrels per day.

1.2 Location of the Proposed Action

The new pipeline would extend approximately 233 miles from the existing North Colton Terminal in Colton, San Bernardino County, California to the Bracken Junction near the McCarran International Airport in Las Vegas, Clark County, Nevada. In addition to the new pipeline, the Proposed Project would include a new pump station and ancillary facilities near Baker, California; a new 3-mile lateral from the Bracken Junction to McCarran International Airport; and new or modified connections to new or modified laterals, valves, and ancillary modifications (Figure 1-1). The pipeline crosses lands primarily under the jurisdiction of the Bureau of Land Management. In addition, the proposed pipeline would cross lands under the jurisdiction of the United States Forest Service, the United States Navy, Marine Corps Logistics Base, the Counties of San Bernardino, California and Clark, Nevada, and various cities along the Interstate 15 corridor from Colton, California to Las Vegas, Nevada.

1.3 Purpose of the Proposed Action

The BLM's purpose is to determine if Calnev's Proposed Project or alternatives to address the energy needs of the California high desert and southern Nevada are in the public interest, and, if so, to determine appropriate conditions of approval.

1.4 Need for the Proposed Action

Consistent with the Mineral Leasing Act of 1920, as amended, BLM must respond to Calnev Pipe Line, LLC's ROW application to construct, operate, and maintain a new petroleum pipeline and associated ancillary facilities on federal lands, in compliance with BLM ROW regulations, and other applicable federal, State, and local laws. In connection with its decision on this project, the BLM will also consider potential amendments to the CDCA Plan if portions of the project that are outside designated utility corridors are authorized.. The County of San Bernardino, California must process Calnev's requests for amendments to franchise agreements, a Conditional-Use Permit, and encroachment, grading, special use and other permits on lands under its jurisdiction. Other federal agencies and local jurisdictions may require additional permits on lands under their jurisdiction or purview.

1.4.1 Petroleum Use in Nevada and California

The Clark County Blue Ribbon Commission (BRC) was established by the Clark County Board of County Commissioners in September 2005 to study and improve the reliability of Southern Nevada's fuel supply. They released a report summarizing their findings titled, *The Clark County Blue Ribbon Commission to Improve the Reliability of Southern Nevada's Fuel Supply Summary Report* (2006a). As part of their study, the BRC noted that Southern Nevada is one of the fastest growing metropolitan areas in the country. As its population grows, so does its consumption and demand for gasoline, diesel, and jet fuel (Clark County 2006a).

About half of all visitors to Southern Nevada arrive through McCarran International Airport, the fifth busiest airport in North America and tenth busiest in the world. According to the BRC report, Jet-A fuel consumption at the airport is forecasted to increase by 3 percent per year during the next five years. This would be an increase from 1.27 million gallons per day (30,240 barrels per day) in 2006 to 1.47 million gallons per day (35,050 barrels per day) in 2011.

In 2004, vehicles in Nevada used about 3 million gallons of gasoline per day. This was an increase from approximately 2.86 million gallons per day in 2003 (Clark County 2006a). The BRC estimated that demand for non-aviation fuels would increase by approximately 5 percent per year in the next five years (Clark County 2006a). The State of Nevada's total energy consumption by source for 2006 and 2007 is presented in Table 1-1.

This study was the impetus for this project. Although with the economic downturn, growth has slowed in Southern Nevada the area is anticipated to rebound and the pipeline system is still anticipated to reach capacity within the next five years.

Table 1-1 State of Nevada Energy Consumption, 2006 and 2007

Per Capita	**Nevada**	**U.S. Rank**	**Period**
Total Energy	308 million Btu	33	2006
By Source	**Nevada**	**Share of U.S.**	**Period**
Total Energy	767 trillion Btu	0.8%	2006
Total Petroleum	53,621 thousand barrels	0.7%	2007
Motor Gasoline	28,414 thousand barrels	0.8%	2007
Distillate Fuel	13,431 thousand barrels	0.9%	2007
Liquefied Petroleum Gases	915 thousand barrels	0.1%	2007
Jet Fuel	9,207 thousand barrels	1.6%	2007
Natural Gas	254,464 million cubic feet	1.1%	2007
Coal	3,651 thousand short tons	0.3%	2007

Source: Energy Information Administration (EIA) 2009b

Note: A British thermal unit (Btu) is the quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit at the temperature at which water has its greatest density (approximately 39 degrees Fahrenheit).

1.4.2 Petroleum Use in California

California's current population is greater than 37 million people. Its population is projected to increase to more than 44 million by 2020. California's already over-burdened infrastructure—roads, pipelines, ports, refineries, power plants, and transmission lines—will be strained even further to meet the State's increasing demand for energy due to population growth (California Energy Commission 2007). Furthermore, California's limited mass transit options, particularly in the inland areas, and historic tendency toward suburban sprawl, cause residents to rely more heavily on cars. Reliance on cars increases the number of miles traveled by individual vehicles and overall energy demand (California Energy Commission 2007).

The State of California's total energy consumption by source for 2006 and 2007 is presented in Table 1-2.

Table 1-2 State of California's Energy Consumption, 2006 and 2007

Per Capita	**California**	**U.S. Rank**	**Period**
Total Energy	232 million Btu	48	2006
By Source	**California**	**Share of U.S.**	**Period**
Total Energy	8,420 trillion Btu	8.5%	2006
Total Petroleum	718,263 thousand barrels	9.5%	2007

Table 1-2 State of California's Energy Consumption, 2006 and 2007

Per Capita	California	U.S. Rank	Period
Motor Gasoline	380,780 thousand barrels	11.2%	2007
Distillate Fuel	99,024 thousand barrels	6.5%	2007
Liquefied Petroleum Gases	11,505 thousand barrels	1.5%	2007
Jet Fuel	110,794 thousand barrels	18.7%	2007
Natural Gas	2,394,930 million cubic feet	10.3%	2007
Coal	2,779 thousand short tons	0.2%	2007

Source: EIA 2009a

Note: A Btu is the quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit at the temperature at which water has its greatest density (approximately 39 degrees Fahrenheit).

1.5 Relevant Policies, Plans, and Programs

The existing Calnev Pipeline System primarily crosses land managed by the BLM. The BLM would issue a ROW grant across all Federal lands as defined under the Mineral Leasing Act, as amended, for construction of the Proposed Project. The Proposed Project is considered a major federal action that, under NEPA, requires an EIS. The BLM is the lead agency under NEPA.

Other federal agencies that manage lands through which oil and gas pipelines are proposed have various mechanisms to authorize access and construction activities. The other agencies that have been requested to provide access for and construction of the Proposed Action include the Marine Corps Logistics Base (MCLB) in Daggett, California. The San Bernardino National Forest and the MCLB are cooperating agencies in the EIS for lands under their jurisdiction.

The County of San Bernardino is the lead agency under CEQA to take discretionary action on an amendment to its existing franchise agreement with the Applicant for a privately-owned pipeline. The EIR is also required to be considered along with a Conditional Use Permit for a new pump station, if the station is located on jurisdictional land. The station would be located near Baker, California (Figure 2-13). Because the County of San Bernardino would consider and take discretionary action on an amendment to the franchise agreement and possibly a Conditional Use Permit, the Proposed Project is subject to CEQA requirements. The County is the CEQA lead agency for preparation of the combined EIS/EIR.

The following section summarizes the federal, state, and local policies, plans, and laws that apply to the Proposed Project. More detailed information about specific policies, plans, and laws is provided in Chapter 3, which is organized by resource area.

1.5.1 BLM and Federal Laws, Policies, Plans, and Programs

1.5.1.1 Mineral Leasing Act of 1920

The Mineral Leasing Act of 1920, as amended, authorizes and governs leasing of public lands for developing deposits of coal, phosphates, oil, gas and other hydrocarbons and sodium. This Act authorizes the Secretary or appropriate agency head to grant ROWs for pipelines through federal lands, including BLM-managed public lands, for transportation of oil, natural gas, synthetic liquid or gaseous fuels. However, pipeline ROWs may not be granted on lands in the National Park System, lands held in trust for an Indian or Indian tribe, or lands on the outer continental shelf.

The Secretary or agency head must issue regulations or impose stipulations applicable to ROWs or permits granted or renewed pursuant to the Act. The regulations or stipulations must include requirements for: restoration, revegetation, and curtailment of surface erosion; fulfillment of applicable air and water quality standards; control or prevention of damage to the environment, including fish and wildlife habitat; protection of the interests of individuals living in the ROW or permit area who rely on the fish, wildlife and biotic resources of the area for subsistence purposes. A ROW may be suspended or terminated for noncompliance with these requirements.

1.5.1.2 National Environmental Policy Act

NEPA requires Federal agencies to review the effects of its actions on the natural and human-made environment prior to taking action. The review process helps not only Federal officials but also the public understand the environmental consequences of major projects and actions. This law requires all Federal actions that could result in a significant impact on the environment to be subject to review by Federal, Tribal, State, and local environmental authorities as well as by affected parties and interested citizens.

1.5.1.3 Clean Air Act

The Clean Air Act, as amended, regulates air pollution to improve air quality. This Act regulates air emissions from area, stationary, and mobile sources. This law also authorizes the U.S. Environmental Protection Agency to establish National Ambient Air Quality Standards to protect public health and the environment.

1.5.1.4 Clean Water Act (CWA)

The CWA regulates discharges of pollutants into the waters of the United States. Also included are requirements to set water quality standards for all contaminants in surface waters. The CWA makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provision.

1.5.1.5 Federal Endangered Species Act (FESA)

The FESA of 1973, as amended, provides for the Federal protection of threatened and endangered species. The United States Fish and Wildlife Service administers FESA on behalf of the United States. The major components of the Act include:

(1) Provisions for the listing of threatened and endangered species;

(2) The requirement for consultation with the United States Fish and Wildlife Service (USFWS) on Federal projects;

(3) Prohibitions against "take" of listed species. Under FESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct;" and

(4) Provisions for permits to allow the incidental taking of threatened and endangered species.

1.5.1.6 National Historic Preservation Act of 1966, as Amended

The National Historic Preservation Act of 1966 requires Federal agencies with jurisdiction over a proposed Federal project to take into account the effect of the undertaking on cultural resources listed or eligible for listing on the National Register of Historic Places, and afford the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation an opportunity to comment regarding the undertaking.

1.5.1.7 Federal Land Policy and Management Act (FLPMA) of 1976

The FLPMA is important in several key ways for this proposal. It provides the BLM's 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)).

1.5.1.8 California Desert Conservation Area (CDCA) Plan

The CDCA encompasses 25 million acres of land in Southern California designated by Congress in 1976 through the FLPMA. Congress directed the BLM to prepare and implement a comprehensive, long-range plan for the management, use, development, and protection of public lands within the CDCA. The 1980 CDCA Plan, as amended, is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. The CDCA Plan provides overall regional guidance for management of the public lands in CDCA and establishes long-term goals for protection and use of the California desert.

The CDCA Plan establishes four multiple use classes (MUCs), MUC guidelines, and plan elements for specific resources or activities such as motorized-vehicle access, recreation, vegetation, and utility corridors, as well as the processing of CDCA Plan amendments. The majority of the Proposed Project is within MUC Moderate Use, with a portion of the route located in MUC Limited Use:

- Class L (Limited Use): These lands are managed to protect sensitive, natural, scenic, ecological, and cultural resource values. They provide for generally lower-intensity, carefully controlled multiple uses that do not significantly diminish resource values.
- Class M (Moderate Use): These lands are managed in a controlled balance between higher-intensity use and protection. A wide variety of uses such as mining, livestock grazing, recreation, energy, and utility development are allowed. Any damage that permitted uses cause must be mitigated.

The majority of the Proposed Project is also within two utility corridors established by the CDCA Plan for the Southern California desert. In designating these corridors, a major consideration was to identify, where feasible, suitable linear alignments that followed existing major utilities, in order to minimize the proliferation of large utility facilities in the desert. The scope of the CDCA Plan allows the designation of corridors which address four types of utility facilities and encourages joint use for these facilities within the corridors. One of the four types of uses suitable for corridors is pipelines with diameters greater than 12 inches. These corridors vary in width between 2 to 5 miles, and are specifically designed to address the continued expansion of utility facilities for the purpose of telecommunications and bulk transfers of electricity, gas, water, petroleum, and other commodities.

The southern portion of the Proposed Project route follows utility Corridor D through the Cajon Pass area. However, between Victor Valley and Barstow, Corridor D splits and one section follows the National Trails Highway adjacent to the Mojave River and the other portion continues to follow I-15 through an area which has gone through a significant amount of urbanization and highway expansion. Concerns about riparian impacts along the National Trails segment and about the feasibility of siting in an area constantly experiencing urban construction along the I-15 segment in this area, have resulted in the siting of pipelines outside the existing Corridor D between mileposts MP-47 to MP-60, roughly halfway between I-15 and the National Trails Highway. The Proposed Project would parallel those existing pipelines in this area, and therefore, like previous pipelines in the area, would require an amendment to the CDCA Plan. The northern portion of the route, from Barstow to the Nevada border follows utility corridor BB, roughly paralleling Interstate 15.

This plan has been amended numerous times since 1980, the most recent of which is the West Mojave Plan (BLM 2005) in the area covered by the Proposed Project.

1.5.1.9 Las Vegas Resource Management Plan

The Las Vegas Resource Management Plan provides a comprehensive framework for managing approximately 3.3 million acres of public lands administered by the BLM Las Vegas Field Office. The following lands management objective and management direction are applicable to the Proposed Project:

- **Land Use Authorizations Objective LD-2.** All public lands within the planning area, unless otherwise classified, segregated, or withdrawn, and with the exception of Areas of Critical Environmental Concern and Wilderness Study Areas, are available at the discretion of the agency, for land use leases and permits under FLPMA §302 and for airport leases under the authority of the Act of May 24, 1928, as amended.
- **Management Direction LD-2a.** Land use lease or permit applications and airport lease applications will be addressed on a case-by-case basis, where consistent with other resource management objectives and local land uses. Special terms and conditions regarding use of the public lands involved will be developed as applicable.

The following ROW Management objective and management direction are applicable to the Proposed Project:

- **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 in holdings, communications, flood control, major utility transmission lines, and related facilities.
- **Management Direction RW-1-c.** When feasible, and where compatible, major pipeline ROWs will be placed within power line corridors.

The following Wilderness Management objective is applicable to the Proposed Project:

- **Objective WS-1.** Ensure that characteristics on certain lands that caused them to be inventoried and designated as Wilderness Study Areas are maintained and not diminished or lessened in any way that might constrain or limit Congress' final wilderness designation decisions.

In addition, the BLM Las Vegas Field Office has prepared the Las Vegas Noxious Weed Plan to provide guidance for an active integrated weed management program using best management practices.

1.5.1.10 San Bernardino National Forest Land and Resource Management Plan (USDA 2006), United States Forest Service (USFS)

The Proposed Project would cross through the San Bernardino National Forest, which is under the jurisdiction of the USFS. According to the National Forest Service Management Act and its implementing regulations, all actions authorized subsequent to the plan must be in conformance with the approved forest plan. An action must be specifically mentioned in the forest plan or be clearly consistent with the decisions to be in conformance.

The LRMP for the San Bernardino National Forest guides all natural resource management activities and establishes management standards and guidelines for the San Bernardino National Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management. The LRMP includes multiple use goals and objectives that define the direction of Forest-wide management. The goals and objectives pertain to recreation, wilderness, wildlife and fish, range, timber, soil and water, minerals, lands, facilities, protection, and public information.

1.5.2 State and Local Policies, Plans, and Programs

1.5.2.1 California Environmental Quality Act

Under the provisions of the CEQA, the purpose of an environmental impact report is "to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided." (Public Resources Code Section 21002.1[a]). The intentions of CEQA are to: (1) inform governmental decision-makers and the public about the potentially significant environmental effects of proposed activities, (2) identify the ways that environmental damage can be avoided or significantly reduced, (3) prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible, and (4) disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved (State CEQA Guidelines Section 15002: Public Resources Code Section 21002.1).

1.5.2.2 Other State Plans and Programs

The plans and programs discussed below are directly or indirectly applicable to the planning process for the Proposed Project

__Air Quality Management Districts__

Under the authority of CEQA, the South Coast Air Quality Management District and the Mojave Desert Air Quality Management District review the plans and specifications for construction that will be undertaken for the Proposed Project. Emissions and possible air contamination resulting from construction activities (e.g., operational road dust, wind-blown contaminants, and emissions from construction activities) will be assessed.

California Endangered Species Act

CESA allows the California Department of Fish and Game to authorize project proponents to "take" state-listed threatened, endangered, or candidate species if certain conditions are met. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include "harm" or "harass," as under FESA. The permitting program administers the incidental take provisions of CESA to ensure regulatory compliance and statewide consistency.

State Historic Preservation Offices

The California and Nevada SHPOs review state programs and projects that may impact historical resources that are located on State-owned land pursuant to California Public Resources Code §§5024 and 5024.5.

California Department of Transportation (Caltrans)

The California Department of Transportation is a state agency that reviews and approves requests for any proposed construction and/or activities, other than for normal transportation purposes, that would take place within the ROWs of state highways in California.

1.5.2.3 San Bernardino County General Plan

The County of San Bernardino 2007 General Plan governs land use planning and development decisions in the unincorporated areas of the County. The plan contains the goals, policies, and implementing actions for a variety of issues including natural and man-made hazards and natural and man-made resources.

The Proposed Project must comply with all applicable General Plan Elements. The Energy subsection of the Conservation Element discusses the under-grounding of pipelines and states that the "County will site energy facilities equitably in order to minimize net energy use and consumption of natural resources, and avoid inappropriately burdening certain communities. Energy planning should conserve energy and reduce peak load demands, reduce natural resource consumption, minimize environmental impacts, and treat local communities fairly in providing energy efficiency programs and locating energy facilities."

The Proposed Project must conform to the Open Space Element for health and safety measures and the Safety Element. The Proposed Project route crosses areas susceptible to liquefaction, landslide, and earthquakes.

1.5.2.4 Clark County Comprehensive Plan, Nevada

The Clark County Comprehensive Plan is a long-term general policy plan for the physical development of unincorporated Clark County, Nevada. The Comprehensive Plan is a compilation of individual documents called elements that are updated periodically. The Proposed Project would conform to the Clark County Comprehensive Plan and all of its elements plan. Specifically, the Proposed Project must comply with the plan's Utilities Element, which requires utility providers to locate pipelines within Clark County's existing utility corridors when technically feasible.

1.5.2.5 City Plans

Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Las Vegas and Henderson, Nevada. Each city has an adopted General Plan, which is a comprehensive, long range declaration of purposes, policies, and programs for future development of the city.

1.6 NEPA/CEQA Joint Process

This section describes the process for preparation of documentation designed to satisfy the requirements of both NEPA and CEQA. The involvement of a federal and a local agency requires compliance with both NEPA and CEQA to obtain permits necessary for construction, operation and maintenance of the Proposed Project. Federal regulations implementing NEPA (40 CFR 1502(b)) encourage cooperation and preparation of joint federal and state environmental documents to reduce duplication. State regulations implementing CEQA (CEQA Guidelines §15222) also strongly encourage cooperation with the lead federal agency in preparation of a joint environmental document. With joint documents, a single document is prepared and circulated for public review to meet the requirements of both NEPA and CEQA. The following sections describe the background and process for a joint NEPA/CEQA document.

1.6.1 Lead and Cooperating Agencies

The BLM is the lead agency for NEPA compliance and the County is the lead agency for CEQA compliance. The involvement of a federal and local agency requires compliance with both NEPA and CEQA regulations. As per 40 CFR 1505.2 of NEPA and §15170 of CEQA, the BLM and the County of San Bernardino have prepared this joint EIS/EIR.

The Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1501.6) provide for and describe both lead and cooperating agency status, and emphasize inter-agency cooperation early in the NEPA process. Cooperating agencies are involved throughout the process and play a key role in development of the EIS/EIR.

BLM and the County of San Bernardino have invited tribal, state, and local governments as well as other federal agencies to serve as cooperating agencies on the Proposed Project. The USFS and the United States Marine Corps have indicated that they will be formal cooperators since they will be approving permits for access and construction activities on lands within their jurisdiction. These agencies have participated in various project meetings and used their special expertise to provide input into this EIS/EIR and supporting documentation. Other federal, state, and regional agencies and municipalities that are affected by the proposal or alternatives are also participating by providing input.

1.6.2 Notice of Intent (NOI) and Notice of Preparation (NOP)

NEPA and CEQA require an early and open process for determining the issues that should be addressed in an EIS/EIR. The BLM and the County began the scoping process by publishing a NOI in the Federal Register and distributing NOPs, respectively, to the potentially affected agencies and the public.

The BLM published a NOI to prepare the EIS/EIR in the Federal Register (page 13558, Volume 73, Number 50) on Thursday, March 13, 2008, to solicit agency, organizational, and public comment on issues, concerns and opportunities that should be considered in the analysis of the Proposed Project. A copy of the NOI, as printed in the Federal Register, is included in Appendix A.

Following CEQA requirements, a NOP was filed by the County Land Use Services Department to notify the responsible agencies, trustee agencies, Office of Planning and Research, federal agencies, and the public of the preparation of the EIS/EIR document. Similar to the NOI, the purpose of the NOP is to solicit guidance from agencies and the public as to the scope and content of the environmental information included in the joint document. The NOP was issued on March 17, 2008 and a copy was mailed to 1,590 residents and nongovernmental organizations to inform the public of the Proposed Project, and to provide notice for the public scoping meetings. A copy of the NOP is included in Appendix A.

1.6.3 Process for Identification and Evaluation of Alternatives

Both NEPA and CEQA require the identification and analysis of alternatives to the applicant's proposal, which is referred to as the Proposed Action under NEPA, and the Proposed Project under CEQA. The alternatives are developed in Section 2.3 of this EIS/EIR, and those retained for full evaluation are analyzed within Chapter 3. In accordance with CEQ regulations in 40 CFR 1502.14(e) and the BLM NEPA Handbook (H-1790-1), Section 2.5 of this Draft EIS/EIR identifies one of the evaluated alternatives as the Agency Preferred Alternative. The same alternative is also identified as the Environmentally Superior Alternative in accordance with CEQA (CA Code Regulations, Title 14 §15126.6(e)(2)). The EIS/EIR also evaluates the potential impacts that would occur if no action is taken by the agencies, which is the No Action Alternative under NEPA, and No Project Alternative under CEQA.

After taking public comments on this Draft EIS/EIR into account, the County of San Bernardino will identify the Environmentally Superior Alternative in the Final EIS/EIR and coordinate findings with the BLM.

1.6.4 Areas of Controversy/Issues Raised During Scoping

The BLM and County of San Bernardino held five public scoping meetings along the pipeline route. The meetings were held in:

- Rialto, California on April 1, April 30, and June 18 in 2008;
- Victorville, California on April 2, 2008; and
- Las Vegas, Nevada on April 3, 2008.

More than 85 people attended the scoping meetings. In addition to verbal comments received during these scoping meetings, the BLM and the County of San Bernardino received 44 electronic-mail messages and letters from elected officials, agencies, organizations, and private citizens by the July 1, 2008 deadline. Table 1-3 is a list of major issues raised during public scoping. A detailed list is provided in the Scoping Summary Report (Appendix A). Substantive scoping comments have been considered in the development and analysis of this Draft EIS/EIR.

At the Rialto meetings, the most frequent issues raised had to do with the proximity of the pipeline to public schools. These issues are addressed in Sections 3.10 (Lands and Realty), 3.13 (Noise), 3.15 (Social and Economic Conditions), 3.17 (Public Safety/Hazardous Materials).

Table 1-3 Summary of Major Topics Raised During Public Scoping

• Aesthetics/visual impacts	• Geologic resources
• Agency involvement (includes USFS and Rialto City Council)	• Land use
• Agriculture and soils	• Noise and vibration
• Air quality and greenhouse gases	• Project description (includes design of the proposed Project, use of existing or retired pipelines, and alternative alignments)
• Biological Resources	• Public safety and proximity to schools
• Construction impacts and techniques, and contamination during construction	• Hazardous materials and public safety (includes transportation of hazardous materials and possible soil contamination)
• Cultural resources	• Purpose and need for the proposed Project
• Cumulative impacts	• Transportation and traffic
• General support/general opposition	• Water quality (includes storm water management practices)

1.6.5 Draft EIS/EIR Procedure

This Draft EIS/EIR has been distributed for public review and comment in accordance with NEPA and CEQA procedures. Copies were submitted to the State Clearinghouse for agency distribution. Copies of the Draft EIS/EIR were distributed to all concerned federal, state, and local agencies, environmental groups, interested individuals, and are available at area public libraries for the interested public to review.

A Notice of Availability (NOA) of the Draft EIS/EIR has been published by EPA and BLM in the Federal Register to give agencies, tribes, organizations, and the public notice of availability of this document and the opportunity to provide comment on its content. To comply with CEQA regulations, the County is also publishing a Notice of Completion (NOC) in a newspaper of general circulation indicating the availability of the Draft EIS/EIR regarding the Proposed Project. The County also sent a NOC to the State Clearinghouse, concerned agencies, property owners, and other concerned parties.

The filing of the NOA by the EPA initiates a 90-day public review and comment period to comply with NEPA regulations, and the filing of the NOC by the County of San Bernardino initiates a concurrent agency and public review and comment period to comply with CEQA regulations. Public meetings on the Proposed Project will be held in the Colton/Rialto, Victorville, and Las Vegas areas. The dates, times and specific locations for these three meetings will be announced in newspapers of general circulation and on the BLM, California website (http://www.blm.gov/ca/st/en.html) with a link to the electronic version of the document and other supporting information on the BLM, Barstow Field Office website (http://www.blm.gov/ca/st/en/fo/barstow.html). Likewise, the news release advertising meeting details and other EIS/EIR documents will be electronically posted on the San Bernardino County website (http://www.co.sanbernardino.ca.us/landuseservices/Public%20Notices /Projects/Projects.htm).

1.6.6 Final EIS/EIR Procedure

Following the public review period, comments will be posted on the BLM, Barstow Field Office website. Substantive comments received on this Draft EIS/EIR, including additional input from responsible agencies, will be considered in development of the Final EIS/EIR. Correspondence related to review of the Draft EIS/EIR and associated public meetings will be included as an appendix to the Final EIS/EIR.

Copies of the Final EIS/EIR will be filed with the EPA and a NOA of the Final EIS/EIR will be published in the Federal Register, on the BLM and County websites, and in newspapers of general circulation. Copies of the NOA will also be sent to interested agencies, property owners, and other interested parties, including commenters on the Draft EIS/EIR, announcing that the Final EIS/EIR will be available for at least 30-days prior to BLM signing a Record of Decision (ROD).

1.7 CDCA Plan Amendment Process

In addition to the Proposed Project, this EIS/EIR also considers an amendment to the CDCA Plan. The Energy Production and Utility Corridors Element of the CDCA Plan identifies 16 planning corridors designated for utility facilities, including pipelines with diameters greater than 12 inches. The CDCA Plan requires that utility needs that do not conform to the adopted corridor system will be processed by means of a Plan Amendment in conjunction with necessary permit hearings required by other agencies. Although the existing pipelines were installed prior to the establishment of the corridors, the proposed pipeline would be installed after the corridors were designated, and so would have to comply with the CDCA Plan requirements for utility corridors.

For the Proposed Project, the majority of the proposed route of the pipeline is located within designated utility corridors D and BB, with the exception of the proposed route between Adelanto Junction and Lenwood Junction (approximately between mileposts MP-47 and MP-60). In that area, the proposed route would continue to occur within the right-of-way followed by the existing 8-inch and 14-inch pipelines. Therefore, although the proposed route would not be within a designated corridor in this area, it would be located in a right-of-way which has already been disturbed, and which is already the location of other utilities.

Because the proposed pipeline route varies from the designated corridors in one location, the required Plan Amendment and EIS for the proposed project are being processed together, and the NEPA process has been modified as needed to also satisfy plan amendment requirements and timeframes. This is a Category 3 amendment, in which there is a request for a specific use or activity (the pipeline ROW) which requires additional analysis and decision (this EIS) beyond the Plan Amendment decision. The process for considering Category 3 Plan Amendments begins with the recommendation of the Plan Amendment by the Desert District manager to the State Director, and public notice of the amendment decision. Once the decision has been published, protests will be received for 30 days following the notice. For this project, the proposed plan amendment will be identified concurrent with the release of the FEIS/FEIR, and the final decision will be made after required protest periods and consultations, concurrent with the BLM Record of Decision for the EIS.

1.8 Authorizing Actions/Use of this EIS/EIR

Federal, state, and local permits and approvals would be required before construction and operation of the approved project can proceed. This EIS/EIR document may be used to support these authorizations, consistent with appropriate federal, State and local laws and regulations, based on findings of the ROD and NOD. A list of the major permits, approvals, and consultations required is presented in Table 1-4. The Applicant would be responsible for obtaining all permits and approvals required to implement the project, as approved.

Table 1-4 Major Permits, Approvals, and Consultations

Agency	Required Permit or Approval	Agency Action
Federal Agencies		
US Dept. of the Interior Bureau of Land Management (BLM)	Lead Federal Agency for NEPA compliance	
	Right-of-Way (ROW) Grant	A ROW for portions of the proposed Project that would encroach on federal lands.
	Notice to Proceed	Following issuance of the right-of-way grant and approval of the Construction Operation and Maintenance Plan, issue a Notice to Proceed with construction activities.
Advisory Council on Historic Preservation	Section 106 Consultation, National Historic Preservation Act (NHPA)	Has the opportunity to comment if the proposed Project may affect cultural resources that are either listed on or eligible for listing on the National Register of Historic Places
United States Fish and Wildlife Service (USFWS)	Compliance with California and Federal Endangered Species Acts and similar regulatory requirements; development of final biological opinions by the California Department of Fish and Game (CDFG), the Nevada Department of Wildlife (NDOW), and USFWS; Section 7 consultation and biological opinion (Endangered Species Act)	Provide Biological Opinion if the proposed Project may adversely affect federally listed or species proposed for listing, or their habitats.
United States Forest Service (USFS)	Compatibility determination	Provide concurrence to the BLM decision with any conditions for construction of the pipeline on USFS lands.
Army Corps of Engineers (ACOE)	Clean Water Act Permit (CWA) §404 permit (nationwide or individual permit)	Issue a CWA §404 permit (nationwide or individual) for discharge of dredged or fill material for construction of the pipeline across the Mojave River and crossing of other rivers, streams and wetlands (where trenched). Issue a Nationwide Permit #12 (Utility Line Backfill & Bedding) or Nationwide Permit #18 (discharges of less than 10 cubic yards of dredged or fill material).
Nebo and Yermo Annexes, Barstow United States Marine Corps Logistics Base	Easement	Issue an easement across United States Marine Corps property.

Table 1-4 Major Permits, Approvals, and Consultations

Agency	Required Permit or Approval	Agency Action
California State Agencies		
California Department of Fish and Game (CDFG)	Compliance with California and Federal Endangered Species Acts and similar regulatory requirements; development of final biological opinions by CDFG, NDOW, and USFWS	Review the proposed Project for potential impacts to State listed species.
	Streambed Alteration Agreement (Section 1603 of the California Fish and Game Code)	Issue a Section 1603 Streambed Alteration Agreement for crossing of specified streams or other drainages by trenching.
California Regional Water Quality Control Board (RWQCB), Santa Ana Region 8; Colorado River Basin Region 7	Section 401 Water Quality Certification Permit	Approve certification of activities related to dredge and fill materials.
	National Pollutant Discharge Elimination System (NPDES) Permit or Report of Waste Discharge (RWD)	Issue NPDES or RWD for discharge of hydrostatic test water or construction dewatering to surface waters or onto dry lands, respectively.
	CWA Section 404 Permit	Issue CWA Section 404 permit.
California State Water Resources Control Board (SWRCB)	General Construction Activity Storm Water permit for construction activities on a project of 5 acres or larger	Authorize storm water discharges to surface waters, pursuant to a General Construction Activities Permit for Construction.
	Temporary permit to appropriate water	Issue a temporary permit for use of water from a surface stream or other body of water for use in hydrostatic testing of pipeline.
California Dept. of Transportation (Caltrans)	Encroachment Permits	Issue permits for any activities affecting state highways or within highway easements, including placement of pipeline across, within, under or over statement highway ROW.
California State Historic Preservation Office	Section 106 Consultation, NHPA	Consult with BLM, the Applicant, appropriate land management agencies, and others regarding proposed Project activities that may affect cultural resources.
California State Lands Commission	Land Use Lease/Dredging Permit	Issue a land use lease/dredging permit for use of, or potential dredging within state-owned sovereign lands.
Mojave District Air Quality Management District	Dust Control Plan	Review and approve the dust control plan for the project and/or issue a temporary permit for construction activities causing fugitive dust.
South Coast Air Management District	Dust Control Plan	Review and approve the dust control plan for the project and/or issue a temporary permit for construction activities causing fugitive dust.

Table 1-4 Major Permits, Approvals, and Consultations

Agency	Required Permit or Approval	Agency Action
Nevada State Agencies		
Nevada Department of Wildlife (NDOW)	Compliance with Federal Endangered Species Acts and similar regulatory requirements; development of final biological opinions by CDFG, NDOW, and USFWS.	
Nevada Division of Forestry (NDOF)	May defer to the USFWS for documentation and permits for any required NDOF permits granting Take of State-Listed Plant Species.	
Nevada Department of Transportation (NDOT)	Encroachment Permits	Consider issuance of permits for any activities affecting state highways or within highway easements, including placement of pipeline across, within, under, or over statement highway ROW.
Nevada Department of Environmental Protect ion, Water Pollution Control Board	National Pollutant Discharge Elimination System (NPDES) Permit or Report of Waste Discharge (RWD)	Issue NPDES or RWD for discharge of hydrostatic test water or construction dewatering to surface waters or onto dry lands.
Public Utilities Commission of Nevada	Utilities Environmental Permitting Act for installation of a major utility in the State of Nevada	
Local Agencies		
County of San Bernardino	Conditional Use Permit	Issue a Conditional Use Permit for proposed Silver Lake Pump station.
	Encroachment Permit	Issue an encroachment permit for work within County Road ROW(s).
	Flood Control Encroachment Permit	Issue a Flood Control Encroachment Permit for crossing of a flood berm owned by the County Flood Control District.
County of San Bernardino	Franchise Agreement	Issue a Franchise Agreement for privately owned pipeline through San Bernardino County.
Clark County	Grading Permit	Issue a grading permit.
	Conditional Use Permit	Issue a Conditional Use Permit.
	Special Use Permit for privately-owned pipeline through County	Issue a Special Use Permit for a privately-owned pipeline through Clark County.
	Planning and Zoning Permit	Issue a planning and zoning permit for installation of pipeline in improperly zoned lands.
	Building Permit	Issue a building permit for construction of proposed Project components.
	Encroachment Permit	Issue an encroachment permit for construction within Clark County ROWs.

Sources: URS 2007a, 2007b.

This EIS/EIR is intended to provide the information and environmental analysis necessary to inform public agency decision makers and the public about the potential environmental consequences of the proposed activities and alternatives. This document is also intended to assist public agency decision-makers in consideration all of the approvals necessary to implement the Proposed Project. Specifically, the information contained in this EIS/EIR is intended to be considered by the Bureau of Land Management and the County of San Bernardino in their respective deliberations, as applicable, regarding approval of the ROW grant, the conditional use permit for the Silver Lake Pump Station and franchise agreement, respectively. The document may also be considered by the responsible agencies listed in Table 1-4 with regard to their respective permits and approvals.

References

Bureau of Land Management (BLM). 2005. Final Environmental Impact Report and Statement for the West Mojave Plan, A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment, Vol. 1. U.S. Department of the Interior.

California Energy Commission. 2007. *Integrated Energy Policy Report* (Report CEC-100-2007-008-CMF. December 5.

Clark County. 2006a. *Clark County Blue Ribbon Commission to Improve the Reliability of Southern Nevada's Fuel Supply Summary Report*. October.

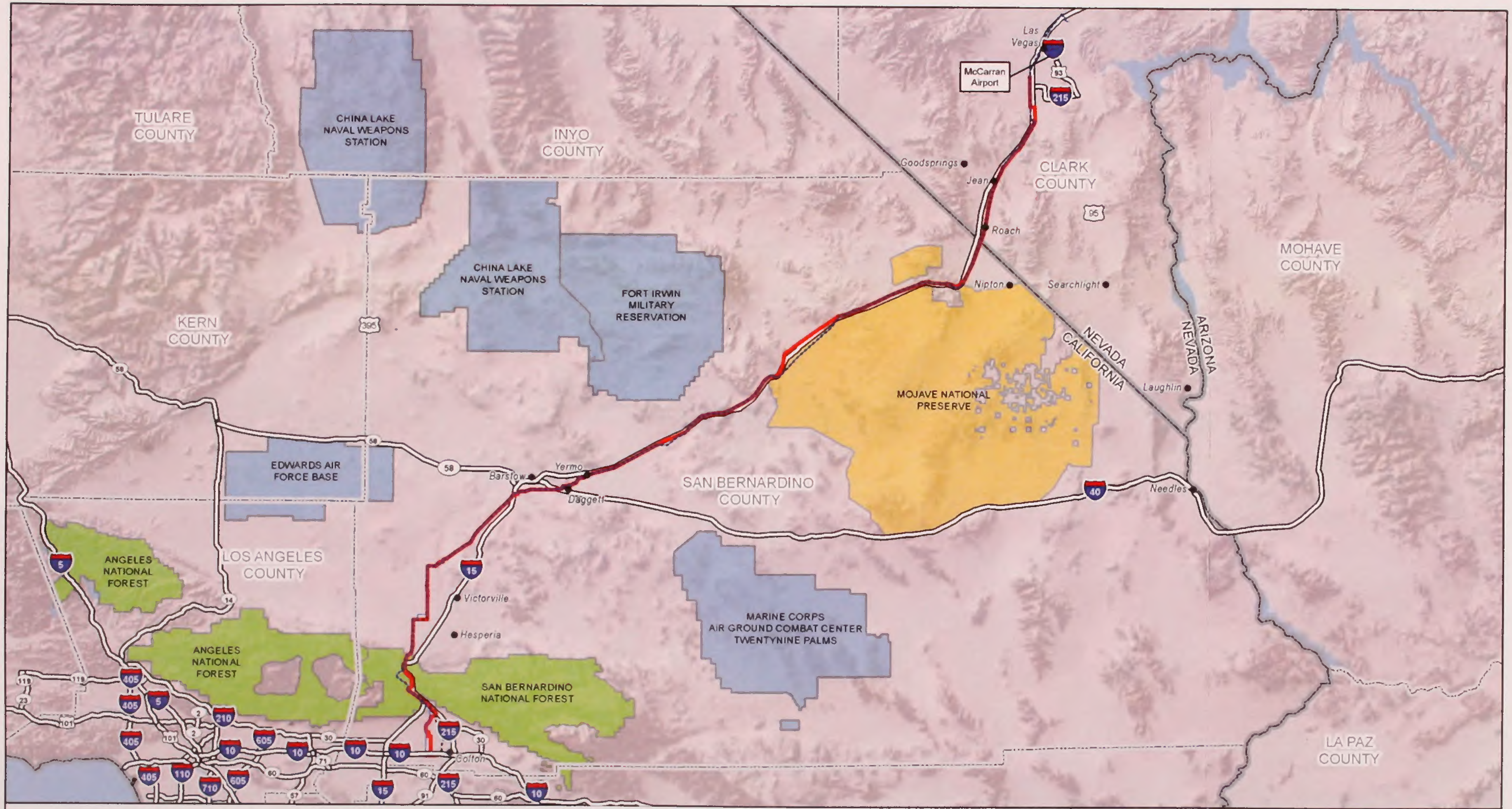
Energy Information Administration (EIA). 2009a. *State Energy Profiles, California*. http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=CA. Accessed May 26, 2009.

Energy Information Administration (EIA). 2009b. *State Energy Profiles, Nevada*. http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=NV#. Accessed May 26, 2009.

URS Corporation. 2007a. *BLM Application for Right-of-Way Grant (Standard Form 299) for the Calnev Expansion Project*. June 15.

URS Corporation. 2007b. *Supplement to BLM Application for Right-of-Way Grant (Standard Form 299) for the Calnev Expansion Project*. June 27.

United States Department of Agriculture. 2006. San Bernardino County National Forest Land Management Plan (LRMP). Available online at: http://www.fs.usda.gov/wps/portal/fsinternet/!ut/p/c4/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gjAwhwtDDw9_AI8zPwhQoY6BdkOyoCAPkATIA!/?ss=110512&navtype=BROWSEBYSUBJECT&cid=FSE_003756&navid=130100000000000&pnavid=130000000000000&position=BROWSEBYSUBJECT&ttype=main&pname=San%20Bernardino%20National%20Forest-%20Planning.



🟥 Proposed Pipeline Right of Way

Exiting CalNev Facilities

······ 14-inch pipelines

—— 8-inch pipelines

FIGURE 1-1
OVERVIEW OF THE PROPOSED PROJECT

N

0 10 20 Miles

SOURCE:
ESRI 2008

E:\GIS\CalNev_Pipeline\MXDs\Overview_02082011.mxd
June 28, 2011

Section 2.0

2.0 Description of Proposed Action and Alternatives

2.1 Introduction

This chapter describes the Calnev Pipe Line, LLC (Calnev) Pipeline Expansion Project, including all the structural components, construction procedures, and operation and maintenance activities for the 233-mile16-inch-diameter refined petroleum products pipeline from the Colton Terminal and Pump Station in Colton, California, to the Bracken Junction near the McCarran International Airport in Las Vegas, Nevada. The new 16-inch diameter pipeline would augment the existing 8-inch and 14-inch subsurface petroleum pipelines, and slightly extend the system to service additional locations more conveniently.

Four alternatives, Alternative 1 (the Proposed Action), Alternative 2 (Modified Route Alternative), Alternative 3 (the Agency-Preferred Alternative), and the No Project/No Action Alternative are considered in this Environmental Impact Statement (EIS)/Environmental Impact Report (EIR). Chapter 2 includes a summary of the proposed project, including a discussion of the general project construction, operation, and maintenance activities common to all three action alternatives being considered. Next, this chapter discusses the alternatives, including the process used to identify and evaluate project alternatives, the Calnev Proposed Action (Alternative 1), the second alternative composed of various section-by-section route changes considered to the Proposed Action to reduce specific environmental impacts (Alternative 2, Modified Route Alternative), and a third action alternative (Alternative 3, the agency-preferred alternative) which is a combination of the first two alternatives and some other minor route options to strike a balance between Alternatives 1 and 2 for some areas, and the No Action/No Project Alternative (no pipeline or related facilities). The chapter also discusses the rationale for elimination of some alternatives from further consideration. Maps of the three alternative pipeline routes analyzed in this document are also provided.

The structural components and construction, operations, maintenance, and decommissioning activities associated with the Proposed Action, most of which are common to all action alternatives, are described in Section 2.2. Section 2.2 also describes the route as proposed by Calnev, with two minor modifications based on conflicts with law or policy.

Section 2.3 discusses how alternatives to the Proposed Project were developed, including potential alternative projects to meet the purpose and need for the Proposed Action, and a summary of scoping comment provided by the public and government agencies. Section 2.3 then evaluates and develops alternative route alternatives for the pipeline based on the scoping comments.

Section 2.4 discusses the features of Alternative 2, the Modified Route Alternative, which is a compilation of route changes to address specific issues brought forward during scoping, after review of baseline data collection and field visits by various agencies, and/or the result of ongoing discussions between the applicant and the lead and cooperating agencies, or participating agencies.

Section 2.5 discusses Alternative 3, which is identified in this Draft EIS/EIR as the Agency Preferred (under NEPA) and Environmentally Superior (under the California Environmental

Quality Act [CEQA]) Alternative. This alternative draws from Alternatives 1 and 2, as well as some other minor route options. Section 2.6 summarizes the features of the No Project/No Action Alternative. Section 2.7 provides a comparison of the alternatives.

2.2 Features Common to All Action Alternatives

This section provides a detailed description of the Proposed Project, including:

- Section 2.2.1 – Overview of the project;
- Section 2.2.2 – Detailed description of the Applicant's proposed route as specified in their SF-299 right-of-way (ROW) application for the Proposed Project (Alternative 1);
- Section 2.2.3 – Description of the procedures and materials required for construction of the pipeline;
- Section 2.2.4 – Description of the activities for operation, maintenance, and safety of the project; and
- Section 2.2.5 – Discussion of the projected lifespan and decommissioning of the pipeline and facilities.
- Section 2.2.6 – Applicant Proposed Mitigation Measures.
- Section 2.2.7 – CDCA Plan Amendment.

As presented below, this section constitutes a description of Alternative 1, the Proposed Action (for NEPA) and the Proposed Project (for CEQA). This EIS/EIR also evaluates two additional action alternatives: Alternative 2 and Alternative 3. The general route of the proposed pipeline is within or adjacent to the currently existing Calnev pipeline route, and is approximately the same for all three action alternatives. In addition, all features of the construction, operation, and decommissioning of the pipeline under Alternatives 2 and 3 would be the same as that described for the Proposed Project. Therefore, Section 2.2 provides a complete description of the features that are common to all three action alternatives. The only difference between the Alternatives 2 and 3 and the Proposed Action are location-specific variations to the proposed route, which are discussed and evaluated in detail in Sections 2.4 and 2.5 below. However, those sections do not repeat the discussion of the construction, operation, and decommissioning of the project as presented in Section 2.2.

2.2.1 Overview of the Pipeline Project

Calnev proposes to expand the capacity and reliability of its refined petroleum products pipeline, which begins in Colton, California and ends in Las Vegas, Nevada (Figure 2-1a). The project would add a new 16-inch pipeline within the utility corridor designated in the Bureau of Land Management (BLM) land use plans for this area. The existing Calnev system is within this same utility corridor, and includes the 8- and 14-inch diameter subsurface pipelines shown in Figure 2-1a, as well as several pump stations, terminals, and junctions further described in Table 2-1. The existing system features pipelines and ancillary facilities that are not proposed for modification and do not require further analysis in this document. They are included only to provide context and spatial reference. Minor system extensions (lateral pipelines and ancillary facilities) are proposed parts of the development of this new 16-inch pipeline.

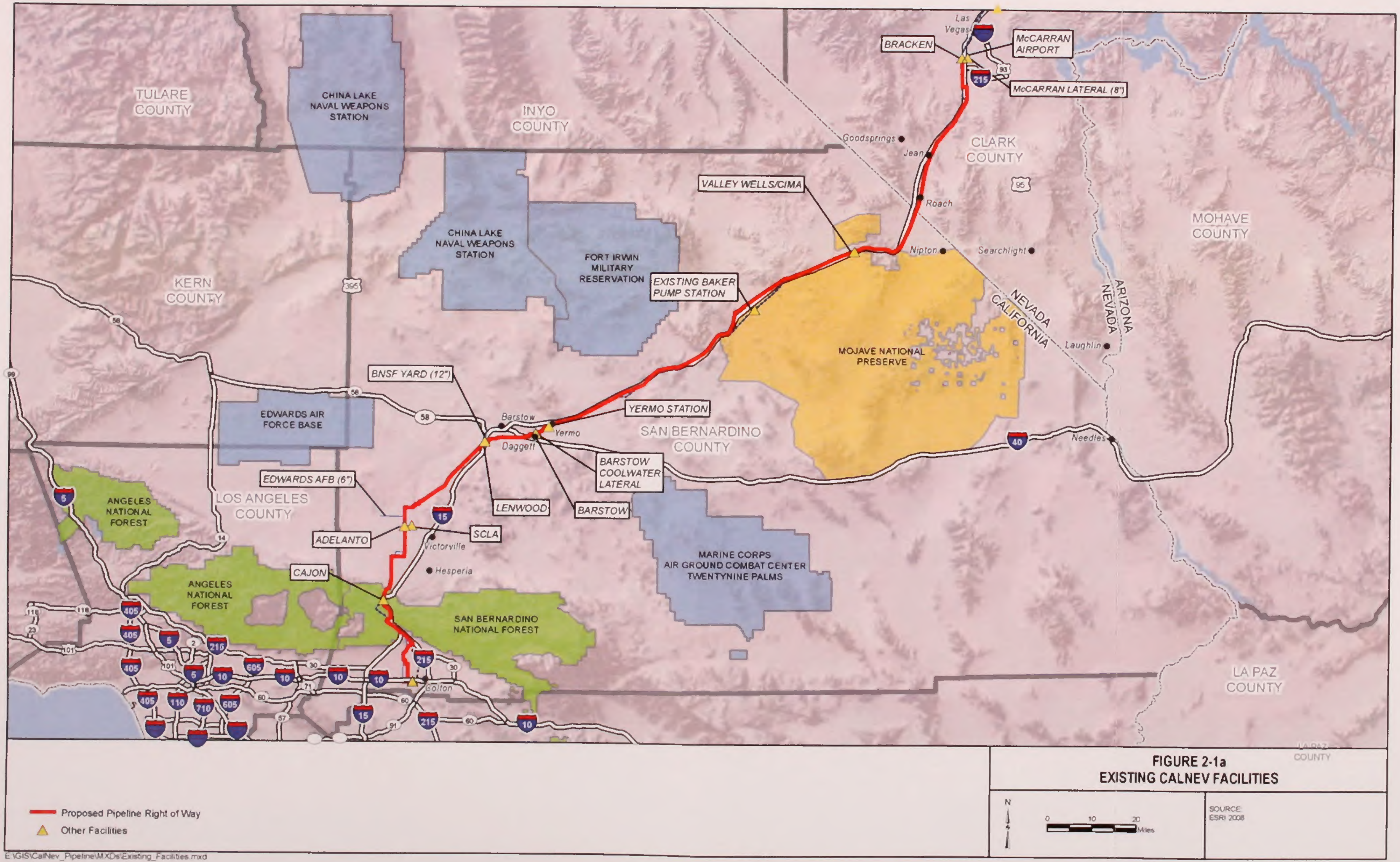


FIGURE 2-1a
EXISTING CALNEV FACILITIES

SOURCE:
ESRI 2008

E:\GIS\CalNev_Pipeline\MXDs\Existing_Facilities.mxd
June 29, 2011

Table 2-1 Existing Calnev System Components

Location	System Component	Milepost
California-Nevada	8-inch Pipeline	0.0-233.4
	14-inch Pipeline	0.0-233.4
California		
Colton	Terminal and Pump Station	0.0
Cajon	Pump Station	26.6
Adelanto	Junction	46.8
Southern California Logistics Airport (SCLA)	Terminal	47.0
SCLA	Lateral (6 inch)	47.0
Edwards Air Force Base	Lateral (6 inch)	47.0
Lenwood	Junction	75.7
Burlington Northern Santa Fe Rail Yard	Lateral (12 inch)	75.7
Barstow	Terminal and Pump Station	88.8
Barstow Coolwater	Lateral (12 inch)	88.8
Yermo Station	Junction	92.3
Baker	Pump Station	148.0
Valley Wells/Cima	Pump Station	174.5
Nevada		
McCarran Airport	Lateral (12 inch, one 6-inch section)	233.4
McCarran Airport	Terminal	233.4
Bracken	Junction	233.4
North Las Vegas	Terminal	Not applicable[1]

Source: URS Corporation 2009

1 – The milepost numbers are associated with the Proposed Project only. The existing pipelines extend approximately 15 miles past the end of the Proposed Project.

The Proposed Project (Alternative 1) and Alternatives 2 and 3 would involve:

- Construction, operation, and maintenance of approximately 233 miles of new 16-inch pipeline that would increase the existing Calnev system capacity from 156,000 to approximately 200,000 barrels of petroleum products per day from Colton, California into the Mojave Desert of California and destinations in the Las Vegas area;
- Construction, operation, and maintenance of a new pump station; a new 3-mile 12-inch lateral pipeline; new or modified connections to new or modified laterals, valves and ancillary modifications that support this new pipeline and facilitate minor system improvements; and
- Upgrades to other existing aboveground facilities to increase pumping capacity and reliability.

The existing pipelines primarily traverse otherwise undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the U.S. Forest Service (USFS) and the Department of Defense (DOD). The pipelines also cross lands owned by the State of California, San Bernardino County, and Clark County as well as incorporated communities: the cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada (Figure 2-1a).

2.2.1.1 New Pipeline and Laterals

The Proposed Project and other action alternatives would add a new 16-inch pipeline and support facilities within a standard 100-foot-wide construction right-of-way and a narrower permanent ROW for operation and maintenance activities, the width of which would depend on specific facilities in a particular location. All alternative pipeline alignments are fairly similar in length to the existing approximately 233 mile system running from the existing Colton Terminal and Pump Station in Colton, California, to the Bracken Junction facility near McCarran Airport in Las Vegas, Nevada, roughly following the Interstate 15 corridor. A new 12-inch diameter 3-mile lateral from the new 16-inch pipeline to McCarran International Airport would be installed adjacent to the existing McCarran Lateral.

The Proposed Project and action alternatives would also include new or modified connections to existing laterals between Colton and Bracken Junction, including the existing laterals to the Southern California Logistics Airport (SCLA), Edwards Air Force Base (AFB); the Burlington Northern Santa Fe Rail Yard, Barstow Coolwater; and McCarran International Airport.

Figures 2-2 to 2-20 show segment-by-segment locations of existing and Proposed Project facilities, including the pipeline alignments. Distances along the pipeline route are marked on these figures with milepost (MP) numbers indicating the distance along the route, starting at the Colton Terminal. These milepost numbers indicate throughout this EIS the locations of features and resources. The Applicant developed the milepost numbers early in the project development process, and the mileposts serve as benchmarks for the locations of their preliminary biological and cultural resource surveys and other studies. However, later in the process, the proposed route of the pipeline in the vicinity of Glen Helen Park near MP-17 changed, thus adding approximately one mile to the overall length of the pipeline. Renumbering the mileposts along the entire route after that change would have resulted in a mismatch between the milepost numbers being evaluated in the EIS and the milepost numbers contained within the Applicant surveys and resource reports. To avoid this mismatch, renumbering of milepost numbers in this EIS has been limited to the route of the pipeline in the modified area between MP-12 and MP-17. This renumbering has resulted in two points being numbered as “MP-17’, so the first of these has been identified as “MP-17a” on Figure 2-2. This double numbering of MP-17 on Figure 2-2 allows all other MP numbers on Figures 2-2 through 2-20 to match the MP numbers in the survey and resource reports.

2.2.1.2 Aboveground Facilities

Aboveground facilities and improvements included in the Proposed Project and action alternatives are:

- Upgrades to the existing Colton Terminal and Pump Station, including the existing Southern California Edison (SCE) Slover electrical substation and transmission line to increase pumping capacity at the terminal;
- Upgrades to the existing junctions at Adelanto, Lenwood, Yermo Station, and Bracken (Figures 2-4, 2-7, 2-8, and 2-20, respectively);
- Upgrades to the existing Cajon, Barstow, Baker, and Valley Wells/Cima pump stations (Figures 2-3, 2-8, 2-13, and 2-15, respectively) and the Barstow and McCarran International Airport terminals (Figures 2-8 and 2-20, respectively);
- Construction and operation of a new Silver Lake Pump Station near Baker, California (Figure 2-13); and

- Construction and operation of a new junction in Las Vegas (Figure 2-20).

Upgrades to Existing Facilities

Upgrades at the existing North Colton Terminal and Pump Station (Figure 2-2) would be necessary to connect the Proposed Project to the existing Calnev system. With the exception of a new powerline into the facility, these upgrades would occur within the existing fenced boundary of the facility and would include the installation of pumps, fittings, valves, and other necessary equipment to connect the new pipeline to the existing facilities, and the new facilities to the existing 14-inch mainline. SCE would provide upgrades, and interconnection to, the existing substation for the Colton Terminal and Pump Station as part of the Proposed Project.

System upgrades at other existing pump stations (Cajon, Barstow, Baker and Valley Wells/Cima Pump Stations, and Las Vegas) would include improvements to tank piping, pumps, piping, lateral interconnects, a "pig"[1] launcher/receiver, valves, pipeline markers, product meters, a meter prover, cathodic protection, and existing electrical instrumentation and controls. These upgrades would facilitate the increased pipeline size and flow rate as well as maintain adequate leak detection. All station upgrades would occur in the footprints of existing facilities and the adjacent temporary workspace associated with pipeline construction.

New Facilities

New aboveground facilities would include a new pump station and electrical substation, near Baker, California, and a new junction near the McCarran International Airport.

Silver Lake Pump Station

A new pump station, near Baker, California (Figure 2-13) would be required to move petroleum products through the expanded Calnev system. The station, which would be located on BLM land, would consist of the following:

- Three mainline pumps (3500 horsepower (HP) pump, 2750 HP pump, and 2000 HP pump), with associated valves and piping systems;
- An injection skid for Drag Reducing Agents[2];
- A station sump to collect associated liquids including lubricating oils;
- Pressure control valves to monitor and prevent station equipment damage from overpressure;
- A power building with 4160-volt starters, variable frequency drive, and 480-volt Motor Control Centers to meet station power requirements;
- Supervisory Control and Data Acquisition (SCADA) communication system to monitor pump station operations with computerized pipeline communications and system controls; and
- Station lighting, security fencing, and alarm systems.

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[1] A pig is a solid plug which is periodically passed through the pipeline to remove built-up solid material from inside the line.

[2] Drag Reducing Agents are added to the product at intervals to reduce frictional pressure on fluid flow in the pipeline.

The conceptual site plan for the Silver Lake Pump Station is shown in Figure 2-1b. The Proposed location for the Silver Lake Pump Station, shown in Figure 2-13, would be adjacent to the existing SCE switchyard.

New Junction near McCarran Airport

The Applicant would construct a new junction at the location of the current Bracken Junction at the intersection of Hacienda and Valley View Boulevard in Las Vegas (Figure 2-20). The new junction would include valves and pig launchers/receivers to monitor and clean the new and existing pipelines. It would also have a small structure, requiring power and communications, similar to the building at the existing Bracken Junction at Valley View and Hacienda Avenue, to house SCADA equipment.

The temporary and permanent disturbance areas associated with the specific upgraded and additional aboveground facilities for the project are shown in Table 2-2.

Table 2-2 Disturbance Associated with Proposed Facility Upgrades and New Facilities

Name	Milepost	Permanent (Acres)	Temporary (Acres)	Jurisdiction
Existing Facility Upgrades				
Colton Terminal and Pump Station	0.0	0	0	City of Colton
SCE Slover Substation	0.0	0	0	City of Colton
SCE Slover Transmission Line	0.0	1.5	0.5	City of Colton
Cajon Pump Station	26.6	0	0.5	San Bernardino National Forest
Adelanto Junction	46.8	0	0.5	Private Land/San Bernardino County
Lenwood Junction	75.7	0	0.5	Private Land/San Bernardino County
Barstow Terminal and Pump Station	88.8	0	0.5	Private Land/San Bernardino County
Yermo Station Junction	92.3	0	0.5	Private Land/San Bernardino County
Baker Pump Station	148.0	0	0	National Park Service Mojave National Preserve
Valley Wells/Cima Pump Station	174.5	0	0.5	BLM
Bracken Junction	233.4	0	0.5	City of Las Vegas/Clark County
McCarran Terminal	-	0	0.5	City of Las Vegas/Clark County
New Facilities				
Silver Lake Pump Station	146.3	3.0	0	BLM
TOTAL		4.5	4.5	

2.2.2 Route for Proposed Action

The general route for all three action alternatives is primarily located within or adjacent to Calnev's approved ROW grants for one of their two existing parallel pipelines. Of the 233 miles of new pipeline under the Proposed Action (Alternative 1), approximately 162.7 miles (70 percent) would be constructed in or adjacent to one of these existing Calnev ROW grants, and 53.8 miles (23 percent) would be adjacent to their ROW grants or other linear features (e.g., Interstate 15). The remaining 16.9 miles (7 percent) would be constructed along a new route that does not parallel the existing pipelines or other linear features. Although this 16.9-mile segment does not parallel the existing pipeline, it is within a utility corridor designated within the California Desert Conservation Area (CDCA) Plan. See Figures 2-2 to 2-20 for an overview of the Alternative 1 route.

Table 2.3 provides an overview of the location of new facilities under Alternative 1.

Figure 2-1b Silver Lake Pump Station Conceptual Site Plan

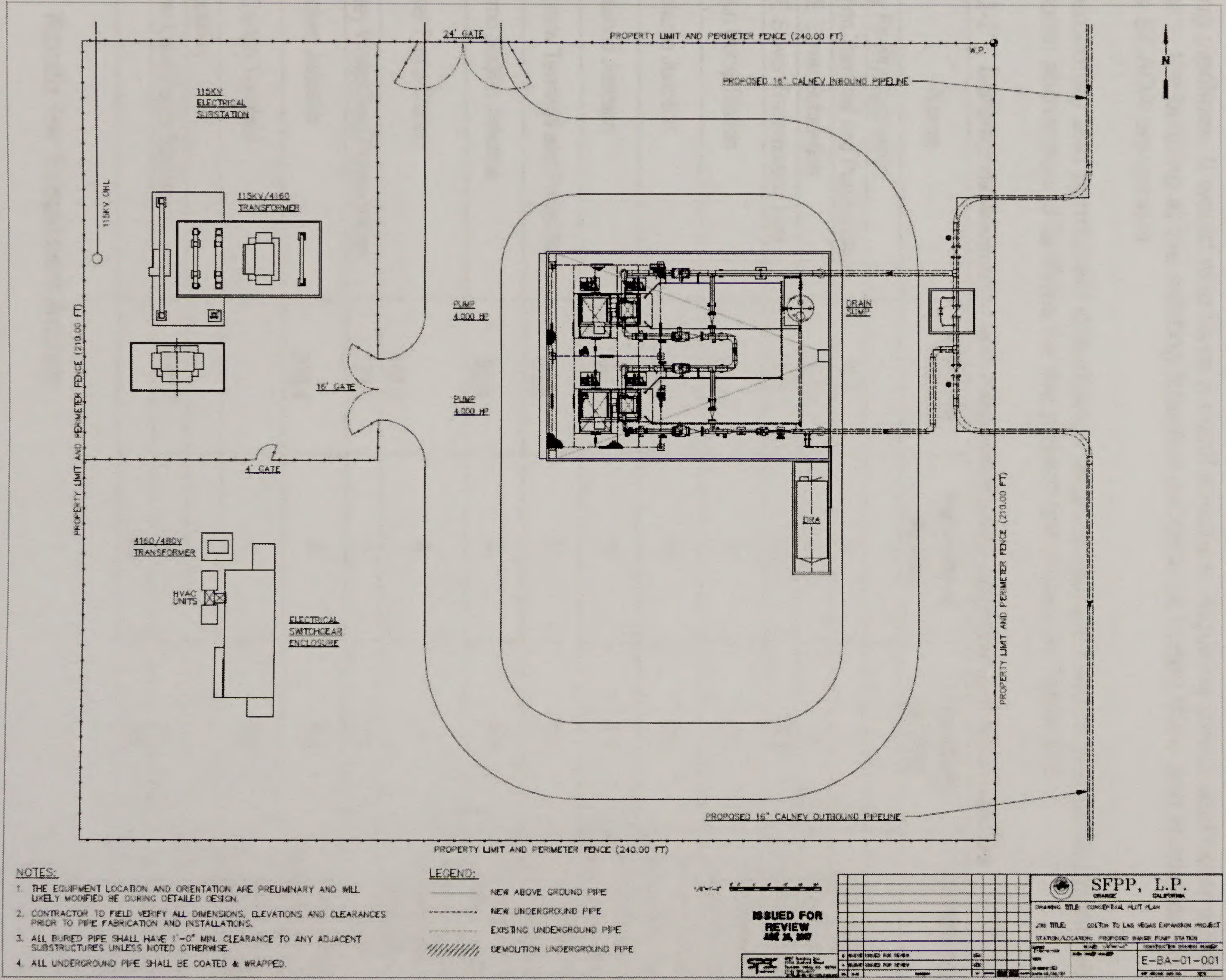

Table 2-3 Alternative 1: New Pipeline Description

Beginning MP	Ending MP	Location Name	Miles Adjacent to Existing Calnev System	Miles Not Adjacent to Existing Calnev System	Miles Adjacent to Road	Miles Adjacent to Powerline	Miles Adjacent to Railroad	Miles with no Parallel Linear Feature
0	2.1	Slover Ave	2.1		2.1			
2.1	3.0	Magnolia to corner of Cedar and West Valley		0.9	0.9			
3.0	9.0	Route through Rialto (West Valley – Cactus - Baseline – Ayala)		6.0	6.0			
9.0	10.3	Linden Ave	1.3		1.3			
10.3	12.2	Lytle Creek Crossing	1.9					
12.2	15.2	Glen Helen Park		3.0				3.0
15.2	16.2	Glen Helen Road		1.0	1.0			
16.2	16.7	Cross Cajon Wash		0.5				0.5
16.7	20.4	Cajon Blvd	3.7		3.7			
20.4	24.2	Cajon Blvd		3.8	3.8			
24.2	25.1	Cross Cajon Wash		0.9				0.9
25.1	25.3	Cajon Blvd		0.2	0.2			
25.3	25.6	Cross Country		0.3				0.3
25.6	26.5	USFS Fire Road		0.9	0.9			
26.5	28.5	Cajon Pump Station Area	2.0					
28:5	28.7	Baldy Mesa Peak-South		0.2				0.2
28.7	29.6	Baldy Mesa Peak-North	0.9					
29.6	53.5	Various Streets in Victorville/Adelanto area	23.9		23.9			
53.5	54.3	Mojave River Crossing and Uplands		0.8				0.8
54.3	54.7	Peso Court		0.4	0.3			0.1
54.7	75.6	Mojave River to Lenwood	20.9					
75.6	77	Various roads in Lenwood		1.4	1.1			0.3
77	77.3	Cross Country		0.3				0.3
77.3	90.4	Lenwood to Yermo	13.1					

Table 2-3 Alternative 1: New Pipeline Description

Beginning MP	Ending MP	Location Name	Miles Adjacent to Existing Calnev System	Miles Not Adjacent to Existing Calnev System	Miles Adjacent to Road	Miles Adjacent to Powerline	Miles Adjacent to Railroad	Miles with no Parallel Linear Feature
90.4	91.4	West Yermo	1.0				1.0	
91.4	93.3	Yermo Area	1.9		1.9		1.9	
93.3	96.5	Yermo Area	3.2				3.2	
96.5	116.5	Yermo and Cady Roads		20.0	20.0			
116.5	137.4	Dunn to Zzyzx Rd	20.9					
137.4	144.1	Cross Country West of Baker		6.7				6.7
144.1	144.7	Baker Area		0.6		0.6		
144.7	146.3	Nickle Mountain Road		1.6	1.6	1.6		
146.3	154	Baker Area		7.7		7.7		
154	157.8	Cross Country to Halloran Springs		3.8				3.8
157.8	198.4	Halloran Springs to Primm area	40.6					
198.4	203	Primm area to north of Jean	4.6				4.6	
203	205	Primm area to north of Jean	2.0					
205	209	Primm area to north of Jean	4.0				4.0	
209	210.5	Primm area to north of Jean	1.5					
210.5	211.4	Primm area to north of Jean	0.9				0.9	
211.4	217.1	Las Vegas Blvd		5.7	5.7			
217.1	222.9	Las Vegas Blvd	5.8		5.8			
222.9	226.9	Various Streets in Las Vegas		4.0	4.0			
226.9	233.4	Valley View to Hacienda Lateral to McCarran	6.5		6.5			
		Total Length Alternative 1 = 233.4	**162.7**	**70.7**	**90.7**	**9.9**	**15.6**	**16.9**

Note:

(1) The cross-country portion of the route begins at MP 10.3 and ends at MP 222.8.

(2) The number of miles adjacent to the existing Calnev system cross county (non-urban) is 106.2.

Table 2-4 provides a summary of the jurisdictions which will be affected by the Proposed Route.

Table 2-4 Proposed Action: Jurisdictions Along Proposed Route

Jurisdiction	Total Mileage	Total Acreage of Construction Disturbance
Bureau of Land Management	102.2	1,238.8
San Bernardino National Forest	8.6	104.2
Department of Defense	7.1	86.1
California State	1.2	14.5
Private/County/Municipal Ownership	115.3	1,397.6
Total	**234.4**	**2,841.2**

Although the general route is the same as that of the Proposed Action (Colton to Las Vegas, generally following the existing pipeline corridor), Alternatives 2 and 3 include route modifications at specific locations for reasons of constructability, reduction of impacts, and administrative feasibility. Alternatives 2 and 3 also include an alternative location for the proposed Silver Lake Pump Station, and a new junction to be constructed at the corner of Sunset and Valley View in Las Vegas. Sections 2.4 and 2.5 below discuss these modifications.

2.2.3 Construction Procedures and Materials Requirements

This section describes the procedures and materials proposed by Calnev for construction of the Proposed Project. The construction procedures and materials discussed in this section would apply to either the Proposed Project, Alternative 2, or Alternative 3.

2.2.3.1 General Pipeline Construction Procedures

This section discusses the general pre-construction and construction procedures that would be implemented throughout all stages of construction.

Permitting, Approval, and Agency/Landowner Consultation

ROW agents would coordinate with property owners and tenants to ensure minimum impact to current commercial, residential, and industrial land uses in the Proposed Project area. The Applicant would obtain authorized approval to construct and operate the Proposed Project by franchise agreements or permits from the agency with jurisdiction over the streets impacted by the Proposed Project.

After obtaining amended ROW grants and permits for the Proposed Project, the Applicant would notify landowners, permittees, and business owners along the ROW by mail or telephone in advance of construction activities that could affect current land uses. Tenants would then be notified in person a few days ahead of construction. Additionally, Calnev would post general notifications (e.g., signs at road crossings) at least one week in advance prior to construction.

All survey monuments located within the ROW would be flagged and protected during construction activities. Survey monuments include, but are not limited to, General Land Office cadastral survey corners, reference corners, witness points, U.S. Coastal and geodetic benchmarks and triangulation stations, military control monuments and recognizable civil survey monuments. In the event of damage or disturbance to any of the survey monuments listed above, the incident would be reported to the appropriate authority. Should General Land Office monuments or references be damaged during construction, the services of a registered land surveyor or a Cadastral surveyor would be employed to restore the monuments in accordance with established procedures, and the survey would be recorded with the appropriate county and other jurisdictional agencies. Provisions for identifying and protecting other resources (cultural, biological, and other resources) are discussed in the applicable sections in Chapter 3.

The Applicant would notify Underground Service Alert of construction activities that may disturb existing utilities, and Underground Service Alert would inform service providers to avoid service disruptions to utility customers.

Procedures to Maintain Access

In rural areas, fences crossing the ROW would be braced, cut, and temporarily fitted with gates to permit passage of construction crews. During construction, the opening would be controlled as necessary to prevent the escape of livestock. Existing fences would be replaced and braces kept in place upon completion of construction activities. During construction, no gates or cattle guards on established roads on public lands would be obstructed or damaged by construction activities.

Where the Proposed Project pipeline would cross cultivated land, access would be provided as required for property owners or tenants to move livestock and equipment across the Proposed Project area. Adequate precautions would be taken to ensure that livestock and wildlife would not be prevented from reaching water sources due to construction obstacles. Such precautions would include contacting livestock operators, providing adequate crossing facilities, or other measures as needed. Calnev would also ensure that livestock and wildlife could exit the trench if they become trapped by using location specific construction techniques, such as installing earthen ramps at the ends of the trench to facilitate the escape for entrapped animals.

In areas where roads would be affected, particularly urban areas, access for emergency response would be maintained during the construction period, and detours and alternate routes would be coordinated in advance of construction activity. Emergency response providers near the Proposed Project would be notified as to the exact construction locations, road closure schedules, and potential alternate routes.

Work would be coordinated with local police and traffic engineers to plan appropriate access alternatives for temporary street closures and traffic disruption. Schedules for necessary on-street parking closures would be published at least one week in advance of the street closure. Directly affected businesses and residents would be given ample notice and information to plan alternatives, and signage would be provided to direct motorists to alternate routes. Traffic control requirements from municipalities would also be followed.

Construction activity may interfere with pedestrian access or transit stops. In the event of disruption, transit providers would be contacted to develop temporary alternatives with appropriate signage and public notification. Temporary signs would be installed and alternate pedestrian access established. Existing pedestrian access to businesses near the Proposed Project would remain in place throughout the construction period to the greatest degree possible while the Applicant adheres to safe construction practices. In areas where access is temporarily disrupted, at least one week advance notice will be provided and efforts will be made to work with business operators to minimize disruptions (see Appendix H, Traffic Management).

For the location of access and maintenance roads and transportation routes in the Proposed Project area, refer to Section 2.2.3.4, Transportation of Construction Materials, and in Chapter 3, Section 3.16, Transportation and Traffic.

Stages of Construction

Standard pipeline construction procedures consist of specific activities that make up a linear construction sequence (Figure 2-1c). The operations include:

- Brush clearing and grading;
- Trenching;
- Pipe stringing, bending, and welding;
- Pipe coating;
- Lowering the pipeline into the trench and backfilling;
- Testing and inspection; and
- Post-construction site "brush" restoration of temporary ROW areas and implementation of dust and weed control measures in permanent ROW areas.

These procedures are described in the following sections. Cleanup and restoration procedures and special construction techniques used for road crossings, river crossings, and in other sensitive areas are described in Section 2.2.3.1. Staging areas, personnel, equipment, and the construction schedule are discussed in Sections 2.2.3.2 and 2.2.3.3.

Clearing and Grading

Pipeline construction typically requires a 100-foot-wide *nominal*[3] construction ROW. The width of the ROW clearings would be kept to the nominal 100 feet to avoid unnecessary disturbance to adjacent resources. Within this ROW, the surface would be graded to allow for safe and efficient operation of construction equipment and create sufficient space for temporary storage of spoil materials.

In rural areas, clearing and grading equipment would remove all brush and other materials from the ROW. The materials will remain on site for reclamation purposes. Soil and brush that are removed from the ROW would be placed in windrows to reduce wind erosion. Where required, topsoil removed during the clearing and grading operations would be segregated from subsoils. The Applicant would not mix different soil types and soils of single soil series would be stored separately from other soils. At a minimum, the first 6-inches of surface soil would typically be separated and windrowed for subsequent restoration activities on the ROW. However, the actual depth would depend on the soil type as determined by NRCS soil surveys and by a consulting soil scientist in areas that do not have NRCS soil surveys. To avoid disturbance to root systems and promote revegetation along the ROW, brush removal would be limited to trimming and/or crushing and confined to areas specified by the jurisdictional agency. In general, the areas specified would be limited to the trench, bore pit, or sidehill cut areas. Where tree clearing is necessary, the ROW boundaries would be flagged and any specimen trees on the perimeter would be preserved from damage. However, blading of vegetation may be necessary where the ROW has to be normalized where it traverses sideslopes in order to safely string and weld the pipe.

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[3] The term *nominal* refers to the 100-foot construction ROW without additional workspaces or staging areas. The ROW grant issued by the BLM would include these extra workspaces and staging areas, making it larger than 100 feet in some areas.

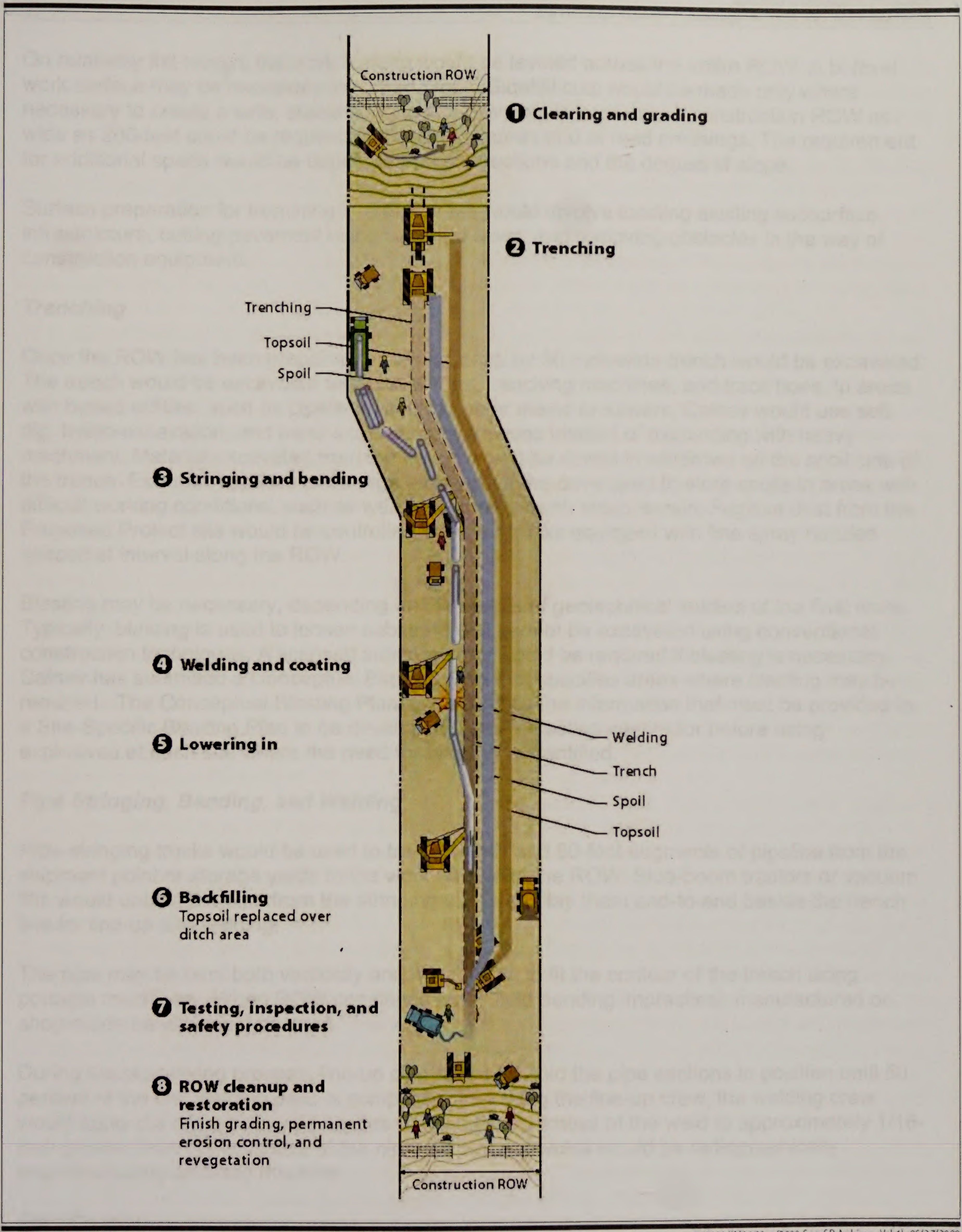

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Figure 2-1c

Typical Pipeline Construction Sequence

On relatively flat terrain, the work surface would be leveled across the entire ROW. A bi-level work surface may be necessary in sloped areas. Sidehill cuts would be made only where necessary to create a safe, stable surface for heavy equipment use. A construction ROW as wide as 200-feet could be required in sidehill cut areas and at road crossings. The requirement for additional space would be dependent on obstructions and the degree of slope.

Surface preparation for trenching in urban areas would involve locating existing subsurface infrastructure, cutting pavement using concrete saws, and removing obstacles in the way of construction equipment.

Trenching

Once the ROW has been prepared, a six-foot-deep by 30-inch-wide trench would be excavated. The trench would be excavated using backhoes, trenching machines, and track hoes. In areas with buried utilities, such as pipelines, cables, water mains or sewers, Calnev would use soft dig, hydro-excavation, and hand excavation techniques instead of excavating with heavy machinery. Material excavated from the trench would be stored in windrows on the spoil side of the trench. Extra workspaces or storage areas would be developed to store spoils in areas with difficult working conditions, such as wetlands or areas with steep terrain. Fugitive dust from the Proposed Project site would be controlled by water trucks equipped with fine spray nozzles spaced at interval along the ROW.

Blasting may be necessary, depending on the results of geotechnical studies of the final route. Typically, blasting is used to loosen substrate that cannot be excavated using conventional construction techniques. A licensed subcontractor would be required if blasting is necessary. Calnev has submitted a Conceptual Blasting Plan that specifies areas where blasting may be required. The Conceptual Blasting Plan also specifies the information that must be provided in a Site-Specific Blasting Plan to be developed by their blasting contractor before using explosives at each site where the need for blasting is identified.

Pipe Stringing, Bending, and Welding

Pipe-stringing trucks would be used to transport 40- and 80-foot segments of pipeline from the shipment point or storage yards to the working side of the ROW. Side-boom tractors or vacuum lifts would unload the pipe from the stringing trucks and lay them end-to-end beside the trench line for line-up and welding.

The pipe may be bent both vertically and horizontally to fit the contour of the trench using portable machinery. When ROW conditions make field bending impractical, manufactured or shop-made bends would be used.

During the pipe-laying process, line-up clamps would hold the pipe sections in position until 50 percent of the first welding pass is completed. Following the line-up crew, the welding crew would apply the remaining weld passes to bring the thickness of the weld to approximately 1/16-inch greater than the thickness of the pipe. All pipeline welds would be radiographically inspected using an X-ray machine.

Pipe Coating

To protect the pipeline from corrosion, state-of-the-industry pipe coating would be applied at a qualified facility before pipe delivery to the construction site. Where welds are made to join pipe sections, field-applied fusion-bonded epoxy coating would be used to provide a continuous coating along the pipeline. Fusion-bonded epoxy would be applied after the pipe has been welded and radiographically inspected. Heat-shrink polyethylene sleeves, Polyken tape and tape primer, or another appropriate coating material would cover the welds.

Lowering and Backfilling

The pipe would be lifted and lowered into the trench by two or more side-boom tractors spaced so that the weight of unsupported pipe would not cause mechanical damage. Cradles with rubber rollers or padded slings would be used so the tractors could lower the pipe without damage as they travel along the trench.

Backfill material equivalent to the soil at the trench site would be obtained from the nearby excavated trench spoils. Unusable spoils material or contaminated soils would be handled according to applicable regulations, as discussed in Section 3.5. During backfilling, spoils would be screened using standard construction screening equipment. Spoil that is free of rocks would be separated out to be used to create a padding and shading zone around the pipeline. The padding would protect the pipeline from abrasion and other damage that could compromise the coating. The pipe would be covered along the sides with a maximum of 6 inches of native, fill-free rocks and then covered with a minimum of 12 inches of additional fill. Any padding material not obtained from trenching spoils would be purchased from local commercial sources. The backfill in the remainder of the trench above the padding would be native material excavated during trenching.

In urban areas and other locations with unrestricted pedestrian access where safety concerns are present, trenches would be fenced, backfilled, or steel plates would be used to cover any open trench left at the end of each workday. In urban work areas, the backfilled earth would be compacted using a roller or hydraulic tamper before paving. In rural areas, the trench would be backfilled with the excavated trench spoils and the original contour of the land would be restored using dozers and backhoes.

Testing, Inspection, and Safety Procedures

All field welding would be performed by qualified welders in accordance with American Petroleum Institute 1104 (Standard for Welding Pipe Lines and Related Facilities) as well as the rules and regulations of the Department of Transportation (DOT) found in the Code of Federal Regulations (CFR) Title 49 (Part 195 for liquid pipelines). CFR Title 49, Part 195 requires that 10 percent of welds be radiographically inspected; Calnev would exceed this requirement by inspecting 100 percent of welds on the pipeline portion of the Proposed Project. Radiographs would be recorded and interpreted for acceptability according to requirements of American Petroleum Institute 1104. All rejected welds would be repaired or replaced as necessary and again radiographed. The x-ray reports as well as a record indicating the location of welds would be kept for the life of the pipeline. As a safety precaution, a minimum of one 20-pound dry chemical unit fire extinguisher would accompany each welding truck on the job.

A detection test would be conducted to locate any coating discontinuities that could permit moisture to reach the pipe. A "Holiday"[4] detector would test for these discontinuities by developing an electrical potential between the pipe and an electrode on the coating exterior or ground. All coated pipe, including field joints, fittings, and bends, would be tested and repaired as necessary before backfilling.

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[4] An industry term that refers to an "inadequately coated area or segments of a pipeline."

In addition to standard mill testing of all pipe and fittings, hydrostatic testing would be performed after construction and before startup as mandated by Federal regulations (49 CFR Part 195) for all new petroleum pipelines. A hydrostatic test involves filling a test section of the pipeline with fresh water and increasing pressure to a predetermined level. This pressure level would be at least 1.25 times the pipeline maximum operating pressure or up to 90 percent of the specified minimum yield strength of the pipe. This test is designed to prove that the pipe, fittings, and weld sections would maintain mechanical integrity without failure or leakage under pressure.

As with x-ray reports of welding locations, permanent records would be kept of each eight-hour hydrostatic test. The records would contain the exact location of the test segment, the elevation profile, a description of the facility, and continuous pressure and temperature of the line throughout the test. Deadweight testers would be used to verify the accuracy of pressure-recording devices and charts during the test, as required by 49 CFR Part 195.

Calnev would further ensure public safety by marking the line. At the time of backfilling, a colored warning tape (6 inches in width) would be buried from approximately 18 inches above the pipeline and extending to the ground surface to indicate the presence of a buried pipeline to third-party excavators.

Cleanup and Restoration

The Applicant would restore the ROW to its pre-construction condition in accordance with their Restoration Plan. Uncontaminated trench spoils not used as backfill would be spread on the ROW and used for contouring during restoration. All debris would be removed from construction sites during the cleanup process, including spoils not used as either backfill or to restore the ROW to original contours, debris from street cuts, construction signs, surplus materials and equipment. Materials unsuitable for backfill use and economically infeasible for other purposes would be disposed of in accordance with local, county, and state guidelines in landfills. Segregated top soil would be restored on the ROW. Brush removed during ROW preparation would be spread across the ROW.

Contaminated soil may be excavated during construction, especially in older industrial areas with shallow groundwater. Contaminated spoils that cannot be returned as backfill would be disposed of or treated at an appropriate permitted facility. A detailed discussion of potentially contaminated areas associated with the Proposed pipeline route is presented in Section 3.5.

Trash/recyclables would be placed in bags or receptacles and transported by the construction contractor to an appropriate landfill or recycling center. Hazardous waste would be placed in drums or roll-offs designed for transporting hazardous waste and transported under manifest and chain of custody by a licensed hazardous waste hauler to a permitted hazardous waste treatment or disposal facility.

All restoration and re-vegetation would be completed to the satisfaction of the landowner or jurisdictional agency. In rural construction areas, steps would be taken to minimize erosion, account for trench settling, reestablish plant growth, and restore the natural ground contour and natural surface drainage. After construction activities, the Applicant would reseed the ROW using a seed mix or plant species approved by the landowner or jurisdictional agency and following recommendations by the U.S. Natural Resources Conservation Service (NRCS). Seedbed preparation and seeding operations would follow accepted techniques for the particular area and task. On cultivated or improved lands, the ground surface would be restored to a condition that is satisfactory to the landowner.

In areas where restoration may be difficult, restoration and re-vegetation may be considered a special management project, requiring coordination with respective authorities. In this instance, advice would be sought from other agencies, including the University of California (agricultural problems) and/or the NRCS, to fully determine appropriate mitigation and reclamation measures. Sensitive stream and river crossings may require site-specific re-vegetation/reclamation plans. Restoration measures for these areas are further detailed in the Restoration Plan.

In urban work areas, Calnev would use roller or hydraulic tamper to compact soil prior to paving. Disturbed areas including roads would be repaved and restored to preconstruction conditions.

Landowners, tenants or applicable agencies would be contacted and asked to review the final clean-up on their property. Owners would be compensated for all damages to crops, should damage occur outside of compensation agreements that were previously negotiated. ROW agents would accompany contractor's agents during all negotiations for off-ROW damages.

Special Construction Techniques

In addition to standard pipeline construction methods, Calnev would use special construction techniques where warranted by site-specific conditions. Examples of locations that require special construction techniques include crossing water bodies, highways, railroads and other utilities, or when blasting through rock. Areas that require special construction techniques typically require a construction ROW of greater than 100 feet. Special locations include, but are not limited to the crossing of Cajon Wash, Lytle Creek, and the Mojave River. Areas that may require special construction techniques are described in general below. Specific construction techniques proposed by Calnev are contained in the Plan of Development.

Construction in Wet Soil Conditions

Construction of the Proposed Project in wet soil conditions can interfere with the proper operation of equipment. The Applicant does not anticipate construction in wet soil conditions; however if unusually wet soil conditions are encountered in localized areas, timber mats would be used as a base for equipment operation to prevent the equipment from sinking into the wet soil. These mats are generally made of 12-inch by 12-inch by 20-foot lumber lashed together. If timber mats are not used in wet soil conditions, Calnev could use a geosynthetic-type fabric covered with dry soil or gravel to create a roadway or base for the construction equipment. Excavation in wet soil conditions is generally performed with an excavator-type backhoe.

Onsite Welding

On-site welding in the trench could be required whenever the trench line is obstructed by other utilities crossings. These welds would usually be made in the trench after the pipeline has been lowered into place. In addition to standard welding and weld inspection procedures, each weld would require pipe handling for line-up, cutting to exact length, coating, and backfilling, in addition to standard welding and weld inspection procedures.

Water-Crossing Techniques

Open Cut

The open cut technique for stream crossings and other small drainages would require a trench to be excavated from bank-to-bank, perpendicular to flow in the drainage. This would require equipment such as excavators, and backhoes, and bulldozers to excavate the trench. The entire length of the pipeline necessary for water crossings would pre-welded with joints coated and counterweighted, if necessary, prior to lowering so dewatering techniques would not be necessary. The submerged pipe would then be backfilled with spoils. The creek or drainage would be re-vegetated and returned to its original configuration, with substrate replaced and banks stabilized.

Conventional Boring

Conventional boring would be conducted at some canal and flood control channel crossings. A bore pit would be excavated on each side of the waterway. These pits, approximately 25- to 30-feet long by 10 to 15-feet wide, would be excavated with a backhoe outside the natural channel. The depth of the pits would depend on final pipeline depth. Spoils from the excavation would be placed alongside the pits outside of the channel. Spoils would be used as backfill and wet spoils would be placed in detention basins if uncontaminated and otherwise suitable. A crane would be used to lower the boring machine, casing, and pipe lengths into the pit. Casing and pipe sections would be inspected and the pipe would be coated in the pit before boring. Pipe section lengths would be limited by the length of the bore pit. The bore would be drilled below the scour depth of the stream channel with an adequate margin of safety to ensure the pipe is not exposed to stream bed scour. Any groundwater encountered during drilling would either be diverted to an adjacent temporary sedimentation pond or discharged into the stream in accordance with all regulatory agency requirements (i.e., California Regional Water Quality Control Board and Nevada Division of Environmental Protection). The specific procedure employed would be determined during final design. Upon completion of the pipeline installation, the excavated areas would be backfilled, compacted, re-contoured and restored as near as possible to their original conditions.

Horizontal Directional Drilling

Horizontal directional drilling (HDD) is a highly specialized boring technique, which would be used to drill an arc under streams or rivers. Lubrication containing water and bentonite clay, referred to as drilling mud, would be used to aid the drilling and to coat the walls to maintain the opening. A wire line magnetic guidance system would be used to ensure the angle, depth, and exit points abide by the detailed engineering plans. Once the hole is approximately twelve inches larger than the pipe, the pipeline is pulled through the underground arc from the point of entry to the point of exit. The HDD locations for the Proposed Project are listed on Table 2-5 and shown in Figures 2-2 to 2-20.

Table 2-5 Horizontal Directional Drilling (HDD) Locations

HDD Location Number	MP	Name of Feature Drilled	Approx. Length (feet)
2	2.4	Railroad & Interstate (I)-10	1700
3	9.0	State Route (SR)-210	1800
8	18.3	Wash	1000
9	22.9	Wash	1000
11	25.5	I-15	1500
12	36.2	California Aqueduct	1000
13	53.9	Mojave River	1500
14	76.0	I-15	500
15	85.8	I-40	600
16	86.8	National Trails, RR & Mojave River	1200
17	117.8	I-15 & Service Rd	500
19	223.3	SR-146	600
20	226.4	I-15	1000
22	231.5	I-215	1000
26	24	Cajon Riparian	2300
Other HDD Locations Considered			
4	9	SR-210 (Locust)	1800
5	LA1	SR-210 (Laurel)	1800
6	RI 4	SR-210 (Rialto 2)	1800
10	24.1	Railroad & I-15 (Wagon Train)	1800
18	NI 3	I-15 (Nipton)	500
24	232	I-15 (Sunset)	2000
25	233	I-15 (Russell)	2000

Highways, Railroad, and Pipeline Crossings

In some cases, Calnev would use a conventional bore or HDD technique as described above to cross underneath interstate highways, freeways, railroads, and other pipelines or utilities. Placement of the pipeline bore with respect to other utilities would be in accordance with regulations that mandate a minimum buffer of 12 inches from any underground structure (49 CFR 195.250).

2.2.3.2 Staging and Storage Areas

Calnev's equipment, supply, and labor contractors would store construction materials on their existing storage sites; however, additional staging areas would be required. These may include available warehouses, parking areas, agricultural areas, or developed areas near the Proposed Project area.

The majority of temporary storage areas would be used to store pipe. Before the transportation and lay down stages of construction, pipe would be stored at a vendor's coating yard, the existing stations or existing storage yards. Aggregate, asphalt, sand, and slurry materials would be purchased locally, and storage would be provided by local suppliers. Construction equipment stored at contractor staging areas would be refueled and maintained on site in accordance with

Calnev's Spill Prevention, Control, and Countermeasures plan. In accordance with the plan, refueling and lubrication of equipment would not occur within 100 feet of riparian habitat. Equipment would be regularly checked for leakage.

Additional storage areas would likely be needed between Barstow, California and Las Vegas. These areas would be identified following the preliminary review of the route by the major landowners, agencies, and jurisdictions.

Pipeline Storage and Contractor Yards

To support construction activities, Calnev would use five staging areas on a temporary basis affecting about 70.6 acres of land. Additionally, the Calnev Colton and Las Vegas terminals may also be used for storage and/or staging. The size and locations of the storage areas are listed in Table 2-6 and shown in Figures 2-2 to 2-20.

Table 2-6 Temporary Storage Areas Associated with the Proposed Project

Milepost	Staging Area Name	Previously Disturbed	Size Acres (2)
MP 77	Lenwood	Yes	11.16
MP 92	Yermo OL1	Yes	16.70
MP 92	Yermo 1A	Yes	24.25
MP 92	Yermo 1B	Yes	11.95
MP 197	Primm	Yes	6.61
	TOTAL		70.67

Source: URS Corporation 2008b

Construction Spreads, Personnel, and Equipment

Construction of the Proposed Project currently anticipates the use of the following construction *spreads*.[5] All of the spreads could be working simultaneously at different locations along the route.

- One or two mainline spreads
- Two or three street-work spreads
- Two special-crossing spreads (primarily cased boreholes)
- Three HDD spreads
- One or two station crews

Approximately 550 to 650 personnel would be employed on the Proposed Project during the peak construction period (Table 2-7). Of this total, approximately 60 percent of the workforce would be skilled and 40 percent unskilled labor. The mainline and street work construction spreads would be composed of several units. The units would be organized to proceed with the work in the following general order: pre-construction activity; trenching; hauling and stringing the pipe; pipe bending; line-up and welding; weld inspection; applying protective coating to the weld joints; lowering and tying in; hydrostatic testing; backfilling; and ROW cleanup and street resurfacing. Special construction crews would be used for fence building, block valve installation, and for construction at each station.

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[5] The term *spread* refers to the crew and equipment required for construction of the proposed Project.

Table 2-7 Construction Spreads and Personnel.

Spread Type (Number of Crews)	Description of Work	Personnel	Timing	Percent of Route
Mainline spread (1 or 2)	Cross country	310 people	8 months (full duration of construction)	83%
Street work spread (2 or 3)	Roadway	75 people	8 months (full duration of construction)	12%
Hammer bore crew (1)	Water, railroad and highway crossings	10 people	7 months (Intermittently during last 7 months of construction)	1%
Auger bore crew (1)	Water, railroad, and highway crossings	15 people	7 months (Intermittently during last 7 months of construction)	1%
Horizontal directional drilling crew (3)	Major water crossings	14 people	7 months (Intermittently during last 7 months of construction)	3%
Station work crew (2)	Station upgrades	20 people	4 months	N/A

Source: URS Corporation 2008a

Construction equipment for the Proposed Project includes various size trucks, vans, tractors, trailers, dozers, trenching machines, boring machines, cranes, generators, and bending machines. Construction equipment would be the same for the Proposed Project, Alternative 2, and Alternative 3.

2.2.3.3 Construction Schedule

Calnev has indicated that construction of the Proposed Project would take approximately 12 to 18 months to complete. Construction schedules may be affected by impacts to resources; these scheduling issues will be addressed in subsequent chapters by resource area. Construction is expected to begin in 2012.

2.2.3.4 Transportation of Construction Materials

Road Improvements

Calnev would use any existing paved or dirt roads and the improved access roads listed in Table 2-8 to gain access to the pipeline ROW during construction of the Proposed Project. The roads shown in Table 2-9 would be used for maintenance. Modifications, including grading or widening would be required to use some of these existing roads. Calnev would also use the 100-foot nominal construction ROW for access to remote areas.

Only one new maintenance road, the Afton Access Road, is planned as part of the Proposed Project. The road would be located near MP 118 in the area north of Dunn, California. It would be approximately 1,000-feet long and 10-feet wide. No additional roads are planned for the Proposed Project, but a 10-foot-wide portion of the permanent 50-foot ROW may be used as a maintenance road in some areas.

Table 2-8 Access Roads Requiring Construction or Modification

Milepost	Name	Road Type	Length (Feet)	Length (Miles)	Public
26.6	Cajon Station area	Dirt	740	0.1	Assumed public
26.8	I-15 Locked area	Dirt	850	0.2	Assumed public
54	Mojave River (if HDD)*	Dirt	810	0.2	Assumed public
58	Bryman Rd	Dirt	10,990	2.1	Public (SB Co.)
61	Cardigan Rd	Dirt	22,180	4.2	Private
64	Wild Wash Rd-North	Dirt	11,620	2.2	Public (SB Co.)

Table 2-8 Access Roads Requiring Construction or Modification

Milepost	Name	Road Type	Length (Feet)	Length (Miles)	Public
68	Stoddard Mountain Rd	Dirt	6,860	1.3	Public (SB Co.)
72	Outlet Mall Rd	Dirt	8,450	1.6	Public (City of Barstow)
76	Lenwood Rd	Dirt	4,220	0.8	Public (City of Barstow)
129	Basin Rd	Dirt	3,170	0.6	Public, Private and BLM
138	Zzyzx Extension	Dirt	1,360	0.3	Assumed public
142.5	Berm at 142*	Dirt	8,990	1.7	BLM
168	Dirt Road at MP 168.2	Dirt	530	0.1	BLM
185.5	Nipton Road	Dirt	1,970	0.4	Assumed public
191	Yates Well Rd	Dirt	4,220	0.8	Public, Private and BLM
198	Dirt Road at Primm	Dirt	7,920	1.5	BLM
209	Dirt Road at MP 209.4	Dirt	1,060	0.2	BLM

Source: URS Corporation 2009

Notes:

1. Access Roads identified above will require improvement.
2. All Access Roads identified above to be widened to 40 feet' except those indicated with an * will be widened to 25 feet.
3. Refer to associated GIS layer for additional information.

Table 2-9 Maintenance Roads

Location	Milepost (a)	Comment
Colton/Rialto	0-25	Any public road that parallels or intersects the routes
Existing 8" & 14" ROW	Swarthout Canyon Area	Existing public road including Keenbrook Road, Purcell Road, Swarthout Canyon Road, Lone Pine Canyon Road, Hwy 138 and Baldy Mesa Road. Three existing connector spur roads will continue to be used to access the ROW from Swarthout Canyon Road
Cajon Pass	25 to 27.5	Existing USFS fire/off-highway vehicle (OHV) access road
Cajon Summit	27.5 to 30	Baldy Mesa Road and Power Line Maintenance Road
Adelanto/Victorville	30 to 54	Any public road
La Delta	54 to 56	Any public road
Victorville to Lenwood	56 to 75	Bryman Rd (MP 57.9) – to be improved for construction
		Cardigan Road (MP 60.7) – to be improved for construction
		Wild Wash Road South (MP 62.1)
		Wild Wash Road North (MP 63.9) – to be improved for construction
		Hodge/Stoddard Mtn Rd (MP 67.6) – to be improved for construction
		Sidewinder/Outlet Center Rd (MP 72.3) – to be improved for construction
		Lenwood Truck Stop spur (MP 75.6)
Lenwood	76 to 80	Lenwood/Osborne Road
Barstow	80 to 83	Barstow Rd
Nebo	83 to 86.6	Nebo St and National Trails Hwy
Daggett	86.6 to 90.1	Daggett/Yermo Rd
Yermo	90.2 to 96.5	2nd St (MP 93.4)
		Minneola Rd (MP 96.2)

Table 2-9 Maintenance Roads

Location	Milepost (a)	Comment
Yermo to Field Rd & I-15	96.5 to 111.4	Yermo Rd
Dunn	111.4 to 117.8	Field Rd (Existing ROW; MP 112)
		Cady Rd (MP 116.6)
		County Rd 20866 (MP 117.9)
		Dunn Rd (Existing ROW; MP 116.9)
Afton Canyon Rd to Basin Rd	117.8 to 128.5	Afton Road Access (MP 118) – new access road
		Afton Cyn Rd spur (119.65)
		Arrowhead Trail (MPs 118.4, 121.6, 124.3)
		Cronese Lake Rd (127.75)
		Basin Rd (MP 128.6)
Basin Road to Rasor Rd	128.5 to 132	Arrowhead Trail (MP 130.7 and 131.7)
Rasor Rd to Zzyzx Rd	132 to 139	Rasor Rd (MP 133)
		Arrowhead Trail (MP 137.8)
		Zzyzx (MP 138.2)
Zzyzx to Baker	139 to 146	Mill Rd (MP 144.6)
		Hwy 127 (MP 145.6)
Existing 8" & 14" ROW	Mojave Preserve	Kelbaker Rd, Unnamed dirt road from south end of Halloran Springs Rd
Baker to Halloran Springs	146 to 158	Arnold Ave (MP 146.3)
		Halloran Springs Road (MP 158.3)
Halloran Springs to Halloran Summit	158 to 164	Halloran Summit Rd (MP 164.2)
Halloran Summit to Kingston/Cima	164 to 171	County Rd 20909 spurs (MP 168.3, 169.8 and 169.9)
		Cima Rd (MP 171.1)
Cima Rd to Mountain Pass	171 to 180	County Rd 20909 spurs (MP 173.3, 174.5, 175.3, 176.1, 177.4)
		Clark Mtn Rd (MP 179.1), Bailey Rd (MP 180.1)
Mountain Pass to Nipton Rd	180 to 186	Dirt road off Nipton Rd (MP 183.4, 183.6, 184.6)
		Nipton Rd (MP 185.7)
Nipton Road to Primm	186 to 196	Yates Well Rd (MPs 189.7, 191)
		Primm Blvd (MP 196.5)
Primm to Jean	196 to 208	Power line access road (MP 197.8)
		Prison Road (MP 207.9)
Jean to Sloan Rd	208 to 220	Unnamed dirt road (MP 209.4)
		Las Vegas Blvd (MP 211.4)
		Unnamed dirt road (MP 216.7)
North of Sloan Rd	220 to 226	In or adjacent to public roads. Any public road that intersects ROW route.

Notes:

(a) MP is at intersection between existing roads and the ROW.

(1) Existing roads to be used for maintenance do not need to be modified unless otherwise noted.

(2) On the existing and new ROW, a 10-foot-wide area on the permanent ROW may be used as a maintenance road. Additionally, a turn-around up to the 50-foot width of the ROW may be used if the turn-around would reduce the overall area of disturbance on the ROW.

(3) The project will use public road without improvements (including paved and unpaved roads) for access during both construction and maintenance.

(4) Refer to associated geographic information system (GIS) layer for additional information.

All vehicles used for construction and for construction equipment transport would be fitted with appropriate mufflers, and engine maintenance would be performed regularly. Welding machines would use diesel or unleaded fuel. All construction material and machinery transportation would use existing roadways.

Materials that would be transported to the site by truck would include the following:

- Pipe and lay down materials: 40 and 80-foot coated pipe sections, pipe fittings, valve assemblies, valve vaults, and shoring piles.
- Welding materials: coating supplies (for welded joints) and equipment for onsite welding locations.
- Backfill materials: cement, aggregate, gravel, sand, and slurry (from local plants) for backfill at street crossings.
- Restoration materials: asphalt for re-paving; signs and fencing.
- Other Construction Materials: fuel and lubrication for equipment, drinking water, and water for dust control. Water may be available from fire hydrants or permitted water sources in the Proposed Project area for hydrotesting and dust control.

The quantity of materials needed would depend on the type of construction activity and the site location.

Most of the heavy construction equipment would be delivered from storage yards to construction sites on lowboy trucks or trailers. Mobile cranes and dump trucks would be driven in from local contractors' yards. Construction equipment would be left overnight onsite when feasible or, where overnight onsite storage is infeasible, at the contractor yards or at other storage yards in the area. All equipment would be lubricated, refueled, repaired, and maintained by the contractor or local servicing companies.

Waste Management

Typical waste generation from pipeline construction includes short remnant sections of pipe, wastes generated by X-ray machines, welding and coating byproducts, and boxes and crates used to ship materials. Any waste materials produced during construction would be hauled to local refuse centers for recycling or disposal. Trash containers would be provided onsite for refuse generated by construction crews. The trash would be sorted according to material (i.e., plastic, paper, wood, and aluminum). Other construction wastes would include contaminated spoils; rubble from trenching paved areas; and water used to hydrostatically test the pipeline. The non-hazardous wastes would be hauled to a sanitary landfill; the used hydrostatic test water would be treated as required and discharged under permit; and hazardous wastes would be sent to a permitted treatment or disposal facility. Construction crews would use portable chemical toilets serviced by a licensed septic waste handler.

Utility, Service, and Energy Requirements

Fuel

Construction equipment would require both gasoline and diesel fuel. Estimated consumption per spread per day is 500 gallons of gasoline and 2,000 gallons of diesel fuel.

Water

Construction of the Proposed Project would require the use of water for fugitive dust control, street washing, and hydrostatic testing.

Water for use in daily construction activities and for hydrostatic testing of the pipeline would be supplied from five sources, as follows:

- West Valley Water District, Rialto, California;
- Mojave Water Agency, Apple Valley, California;
- Baker Community Services, Baker, California;
- Molycorp Minerals, Mountain Pass, California; and
- Las Vegas Valley Water District, Las Vegas, Nevada

The water source, capacity, and estimated water use from each source are provided in Table 3.5-7. The water volume required for dust control during construction is estimated to be a maximum of 0.8 acre-feet (ac-ft) per day in areas where dust control across the entire 100-foot wide right-of-way is required. Water requirements for construction along existing roads would be much less, at 0.16 ac-ft per day, and water use for construction in urban areas would be 0.001 ac-ft per day. Total water use for dust control during construction would be 141 ac-ft (URS Corporation 2011a). Water would also be used for hydrostatic testing of the pipeline. The maximum volume that would be used for hydrostatic testing would be 12.27 ac-ft (URS Corporation 2011a).

Because the hydrostatic test process would be conducted from the Colton end of the pipeline, the water for hydrostatic testing would be obtained from the West Valley Water District. Water for fugitive dust control and street washing would be obtained, to the extent possible, from the closest of the five suppliers, in order to reduce water transportation costs. If water from any of the systems should become unavailable, water would be trucked from either the Mojave Water Agency or the Las Vegas Valley Water District.

Water used for fugitive dust control would be applied directly to the ground. Discharge water from hydrostatic testing would be sold for beneficial use (if a buyer can be found), discharged to Ivanpah Dry Lake Bed, or discharged to the wastewater or stromwater systems in Las Vegas. According to the Applicant's Water Management Plan (URS Corporation 2011b), discharged water would be tested and/or treated as required by the local jurisdiction, and applicable permits would be obtained before discharge.

Temporary Power/Telephone Service

Temporary power and telephone service (including mobile) would be required at the construction yards. Construction of the Proposed Project would not require high volumes of electrical power; where needed, generators would be used onsite for power. Construction activities would not require natural gas.

Permanent Power/Communications Services

Permanent power and communications would be required at all mainline motor operated valves, rectifiers, pipeline pig signals, mainline transmitters, and at the Sunset Junction site. The precise location of these devices would not be defined until detailed system design is complete. It is anticipated that these devices would be located at sites with existing power and communications, primarily adjacent to similar devices already in place on the operating pipeline system. Improvements to power and communications systems at these locations would only be necessary if the utility that provides these services indicates that their existing systems are not adequate to support the additional devices.

2.2.4 Operation, Maintenance, and Safety Controls

This section describes the general safety features of the pipeline as well as ongoing procedures to ensure safe operation of the existing Calnev Pipeline System and Proposed Project. This section presents information about of Kinder Morgan's operation and maintenance procedures and safety controls including a schedule for proposed maintenance activities, corrosion protection and detection systems, and emergency response procedures.

2.2.4.1 System Control, Operation, and Safety Features

Supervisory Control and Data Acquisition System

Kinder Morgan currently monitors the Calnev pipeline system with a SCADA system. The SCADA system is a computer system that gathers and analyzes real-time system operation 24-hours a day. The safety system that would be used for the Proposed Project is based on the current SCADA System.

Pumps used to move product through the pipeline would be equipped with various safety devices that measure pressure, electrical current, and temperature to assure reliable and safe operation of the pumps. The pipeline would be protected by pressure control valves as well as pressure measuring devices. The safety system would maintain communications and system control by sending instructions to and receiving information from Programmable Logic Controllers located at interval along the pipeline. The computerized system would continuously gather operational data from critical sources throughout the system and automatically adjust the pressure and flow rate of the pipeline to provide for safe operation of the system.

Pipeline Leak Detection System

The pipeline leak detection system would perform computerized surveillance of volumetric line balance, flow deviation and pressure deviation. Line balance calculations would continuously compare the product metered in and out at various stations. All shipping pumps would be equipped with maximum and minimum shut down devices. These devices would automatically shut down the pipeline in case of a substantial pressure anomaly. The line balance system would be designed to both detect leaks and alert monitors in the event of possible leaks.

The "One Call" System

Once in operation, Calnev would also adopt a "one call" system. This system provides a single toll-free number for contractors and individuals to call before digging in the vicinity of the pipeline. This is in addition to the warning tape with the pipeline name that would be buried approximately 18 inches above the pipeline.

Emergency Response

An Oil Spill Response Plan (OSRP) has been approved by appropriate federal, state, and local agencies (including Department of Fish and Game, Office of Spill Prevention and Response). The OSRP is required under California state and federal regulations (SB 2040 and 40 CFR 300, the Hazardous Substances Pollution Contingency Plan). The OSRP provides a finalized list of emergency service providers. An Emergency Plan was also prepared to specify measures to be taken in emergency scenarios. These documents identify the responsible parties for the incident command and the supporting organizations/agencies. Normally, the fire department commanders remain the incident commander until relieved by other authorities legally required to assume responsibility for the incident.

Stations would have firefighting and other emergency equipment. Fire-fighting equipment includes fire extinguishers inside the control rooms for electrical fires around panels and switchgear. Dry powder fire extinguishers would be located in the station yard for hydrocarbon fires. Fire suppressant foaming agents (alcohol-type concentrate) and related foam generation equipment would also be located onsite or readily available. Also, emergency call lists would be posted at all stations, in case of accident, fire, or explosion.

A regional spill response cooperative would serve as the emergency response contractor with primary responsibility for containment, cleanup, and health and safety. The OSRP lists third-party contractors that would provide manpower and equipment such as vacuum trucks, boats, oil skimmers, absorbent and skirted booms, dump trucks, portable tanks, absorbent materials, dispersants, steam cleaners, hydroblasters, cranes, and forklifts. In addition, operations personnel of the Proposed Project would be trained in the Incident Command System and oil spill containment and cleanup procedures. Local emergency response providers would be notified to assist in traffic control, evacuations of homes or businesses, crowd control, ambulance and hospital services, and backup fire protection services.

Cathodic Protection

Underground pipelines are protected from corrosion by an exterior coating. They are further protected by cathodic protection systems designed to resist the corrosion. Cathode protection ground beds, also called anodes or anode beds, are an integral part of these systems.

Anode beds may be of several types. The most common is a 12-inch diameter bore drilled to approximately 500 feet in depth. Anodes are placed in the bore hole. The surface disturbance for this type of anode is minimal since the bed is vertical and the drilling equipment is compact and self-contained. Occasionally, an existing anode will become depleted and must be replaced.

Another type of anode bed is a surface anode, consisting of several hundred feet of steel pipe or rail perpendicular to the direction of pipeline. The pipe or rail is buried a few feet below the surface and connected to the electrical rectifier and piping at the end. This type of anode bed, as well as surface anodes are used when a drilled bed is ineffective because of subsurface formations that restrict electrical current movement.

A third type of anode bed is a distributed anode system, typically used within pump stations or valve sites. These are shallow anodes (i.e., 10 feet in depth) that are used to protect station piping and valves.

The exact location of new deep ground beds for the 16-inch pipeline would not be finalized until the preferred route is selected by the lead agencies and the cathodic protection design is initiated. For the purpose of the analysis, this EIS/EIR assumes that 10 new deep well anodes would be required. It is anticipated that the new deep anodes would be located next to the existing anodes at the following existing or new pump stations/junctions locations:

- Colton North Terminal,
- Cajon Pump Station,
- Adelanto Junction,
- Lenwood Junction,
- Yermo Junction,
- Barstow Terminal,
- Silver Lake Pump Station (proposed facility),
- Cima Pump Station, and
- McCarran Terminal

Cathodic protection deep well anodes would be constructed in accordance with California well standards and the applicable Nevada well standards.

2.2.4.2 System Maintenance

The Calnev pipeline system includes both pipeline and related support facilities (e.g., aerial and ground markers, access roads, pump stations, main line block valves, and rectifier/anode beds, cathodic protection test stations) that require regular inspection and maintenance to keep the system in operation. Necessary operations and maintenance activities include but would not be limited to the following:

1. Regular inspection of the pipeline route to identify pipe exposure due to washouts, signs of a release, third-party encroachments or to evaluate above-ground support equipment, including aerial markers, rectifier/anode beds, valve stations, and pump/power stations;
2. Excavation and repair of pipeline segments experiencing coating degradation or requiring inspection to evaluate coating condition;
3. Repair of valve stations and rectifier/anode beds where damage is noted during regular inspection;
4. Placement of additional rectifier/anode beds in order to reduce pipe corrosion rates;
5. Replacement and/or hardening of pipeline cover due to washouts, erosion, or other damage;
6. Right-of-way clearing for ease of operation and maintenance; and
7. Repair of pipeline at locations damaged by third parties, corrosion, or other factors.

All these activities are required by the Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) (49 CFR Part 195) regulations. Planned operational and maintenance activities have been categorized into three classes ranging from little or no ground disturbance (Class I) to those with substantial disturbance (Class III). These activities and their expected frequency are summarized in Table 2-10.

Table 2-10 Planned Maintenance Activities on Calnev Pipeline System

Activity	Estimated Frequency	Disturbance Area
Class I Activities: Little Or No Surface Disturbance		
Right-of-Way inspection	Bi-weekly	No ground disturbance. Driving only on established access roads or via air patrol
Pipeline Marker Replacement	Bi-monthly	Less than 10 square feet
Rectifier/Anode Bed Inspection	Bi-monthly	No ground disturbance. Driving only on established access roads
Valve Inspection	Bi-annual	No ground disturbance. Driving only on established access roads
Internal Inspection	Every 5 years	No ground disturbance. Driving only on established access roads
Pump Station inspections	Weekly	No ground disturbance. Driving only on established access roads
Weed Control	As Needed	Localized disturbance around pump stations and existing facilities.
Class II Activities: Minor Surface Disturbance		
Anode Bed Replacement	1 every 5 years	0.25 acres
Test Station Replacement	1 every 2 years	0.02 acres
Access Road Maintenance	1 every 5 years	Less than 5 acres
Anomaly Test Digs	10 every 5 years	0.02 acres
Minor Pipeline Excavation and Potholing	10 per year	0.01 acres
Minor Pipeline Washout Repair	1 per year	0.05 acres
Equipment Relocations	1 every 5 years	0.05 acres
Valve Replacement	1 every 10 years	0.05 acres
Right-of Way Vegetation Clearance	1 every 10 years	1 acre
Class III Activities: Major Surface Disturbance		
Major Pipeline Excavation, Repair or Replacement	1 every 20 years	Up to 10 acres
Major Pipeline Exposures and Washouts	1 every 10 years	Up to 5 acres
Major Right-of Way Vegetation Clearance	1 every 20 years	Up to 10 acres
Emergency Repairs	As Needed	Up to 10 acres

Source: URS Corporation 2009

Class I: Little or No Surface Disturbance

Class I activities are pipeline operations and maintenance that typically do not result in any ground disturbance but may include driving along the pipeline ROW. These activities include, for example, patrols and inspections of the pipeline system using existing maintained access roads; inspections of valves or rectifiers; or repairs or replacement of pipeline markers. These activities have a low potential for adverse effects to listed species or other resources.

Inspections

Right-of-Way

Calnev is required to inspect the ROW a minimum of 26 times per year. This is primarily done by aerial patrol, but ground vehicles are dispatched during inclement weather, for areas that are inaccessible to aircraft, or to investigate observations made from aircraft. In addition, Calnev regularly is called out to identify the location of our pipelines by Dig Alert in association with excavations by third parties.

Pipeline Marker Placement/Replacement

In support of ROW inspections, PHMSA Part 195 mandates that the pipeline be clearly marked so as to be visible from the surface. Markers consist of a metallic sign and sign post with emergency information, and are spaced at approximately one-tenth mile intervals and controlled by line of sight. Aerial markers must also be provided to support aerial patrols. Calnev routinely replaces markers as they become damaged.

Cathodic Protection Inspection

To test the effectiveness of the protection, PHMSA mandates that the rectifiers be inspected bi-monthly, and the entire system annually. Any deficiencies must be corrected as soon as possible, since inadequate cathodic protection levels may result in corrosion. Inspections are done by measuring electrical potentials along the pipeline via above-ground test stations. Occasionally, test stations must be repaired, requiring local excavation of the pipeline. Repairs typically consist of re-attaching small wires to the pipeline and routing them the test station. Ground beds may also require local maintenance.

Valve Inspections

Block valves are installed at five- to ten-mile intervals along the pipeline. Valves must be inspected semi-annually, not to exceed seven months to ensure proper operation (per 49 CFR 195.420), and repaired as needed. Repairs can often be done from the surface, but sometimes the valve must be excavated to expose the valve body.

Internal Inspection

Internal inspection tools are used to check for deformation, metal loss and other anomalies of underground pipelines. Pigs or scrapers are devices inserted into the pipeline at launching points and retrieved at receiving points called scraper traps. Pigs are used to clean and/or inspect the pipeline. "Smart" pigs are devices used to inspect and record the condition of the pipe. Smart pigs detect where corrosion or other damage has affected the wall thickness or shape. Support crews must traverse the surface to track the location of the tool. After the smart pig has been retrieved from the pipeline, the data will be gathered and analyzed to reveal the condition of the pipeline. If the smart pig detects an anomaly in the pipeline, crews would be deployed to the site to excavate the potentially compromised section(s) of pipeline. Crews would inspect the pipe and damaged pipe will be repaired. Pipeline locations where repairs to the pipeline must be conducted are covered under Class II activities. PHMSA regulations require internal inspection of petroleum pipelines every five years in accordance with DOT standards.

Hydrostatic Testing

Hydrostatic testing during pipeline operation would be conducted as required by DOT. Hydrostatic testing is described in Section 2.2.3.1.

Pump Stations

Pump stations along the pipeline are inspected at least weekly. Maintenance for pumps, motors, or other equipment is confined to within the pump station fence line, and travel is along previously established access roads.

Weed Control

Weeds and other growth are removed as needed. Growth could be controlled by chemical herbicides applied locally, or by manual removal. Vegetation growth is not controlled along the ROW itself. Disturbed areas are allowed to become re-vegetated. Shrubs are removed only when the pipeline must be exposed for maintenance (see Class II activities).

Class II: Minor Surface Disturbance

Class II activities may result in minimal amounts of disturbance to areas located outside of the existing ROW. Low numbers and smaller-to-medium size equipment, including light trucks, welding trucks, or backhoes are used to perform these tasks. Duration of work is usually from a few days to a few weeks.

Test Station Installation and Repair

Cathodic protection potentials must be checked periodically by measuring the potential on the buried pipeline relative to a surface reference electrode. Wires (test leads) are permanently attached to the pipeline during installation and brought above ground, terminating in a small electrical test station. Occasionally these wires become shorted, or the above-ground box becomes damaged. Repairs may include excavating a small hole over the pipeline, re-attaching the test leads, and backfilling the hole. Or periodically, a new test station may need to be installed. Periodic repairs to cathodic protection test stations consist of repairs to the above-ground test station, or excavating a small hole over the pipeline to re-attach the wires. This activity results in a minimal level disturbance, as each test site is located in a previously disturbed area and follow-on excavations are generally directly over the pipeline.

Road Maintenance

It is sometimes necessary to re-grade access roads that have become rutted due to water runoff, public use, or other causes. Grading may be done using a backhoe, road grader, front-end loader, or other similar equipment.

Anomaly Test Digging

Part of the internal inspection program is to locate sites of active corrosion and/or mechanical damage, if any, on the pipeline. Smart pig data must be verified by excavating a sampling of the sites identified in the data. Therefore, a few sites are selected, exposed by excavation (typically 5' x 5'), and the condition of the pipeline is evaluated to calibrate the data provided by the pig. Since there is no way to know in advance where these sites will be found, it is possible that some surface disturbance would be caused by this activity. Some locations along the pipelines lack a smart pig launch site, and thus require installation of a temporary site. Installation of the launch site exposes an area approximately 40 feet wide and 70 feet long.

Minor Pipeline Excavation (Potholing, Repair, or Replacement)

At times, the pipeline must be exposed (typically less than 10 feet to about 50 feet of length) to verify its location, and check for local damage. The surface would have been previously disturbed during pipeline installation, and only small construction equipment is used. Hand-digging with shovels is done to supplement the machine excavation, typically undertaken using a single backhoe.

Small segments of the pipeline may become damaged as a result of soil alkalinity, abrasions to the pipe coating, or damage from third-party excavations or exposure from flash flooding. Such areas are often pinpointed during internal inspections ("smart pigging"). Short pipe segments in need of repairs are usually excavated using a backhoe or small track hoe. The pipe coating may be replaced, and new coating applied. If damage is more severe, the pipe segment may be cut out and replaced with a pre-tested segment. Work on a short segment of pipe requiring recoating usually can be completed in less than three days. Pipe replacement however, typically takes longer and requires additional equipment that may include a side-boom, welding truck, and X-ray truck to inspect welds. Work on small replacement/recoat segments is done entirely within the pipeline ROW.

Pipeline Washout Repair

Heavy rainfall runoff may create new channels or gullies that cross over the pipeline, exposing it for several feet to several hundred feet. Adequate cover must be maintained over buried pipelines at all times. When the pipeline is exposed, it must be inspected for pipe and coating damage, recoated if necessary, and recovered. Native soil is most often used, or new fill material would occasionally be imported. Recent washout repairs have included covering the pipeline with mats composed of articulated concrete blocks (Submar). These mats protect the pipeline and resist further washouts.

The amount of disturbance associated with pipeline washouts is variable, and can range from negligible (e.g., smoothing over scouring in a very small exposed segment) to larger areas (e.g., repairing a flood-damaged line where several segments, totaling several hundred linear feet are exposed). A small washout repair project may include the use of a single backhoe or front-end loader to re-contour surface soils and smooth over the reburied pipe segment. Such work is usually completed in one day. A larger washout, however, may include the use of loaders and backhoes, and possibly the use of dozers and dump trucks. Depending upon the severity of surface soil scouring, dump trucks may be required to import soils from borrow areas offsite to replace surface soils lost from erosion. Such larger-scale projects may require several days to a week to complete (see Class III activities).

Small Equipment Relocations

There are occasional needs for implementation of small projects that may be completed entirely within the existing pipeline ROW. Such projects may include the relocation of an anode or placement of a block valve, or temporary installation of a measurement device. Equipment associated with such actions may include a pickup truck, utility truck, small crane, welding truck, vacuum truck and/or backhoe. Work on small-scale jobs typically is completed within a week.

Valve Replacement

In some cases, valve inspections may determine that a particular valve is subject to damage or wear, and must be replaced. In such instances, the valve components are disassembled and removed from the site, and replaced with an entirely new valve. Work can be completed in two days. Work can also be confined entirely to the existing "footprint" of the original valve, resulting in no damage or loss of adjacent vegetation.

Right-of-Way Vegetation Clearance

Portions of the pipeline ROW may be subject to small-scale vegetation clearance that include the need for access to a certain location, fire prevention around a block valve or pump station, or parking of vehicles and equipment as a staging/letdown site. Vegetation is typically scraped clear around larger areas using a blade, backhoe, and/or front-end loader. For localized jobs around facilities, vegetation may be removed using hand tools. Clearance projects of this scale typically affect an area less than one acre, and are typically completed in 1-2 days.

Class III: Major Surface Disturbance

Class III activities may result in surface disturbances of larger areas of up to several acres. Larger numbers of medium-to-heavy equipment may be used, that may include dump trucks, track hoes, dozers, cranes, or side-booms. The duration of work necessary to perform the maintenance task may also be relatively extended, and could exceed a period of several weeks.

Major Pipeline Excavation, Repair, or Replacement

Any repairs involving over 50 feet in length of pipeline would be considered a major pipeline repair. This includes protective coating replacement, inspection or repairing of the pipeline, or actual pipeline replacement. Equipment used for these activities may include, but is not limited to, larger tracked backhoes, side booms, cranes, truck-trailer combinations, welding machines, pick-ups, and vacuum trucks.

Major Pipeline Exposures/Washouts

If the pipeline becomes exposed due to a major washout, larger equipment would be used to make repairs. Mitigation measures may be proposed to erect protective barriers (rip-rap, weirs, etc.), lower the pipeline, or relocate it altogether.

Depending upon the location of the washout, if repair work will alter the contours of a drainage crossing the pipeline, or if excavation or fill will occur as a matter of the repair work then a Streambed Alteration Agreement under Section 1602 of the Fish and Game Code would be required from the California Department of Fish and Game, and/or a Section 404 Permit may also be required from the U.S. Army Corps of Engineers.

Right-of-Way Vegetation Clearance

Right-of-way vegetation clearance may proceed over larger areas totaling from one to 10 acres in extent for such actions as blading to create patrol/access roads along the pipeline in areas that currently have no roads, or to rebuild eroded sections of the centerline pipeline. Equipment that would be used, depending upon particular circumstance, could include a grader, dozer, front-end loader, backhoe and dump trucks. Such actions would require one or more crews of several people, and could last in duration from several days to several weeks.

Emergency Repairs

An "emergency" is defined as a release or threat of a release within the pipeline system. Emergency responses to third party damage, releases, or washouts in Calnev's petroleum products pipeline system are regulated under the United Sates Department of Transportation through the Oil Pollution Act of 1990 (OPA 1990), and through California Office of Spill Prevention and Response (OSPR) regulations. Most pipeline releases result from "third party" hits occurring during excavation activities near a pipeline.

An Oil Spill Response Plan (OSRP) has been approved by appropriate federal, state, and local agencies (including Department of Fish and Game, and OSPR). The OSRP is required under California state and federal regulations (SB 2040 and 40 CFR 300, the Hazardous Substances Pollution Contingency Plan). The OSRP provides a finalized list of emergency service providers. An Emergency Plan was also prepared to specify measures to be taken in emergency scenarios. The following documents identify the responsible parties for the incident command and the supporting organizations/agencies:

- San Bernardino County Fire Department Emergency Response and Contingency Plan (Barstow and Calnev Colton Terminals);
- Victorville Fire Department Hazardous Material Business Emergency Response Plan (George Air Force Base Terminal);
- Nevada State Fire Marshall Hazardous Material Registration (Las Vegas Terminal);
- EPA Facility Response Plan (OPA 1990) (facility specific plans);
- Internal Emergency Response Plan (all Calnev system); and
- PHMSA Pipeline Oil Spill Core Plan (OPA 1990) (all Calnev system).

Spill Prevention Control and Countermeasures (SPCC) plans are located at all Calnev terminals and outline maintenance measures and guidelines for preventing releases. Stations have fire fighting and other emergency equipment. Fire-fighting equipment includes fire extinguishers inside the control rooms for electrical fires around panels and switchgear. Dry powder fire extinguishers are located in the station yard for hydrocarbon fires. Fire suppressant foaming agents (alcohol-type concentrate) and related foam generation equipment is also onsite or readily available. Also, emergency call lists are posted at all stations, in case of accident, fire, or explosion. Normally, the fire department commanders remain the incident commander until relieved by other authorities legally required to assume responsibility for the incident.

A contractual agreement exists with a regional spill response cooperative that would serve as the emergency response contractor with primary responsibility for containment, cleanup, and health and safety. The OSRP lists third-party contractors providing manpower and equipment such as vacuum trucks, boats, oil skimmers, absorbent and skirted booms, dump trucks, portable tanks, absorbent materials, dispersants, steam cleaners, hydro-blasters, cranes, and forklifts. In addition, operations personnel of the Proposed Project are trained in the Incident Command System and oil spill containment and cleanup procedures. Local emergency response providers would be notified to assist in traffic control, evacuations of homes or businesses, crowd control, ambulance and hospital services, and backup fire protection services.

Repair activities are precipitated by an unplanned emergency, such as a pipeline rupture, release, or fire. Containment and repair may also extend beyond the ROW, and can involve large numbers of personnel and equipment. Depending upon the circumstances, the action may be entirely restricted to the ROW, requiring few personnel and little adverse effects to vegetation and wildlife, or could cover several acres of vegetated area, requiring an extensive timeframe for repair.

The objective of emergency repair activities would be to stop, contain and clean up hydrocarbons from any pipeline releases. Equipment and personnel would be used in the event of a pipeline release or break to: contain the release; excavate and expose the problem location on the buried pipe; repair or replace the pipe segment; remove any contaminated soils for disposal; and refill the excavated trench following repair.

Emergency repair activities are not, however, limited to instances where product has been released. Emergency repair activities are required any time pipeline integrity has been compromised and may include third party hits or urgent anomalies (as determined by PHMSA, Calnev, or the State Fire Marshal). Certain operating situations arise that require emergency closing of block valves or immediate route inspection to verify integrity. The extent of the vegetative disturbance would vary based on the circumstances of the particular emergency.

When a release is discovered, response must begin immediately to contain the release, stop the release and begin mitigation measures. Quick response has been shown to minimize effects to the environment. Emergency activities may include deploying large earth-moving equipment such as mentioned in Section 2.2.4.2: Class III: Major Surface Disturbance. Other equipment may include bulldozers, vacuum trucks, and temporary lighting. Activities may include creating earthen dikes, excavating damaged pipe and contaminated soils, and pooling and removing the product.

Notification of the release can occur simultaneously with emergency response actions. An evaluation of environmental impact and remediation for any losses sustained by the environment would occur when the release is contained and the emergency is over.

2.2.5 Future Plans and Abandonment/Decommissioning

The expected operational life of the Proposed Project would be at least 50 years. Pipeline lifespan is normally dictated by economic obsolescence. The decommissioning process would be subject to appropriate local, state, and federal regulations enforced at the time of abandonment. As required by federal and state laws, the pipeline operator would be liable for clean up and remediation of any contamination generated by pipeline.

In the decommissioning process, the drained pipeline would be de-fueled and purged by sending squeegee-cleaning pigs through the pipeline using pressure from inert gas. The tie-in valves at all delivery points, receiving stations and pump stations would be sealed off and all block valves would be closed; check valves would be left intact. The purged, sealed pipeline would be filled with pressurized inert nitrogen gas and abandoned in place.

The abandoned pipeline could possibly be used for other purposes, for example as a wastewater conveyance or as a conduit for underground electrical utilities, cable television, fiber-optic lines, and telephone or data circuits.

2.2.6 Minimization Measures from the Plan of Development

As part of their Plan of Development, the applicant has submitted proposed measures to avoid or minimize potential impacts, which would be implemented as part of the Proposed Project.

These measures have been developed for Water Resources and Biological Resources, and are discussed in those sections within Chapter 3

2.2.7 CDCA Plan Amendment

The proposed action for the purpose of the plan amendment is whether to site 13 miles of the pipeline outside of the existing utility corridors as designated in the CDCA Plan. The physical activities, including construction, operations, and maintenance, that would occur as part of the plan amendment are the same as those that would occur as part of the Proposed Project. The only unique issue associated with the CDCA Plan Amendment would be the location of the pipeline outside of the designated utility corridors. Although the activities would occur outside of the corridors designated in the CDCA Plan, they would still occur within the same right-of-way which is the current location of the existing Calnev 8-inch and 14-inch pipelines.

2.3 Development of Alternatives to the Proposed Action

Both the NEPA and the California Environmental Quality Act (CEQA) require the identification and assessment of reasonable alternatives that could potentially avoid or minimize the adverse impacts of a project. NEPA requires that Federal agencies evaluate a reasonable range of alternatives to a Proposed Action and present the potential impacts in a comparative format in order to provide a clear basis for choice among options by the decision-makers and the public (Title 40 CFR Part 1502.14). The State CEQA (14 CA ACC Section 15126.6) similarly emphasizes the selection of a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

Agency staffs considered a range of alternatives to the Proposed Action that (1) could feasibly attain most of its basic objectives and (2) would avoid or substantially lessen any of the significant impacts of the Proposed Action.

<u>Alternatives Development Process</u>

For this project, the development of alternatives followed this process:

1) Evaluation by the applicant of potential methods to meet the project purpose and need, which is meet the projected demand for petroleum products in Southern Nevada and the California High Desert. This process, described in Section 2.3.1.1, resulted in the applicant's identification of an expansion of the existing Calnev system as the only feasible option.

2) Evaluation by the applicant of the optimal route for the proposed pipeline. This process, discussed in Section 2.3.1.2, resulted in the Applicant's proposed route, which is Alternative 1 being evaluated in this EIS/EIR. The Applicant's proposed route primarily parallels the route of the existing pipelines, but has specific segments (discussed in Section 2.3.1.2) which vary from the route of the existing pipelines for reasons of administrative feasibility, constructability, and reduction of potential environmental impacts.

3) The Applicant's Proposed Project, including the proposed route, was the subject of public review and comment during the scoping process for this EIS/EIR. The scoping comments are summarized in Section 2.3.2

4) Based on a review of the comments received, and in consultation with other agencies, BLM developed numerous location-specific variations to the proposed route. These variations were evaluated, and three of them were determined to either not be feasible, or to not result in a reduction of impacts as compared to other alternatives. Therefore, these three variations, discussed in Section 2.3.1.3, were not considered further in this EIS/EIR.

5) Eight additional variations identified as a result of the scoping process were retained for further analysis, and were collectively developed as Alternative 2, described in Section 2.4.

6) Following the environmental evaluation (presented in Chapter 3), the agencies identified a third alternative, which combines components of Alternatives 1 and 2. Alternative 3 is described in Section 2.5.

2.3.1 Alternatives Considered but Eliminated from Further Analysis

Initially, numerous alternatives for the Proposed Project were developed for consideration. Proposed Project alternatives that showed insufficient potential to achieve the Proposed Project Purpose and Need and objectives were eliminated from further analysis. Those alternatives initially considered but eliminated from further review are presented below.

2.3.1.1 Applicant Evaluation of Overall Options

Pipeline Options from Locations Other than Colton Terminal

Alignments initially evaluated included Niland, California to Las Vegas, Nevada; East Phoenix, Arizona to Las Vegas, Nevada; West Phoenix, Arizona to Las Vegas, Nevada; and Yuma, Arizona to Las Vegas, Nevada (Figure 2-21).

The East Phoenix, West Phoenix, and Yuma alternatives were eliminated from further analysis because they would result in longer pipeline routes (Table 2-11) and, therefore, impact larger resource areas and require additional construction and maintenance costs. These alternative alignments also do not fulfill the purpose and need of the Proposed Project as they would not increase fuel delivery from the refineries in Southern California to the California High Desert and Southern Nevada.

While the Niland route meets the purpose and need of the Proposed Project, as well as being twelve miles shorter than the proposed Project route, it would require additional ground disturbance for improvements to the system between Colton and Niland. Furthermore, petroleum products would need to be pumped from Colton to Niland, California, and then to Las Vegas, Nevada. Pumping the product over this increased distance would require a substantial increase in power consumption.

Non-Pipeline Options

Although it is speculative to predict the actions that could be taken to meet the fuel needs of the region, as well as the resulting effects of those actions if the Proposed Project applications are denied, a portion of the demand could be met in ways identified in a report prepared by the Clark County Blue Ribbon Commission (BRC) to improve the reliability of southern Nevada's fuel supply (Clark County 2006). Two alternative methods of fuel transportation were examined in the BRC report: delivery by a combination of rail and truck, and delivery exclusively by truck.

Table 2-11 Comparison of Pipeline Alignment Alternatives

Route	Linear Miles	Acreage (1) Disturbed	Net Difference (Compared to Applicant's Proposal) Linear Miles	Acreage (1) Disturbed
Applicant's Proposed Alignment	233	2,841.2	--	--
Niland	221	2,678.8	-12	-162.40
East Phoenix	310	3,757.6	77	916.40
West Phoenix	313	3,793.9	80	952.70
Yuma	281	3,406.1	48	564.90

Source: URS Corporation 2007
Notes: (1) Assumes a 100' ROW

Delivery by Rail

The BRC examined the option of meeting a portion of the region's demand for refined petroleum products by rail delivery. Las Vegas, Nevada is connected to California by the Union Pacific Railroad, which currently delivers fuel in the form of ethanol and coal to Southern Nevada. The potential exists to import quantities of other fuels via dedicated trains, called "unit trains," consisting of 60 to 100 cars each (Clark County 2006). For refined petroleum products, including gasoline, diesel, and jet fuel, Union Pacific Railroad has three different tank sizes for shipments between Colton, California and Las Vegas, Nevada: a 24,500 gallon car, a 27,500 gallon car, and a 34,500 gallon car. The BRC report considered how much fuel could be transported by rail using a scenario consisting of a train of 85 cars, with tank capacities that ranged from 24,500 to 34,500 gallons per car, with a schedule of one to three trains per week; this would provide less than 30,000 barrels per day (Clark County 2006) (Table 2-12).

Table 2-12 Potential Fuel Transport by Rail

Rail Car Capacity	24,500 Gallons	34,500 Gallons	24,500 Gallons	34,500 Gallons	24,500 Gallons	34,500 Gallons
Cars/Train	85	85	85	85	85	85
Trains/Week	1	1	2	2	3	3
Barrels/Day	7,083	9,974	14,167	19,948	21,249	29,922

Source: Clark County 2006

Unit trains would run from Colton, California to Las Vegas, Nevada. The facilities required would include a rail terminal in Colton, California as well as one in Southern Nevada for loading/off-loading the unit trains. The loading facilities would consist of a multi-tracked, looped rail spur, storage tanks, pumps, loading/off-loading stations and a rack for loading the fuel into tanker trucks for transport to the final delivery point. A linear unit train terminal would require approximately 50 acres of land. A loop unit train terminal would require approximately 100 acres of land. Once the fuel has been delivered to Las Vegas, it would then be off-loaded onto tank trucks, with a capacity of 8,800 gallons per truck, for delivery to final destinations (Clark County 2006).

The BRC report identified fuel delivery by rail as a short-term solution to meet immediate increases in need. It would require construction of new loading/off-loading facilities that would not be required by the Proposed Project. The No Project Alternative would also add truck trips from the Las Vegas terminal to the end user, resulting in increased vehicular and greenhouse gas emissions.

Delivery by Truck

The BRC also evaluated fuel delivery by truck as an alternative or supplement to current fuel transportation methods. The BRC report estimated that a fleet of approximately 25 trucks with an 8,800 gallon capacity would make the twice daily trips, delivering 10,476 barrels of fuel a day to the Southern Nevada region (Clark County 2006).

To facilitate delivery by truck, new construction of a loading terminal in Colton, California would be required to allow for 50 loads per day. This alternative would also require the construction of similar facilities in Southern Nevada to offload the fuel. The highway driving distance between Colton's terminal and McCarran International Airport is 226 miles; designated fuel trucks would likely make twice-daily trips for a total of 904 daily highway miles per truck per day (Clark County 2006). The BRC report estimated that it would take two to three years to complete the terminal improvements and acquire dedicated trucks and trailers.

As with the fuel by rail alternative, delivery via truck would increase fuel supply in the Southern Nevada region without the construction of the Proposed Project. However, it would require terminal construction and upgrades, and add additional daily truck trips with associated vehicle and greenhouse gas emissions.

2.3.1.2 Applicant Evaluation of Use of Existing Pipeline Route

Upon selecting the Colton to Las Vegas route for their Proposed Project, the Applicant developed specific features of the proposed route, and submitted a SF-299 ROW application for the route to the BLM. In general, the proposed route follows the existing pipeline ROW for the two currently existing Calnev pipelines. This presents the advantage of reducing project impacts by placing the proposed pipeline in area already occupied by the current pipelines, and also facilitates pipeline operation and maintenance by placing the proposed pipeline in close proximity to the existing pipelines. However, in developing specific features of the route, Calnev determined that several variations from the existing route were required. These variations were developed, partly in consultation with federal, state, and local agencies and landowners, based on changes in land ownership, knowledge of potential risks, issues with constructability, and other information identified since the construction of the existing pipelines.

This section describes the segments of the existing pipeline route which the Applicant determined, for various reasons, were not appropriate for construction and operation of the proposed pipeline. The segments are described in the order in which they occur along the Proposed Project Mileposts.

Linden Avenue (MP-2 to MP-9)

After it crosses Interstate 10 from Slover Avenue, the existing 8-inch pipeline follows Linden Avenue through Rialto. In initial discussions with the City of Rialto, the Rialto Unified School District, and Rialto residents, concerns were expressed regarding placement of the proposed pipeline on Linden Avenue, the location of schools, parks, and residences. In response, Calnev proposed a route north along Cactus Avenue, an area which is expected to have less impact on residents, traffic, and schools.

Glen Helen Park (MP-12 to MP-17)

The existing 8-inch pipeline passes through Glen Helen Park, and in the initial SF-299 application, Calnev proposed to use this same route for the proposed pipeline. However, after meeting with local officials, who expressed concerns regarding the use of the route through the Park, Calnev submitted a letter to BLM revising the SF-299 application. The revision, incorporated into the Proposed Action (Alternative 1), crosses Cajon Wash and the Southern Pacific Rail line, and bypasses Glen Helen Park.

Swarthout Canyon (MP-21 to MP-26)

The existing 8-inch and 14-inch pipelines traverse through 3.24 miles of Swarthout Canyon. The Swarthout Canyon route was eliminated from further analysis because specific design considerations and environmental issues associated with Swarthout Canyon would contribute to the following:

- Potential for topcover loss
- Location parallels the San Andreas Fault
  - This route would place 3.24 miles of pipeline adjacent to the San Andreas Fault and an existing creek. Placing pipelines adjacent to faults increases the risk of pipeline rupture during a seismic event. Preventing the pipeline from releasing product into the environment also becomes more difficult when a pipeline is placed parallel to the hazard because a longer section of the pipeline would be susceptible to damage from an earthquake.
- Temporary loss of riparian habitat within Swarthout Canyon during construction
- Potential for threatened and endangered species presence
- Wide benching that would be needed to accommodate construction on steep terrain
- Additional road construction or enhancement of existing roads
- Increased potential for pipeline failure
  - Pipeline failure could impact existing watershed and downstream population of sensitive species.

The Swarthout Canyon route also would increase the total length of the Proposed Project by 1.1 miles. This increase in length would increase the area of potential disturbance; however, it would minimize the amount of new disturbance as it would follow existing pipelines. This route would require the construction of additional roadways as well as the expansion of existing roadways to facilitate the transport of equipment to the ROW. Clearing and grading of these roads, along with the ROW, could potentially result in the loss of sensitive vegetation.

Mojave River Crossing (MP-53.5 to MP-54.5)

The location of the existing 8-inch and 14-inch pipelines at the crossing of the Mojave River near La Delta consists of a high, steep riverbank. This riverbank would create construction difficulties for the proposed pipeline, including the need to do substantial deep trenching across the riparian area associated with the river (See Figure 2-5). To reduce impacts associated with construction of the proposed pipeline at this location, the Applicant proposed a location approximately 0.5 miles to the north which was more amenable to use of an HDD to allow the pipeline to cross the Mojave River without the need for open trenching.

Manix to Dunn (MP-109 to MP-116)

In this section of the existing pipeline route parallel to Interstate 15 and the Mojave River, the existing pipelines are located along the railroad, which diverges from Interstate 15 for a distance up to a mile. In this area, the Applicant determined that there was insufficient space along the railroad ROW to allow construction of the proposed pipeline adjacent to the existing pipelines. Also, a more direct route along Interstate 15 was shorter, and provided easier access for operation and maintenance operations on the proposed pipeline.

Zzyzx to Halloran Springs (MP-139 to MP-158)

In the area between Zzyzx and Halloran Springs (including the town of Baker), for a distance of almost 20 miles, the existing 8-inch and 14-inch pipelines are located on the southeast side of Interstate 15, and are therefore located within the boundaries of the Mojave National Preserve, managed by the National Park Service (NPS). Construction of the proposed pipeline within the Preserve is not administratively feasible, and therefore Calnev developed the route for the proposed pipeline on the northwest side of Interstate 15.

Mountain Pass to Nipton Exit on I-15 (MP-182 to MP-186)

The existing 8-inch and 14-inch pipelines pass through the Mojave National Preserve in the area between Mountain Pass and the Nipton Road exit from Interstate 15. Calnev originally proposed to use this same route for the proposed pipeline in the initial SF-299 application. However, after meeting with Preserve management and determining that a route through the Preserve was not administratively feasible, Calnev submitted a letter to BLM revising the SF-299 application. The revision, incorporated into the Proposed Action (Alternative 1), continues on the north side of Interstate 15, and then crosses Interstate 15 and re-joins the existing pipelines after they exit the Preserve boundary.

Jean Lake to Sloan (MP-212 to MP-217)

In this segment, the existing 8-inch and 14-inch pipelines are located between the railroad line and Interstate 15. In this area, Calnev determined that there was not sufficient space between the railroad and Interstate 15 to construct a new pipeline. Therefore, the proposed route in this area closely parallels the existing lines (within 0.25 miles), but is located on the opposite side of the railroad tracks.

St. Rose to Cactus (MP-223 to MP-227)

Upon entering the Las Vegas area, the existing 8-inch and 14-inch pipelines cross to the west side of Interstate 15, and traverse north along Valley View Boulevard to Bracken Junction at Hacienda. Since the existing pipelines were constructed, this area has undergone substantial development as an area called Southern Highlands. Calnev determined that construction of the proposed pipeline in this area was not feasible, and that a direct route along Las Vegas Boulevard on the east side of Interstate 15 was more feasible.

2.3.1.3 Additional Pipeline Routes Considered but Eliminated

In addition to the existing pipeline route, other potential route options identified by federal, state, and local agencies were considered by the Applicant. This subsection describes the routes proposed by the agencies which the Applicant determined, for various reasons, were not appropriate for construction and operation of the proposed pipeline. The segments are described in the order in which they occur along the Proposed Project Mileposts.

Box Culvert Crossing of I-15 (MP-24)

The Applicant considered several alternatives to cross from the west to the east side of Interstate 15 near Cajon Pass. The Box Culvert would reduce impacts to the riparian habitat west of I-15 that has been identified by the USFS as sensitive. However, in order to access the Box Culvert open trenching of approximately one quarter of a mile (0.25 mile) of this riparian area would occur. Because of this impact, the Applicant chose to propose a HDD crossing at Wagon Train Road (discussed as part of Alternative 2 below).

South Clark County Utility Corridor (MP-206 to MP-217)

The City of Henderson requested that the pipeline portion of the Proposed Project be rerouted so that the entire length between Primm and Sloan, Nevada are contained within the South Clark County Utility and Transportation Corridor. This special overlay zone was adopted by Clark County as part of the South Clark County Land Use Plan (Clark County 2005). The Utility and Transportation Corridor is generally aligned east of and parallel to I-15, from Primm, Nevada to St. Rose Parkway (State Route 146). The South Clark County Land Use Plan (policy 25.1) encourages the "joint use of this corridor so that needed infrastructure is consolidated" (Clark County 2006).

The corridor is located directly adjacent to Interstate 15. From MP-205 (the southernmost extent of the corridor) to MP-209, the existing 8-inch and 14-inch pipelines are not located within the corridor. The proposed option at this location would have the proposed pipeline leave the existing lines, cross undisturbed desert approximately 0.75 miles to the northwest, cross through the Jean Airport facility, and re-join the existing pipelines north of Jean. Although this option would place the proposed pipeline within the designated corridor, it would require construction of approximately five miles of the proposed pipeline in undisturbed desert, rather than constructing it within the already-disturbed ROW. This option would also require construction of the proposed pipeline through the Jean Airport area, rather than bypassing the airport, as the existing pipelines do. Based on these factors, this option was dropped from further consideration.

Russell Road Lateral (MP-233)

Near the terminus of the proposed pipeline, three options were considered for crossing from Valley View Boulevard on the west side of Interstate 15 to McCarran Airport on the east side. The existing pipelines extent to Bracken Junction at Hacienda Avenue, and then cross Interstate 15 using a lateral pipeline along Hacienda. In addition to following the existing pipelines, crossings along Russell Road and Sunset Road were considered. The Applicant proposed use of the existing route along Hacienda Avenue. Based on limited space available for construction at Russell, the Applicant also preferred Sunset as an alternative to be considered. Because there would be no difference in environmental impacts between the Russell and Sunset routes, and the Sunset route is more feasible, Sunset was retained for further analysis, and Russell was eliminated from further consideration.

2.3.2 Summary of Scoping Comments

During the scoping period, government agencies and members of the public identified the following issues and concerns related to the Proposed Action and alternatives to be addressed in the EIS/EIR: (1) specify if the existing 8-inch pipeline will be held for future service; (2) provide information about the existing Calnev pipeline; (3) provide information about cathodic protection as a maintenance and safety measure; (4) provide detailed maps showing the Proposed Project area; and (5) implement and monitor all feasible measures needed to mitigate potential environmental impacts associated with the Proposed Project. Comments regarding the Proposed Project route and recommended route alternatives or changes are addressed in this section.

For the Proposed Action, the reasonable alternatives were determined based on the following sequence of events:

- A preliminary range of alternatives was developed by the lead NEPA and CEQA agencies considering (1) the specific information which the applicant provided in its plan of development for selection of the Proposed Action, (2) existing laws, policies and plans, (3) resource or community conflicts or conflicts with other past, present or future projects, (4) preliminary field visits by various agency personnel, and (5) information related to the two existing nearby pipelines.
- These preliminary alternatives were used by the agencies during public scoping, and revised to address additional route options suggested by the public or agencies during scoping. These route options were shared with cooperating and participating agencies and communities and further revised.
- Each potential route option was evaluated to determine if it had potential to achieve the Purpose and Need and the Project Objectives.
- Those route options with potential to meet the Purpose and Need were further reviewed to determine if they were technically feasible, and could reduce one or more environmental impacts.
- Technically feasible route options that were determined have the potential to achieve the Purpose and Need while substantially reducing impacts beyond other route options were carried forward in alternatives to the Proposed Action. The alternatives that were not determined to be technically feasible or which did not result in a further reduction to impacts were dismissed from further analysis.

Table 2-13 summarizes the changes that were proposed to Alternative 1 through this process. Table 2-13 also identifies which of the proposed changes were considered but eliminated from further consideration, and which were incorporated into Alternatives 2 and 3.

Table 2-13 Proposed Route Options

Agency, Organization, or Location of Individual that Suggested Route Option	Route Change and Description	Issues Addressed or Reason for Option	Milepost	Length (Miles)	Included in Alternatives	Figure Number	Mapping Code
Rialto Unified School District (RUSD)	**RUSD Change 1** From MP 2, west on Slover Ave. to Linden Ave, north on Linden Avenue to Baseline Road.	Align the 16 inch pipe with the 8 inch pipe and keep it on Linden Ave. so a pipeline does not run on Linden Ave. and Cactus Ave, which could cause the least impact to the District and its students.	MP 2 to MP 7	5	Considered but Eliminated	2-2	RUSD 1
RUSD	**RUSD Change 2** From MP 6, deviate for Project alignment by proceeding west on Foothill Blvd., north on Cedar Ave., west on Baseline Rd.	Avoid schools and maximize the number of future school sites available to the RUSD, including the airport/ Renaissance Project (planned to include a school)	Between MP 6 and MP 10	2	Alternatives 2 and 3	2-2	RI
City of Rialto California	**Rialto Change** From N. Fitzgerald Ave (east of MP 7), proceed west on Baseline Road to Alder Avenue, north on Alder Avenue to Casmalia Street, east on Casmalia Street to Locust Avenue, to N. Riverside Ave., reconnecting with the Project alignment north of MP 10	Alternative pipeline alignment to avoid planned land uses at airport, existing residential and commercial areas	MP 7 to MP 10	5	Alternatives 2 and 3	2-2	RI
Rialto, California Resident	**Straight Through Rialto Route Change** Variation proceeds west on Slover Ave, north on Linden Ave/parallel to 8" pipeline.	Avoid zigzag route through City of Rialto California. Consider a straight line route instead of the proposed zigzagging all over the City of Rialto, it seems safer.	MP 0 to MP 11	11	Considered but Eliminated	2-2	RUSD 1

Table 2-13 Proposed Route Options

Agency, Organization, or Location of Individual that Suggested Route Option	Route Change and Description	Issues Addressed or Reason for Option	Milepost	Length (Miles)	Included in Alternatives	Figure Number	Mapping Code
RialtoCalifornia Resident	**Avoid Linden Ave. Change** Please run the new pipeline on a alternate route, like Alder or Locust instead of right up Linden Ave.	Avoid Linden Ave, Rialto California	MP 2 to MP 11	9	Not included in any alternative. The recommendation to use Alder or Locust through Rialto was not adopted. However, the general issue (avoid Linden) is included in Alternatives 2 and 3	2-2	SL
5 Rialto, California Residents	**Slover/Locust Ave. Change** West on Slover Ave. to Locust Ave., north on Locust Ave. to Riverside Ave., southeast on Riverside Ave, to N. Linden Ave (reconnects with applicant's proposed alignment). Another possible route could be by Cactus Rd. to Alder Ave, up again, to avoid highly populated areas. Just go to Locust Ave. and continue north.	Avoid developed, residential and populated areas	MP 2 to MP 9	7	Not included in any alternative. The recommendation to use Alder or Locust through Rialto was not adopted. However, the general issue (avoid developed areas) is included in Alternatives 2 and 3	2-2	SL
Rialto, Calfornia Resident	**Avoid Bloomington Ave. Route Change**	Avoid Bloomington Ave. to avoid Bloomington Christian Elementary and High schools on the street.	MP 3 to MP 4	1	Considered but Eliminated	2-2	Proposed Project

Table 2-13 Proposed Route Options

Agency, Organization, or Location of Individual that Suggested Route Option	Route Change and Description	Issues Addressed or Reason for Option	Milepost	Length (Miles)	Included in Alternatives	Figure Number	Mapping Code
Rialto,California Resident	**Avoid crossing Rialto Airport/Renaissance Project Change**. Evaluate a route that places the new 16" line adjacent to the existing 8 inch line on Linden Ave.	Avoid crossing the existing airport/Renaissance project because it would prohibit the placement of a school in that area. Same RUSD 1 Variation	MP 7 to MP 9	2	Alternatives 2 and 3 include the avoidance of the Airport and Renaissance Project. However, they do this by going even further west than suggested.	2-2	RUSD 1
Rialto California Resident	**Ayala Dr. Schools and Parks Change** From MP 7, proceed east on Baseline Drive, to Linden Ave, north on Linden Ave, to connect with Project alignment at MP 9	Re-route the proposed pipeline going north, away from Linden Av. residential and educational areas to avoid schools and parks in Rialto California The RUSD's Cactus/Foothill/ Baseline/Locust. Variation accomplishes this objective.	MP 7 to MP 9	2	Alternatives 2 and 3 include the avoidance of Ayala Drive. However, they do this by going even further west than suggested.	2-2	LI
Applicant	**Bloomington Change** West of MP 3, divert from Project alignment and proceed north and northwest on Vine St. to Bloomington Ave, northeast on Bloomington Ave. to reconnect with Project alignment, just north of MP 4.	Bloomington route is shorter than the proposed Project in this area.	MP 3 to MP 4	1	Alternative 2	2-2	**BL**

Table 2-13 Proposed Route Options

Agency, Organization, or Location of Individual that Suggested Route Option	Route Change and Description	Issues Addressed or Reason for Option	Milepost	Length (Miles)	Included in Alternatives	Figure Number	Mapping Code
Applicant	**Linden Ave and Laurel Ave. Change** From W. Baseline Road/Ayala Dr., divert from Project t and proceed west on W. Baseline Rd. to N. Linden Ave., north on N. Linden Ave, through former Rialto Municipal Airport property to W. Highland Ave. (SH 30). West on W. Highland Ave (SH 30) to N. Locust Ave., north on N. Locus Ave. to Riverside Ave., southeast on Riverside Ave. to reconnect with Project alignment at intersection of Riverside Ave/N. Linden Ave.	Avoid former Rialto Municipal Airport property/planned Renaissance Redevelopment	MP 7 to MP 11	~4	Alternatives 2 and 3 include the avoidance of the Airport and Renaissance Project. However, they do this by going even further west than suggested.	2-2	LI
Applicant	**Easton-Locust** Diverts from Alt. 2 (Rialto Change) at Alder Ave./, proceeds on W. Easton to Locust Ave., proceeds north on Locust Ave, across the 210 Freeway at West Casmalia and reconnects with Alternative 2(RI Change)		Between MP 7 and 10		Not included in any alternative. The recommendation to use Easton to cross back to Locust south of the freeway has no advantage over using Casmalia to cross back north of the freeway.	2-2	LA

Table 2-13 Proposed Route Options

Agency, Organization, or Location of Individual that Suggested Route Option	Route Change and Description	Issues Addressed or Reason for Option	Milepost	Length (Miles)	Included in Alternatives	Figure Number	Mapping Code
Applicant	**Wagon Train Road Change** From North Cajon Blvd. at MP 24, divert from Project alignment and proceed north west, cross to west side of I-15 just south of the southern terminus of Wagon Trail Road, and cross back over I-15 to reconnect with Project alignment.	To avoid/reduce impacts to riparian habitat west of I-15. Identified at request of USFS.	MP 24 to MP 25	1.3	Alternatives 2 and 3	2-3	WT
Applicant	**Box Culvert Change** From North Cajon Blvd. at MP 24, divert from Project alignment and proceed north west across I-15, proceed along Wagon Train Road, across SR 138, where it reconnects with Project alignment, where the Project alignment crosses to west side of I-15, north of SR 138.	To avoid/reduce impacts to riparian habitat west of I-15. Identified at request of USFS. This option would utilize a large box culvert beneath highway to cross I-15.	MP 24 to MP 25	0.1	Considered but Eliminated	2-3	BC

Table 2-13 Proposed Route Options

Agency, Organization, or Location of Individual that Suggested Route Option	Route Change and Description	Issues Addressed or Reason for Option	Milepost	Length (Miles)	Included in Alternatives	Figure Number	Mapping Code
Oak Hills, CA Resident	**Avoid Baldy Mesa Elementary School and Quail Valley Middle School Change** Just south of MP 34, deviate from Project alignment along Baldy Mesa Rd. by proceeding east on Phelan Rd. to Braceo St., north on Braceo St. to Valencia St., west on Valencia St. to reconnect with Applicant's proposed alignment on Baldy Mesa Rd., between MP 35 and MP 36	Avoids Baldy Mesa Elementary and Quail Valley Middle Schools	MP 34 to MP 35	1.5	Alternative 2	2-4	BE
Applicant	**Mojave River 2 Change** Between MP 53 and MP 54, divert from Project alignment and follow alignment of ex. 14" pipeline across Mojave River to reconnect with Project alignment near Peso Court.	Follow existing ROW	MP 54 to MP 55	0.9	Considered but Eliminated	2-5	MR
Applicant	**Zzyzx Change** North of MP 137, divert from Project alignment and proceed northeast and then east on Arrowhead Road, following alignment of existing 8 inch and 14 inche pipelines; reconnect with Project just south of MP 139.	Follow existing right-of-way	Between MP 137 and MP 138	1.9	Alternatives 2 and 3	2-12	ZX

Table 2-13 Proposed Route Options

Agency, Organization, or Location of Individual that Suggested Route Option	Route Change and Description	Issues Addressed or Reason for Option	Milepost	Length (Miles)	Included in Alternatives	Figure Number	Mapping Code
Applicant	**Baker Change** North of MP 141, divert from Project alignment and proceed northeast to just west of I-15, continue along Baker Blvd. to the intersection of Death Valley Road/Baker Blvd.	Avoid potential conflicts with other utilities in the area and/or sensitive environmental conditions that could be discovered during project design	MP 141 to MP 146	3.8	Alternative 2	2-13	BA
Applicant	**Alternative location for Silver Lake Pump Station** Move location of pump station to MP-147.	Avoid potential conflicts with future planned expansion of the SCE switchyard, and place pump station further from school.	MP 147		Alternatives 2 and 3	2-13	
City of Henderson	**South Clark County Utility Corridor Change** Align the pipeline ROW with the Utility and Transportation Corridor, generally east of and parallel to I-15 between MP 206 and MP 222.	Comply with existing land use regulations of Clark County	MP 206 to MP 222		Considered but Eliminated	2-18 and 2-19	
Las Vegas, Nevada Resident	**Avoid east side of Valley View Street Change** Construct new McCarran Lateral on the west side of S. Valley View Blvd. in Las Vegas, Nevada.	Avoid construction on east side of Valley View Street, Las Vegas, Nevada	Between MP 232 and MP 233	1	Considered but Eliminated	2-20	Proposed Project

Table 2-13 Proposed Route Options

Agency, Organization, or Location of Individual that Suggested Route Option	Route Change and Description	Issues Addressed or Reason for Option	Milepost	Length (Miles)	Included in Alternatives	Figure Number	Mapping Code
Applicant	**Construct new lateral and new junction at Sunset** In place of extending the Proposed pipeline to Bracken Junction, developed new junction at Sunset, and construct new lateral across I-15 along Sunset.	Avoid use of small-diameter lateral between Bracken Junction and McCarran Terminal, and avoid need to construct lateral near casinos.	MP 232	3	Alternatives 2 and 3	2-20	

2.4 Alternative 2 – Modified Route Alternative

Alternative 2 is a compilation of several changes to the proposed action suggested by the public, local jurisdictions, the applicant, agencies, and other organizations during scoping and during subsequent agency and jurisdictional consultations. The changes are intended to avoid localized impacts to particular sensitive resources, reducing the environmental impact to the resource from the Proposed Action. The changes proposed to address impacts to one sensitive resource may result in increased impacts to other sensitive resources, as identified in the impact evaluations in Chapter 3. Although Alternative 2 is made up of several changes to the proposed action, it includes parts of Alternative 1 where no changes have been identified. The route considered as part of Alternative 2 is summarized in Table 2-14.

For Alternative 2, construction procedures and materials; operation, maintenance, and safety; and the pipeline's projected lifespan (Sections 2.2.3, 2.2.4, and 2.2.5, respectively) would be the same as described for the Proposed Action (Alternative 1). The locations where Alternative 2 diverges from the Proposed Action can be found in Figures 2-2 through 2-20. With the exception of the Silver Lake Pump Station (see Figure 2-13) and the Sunset Junction (Figure 2-20), Alternative 2 would not alter the location of existing or proposed aboveground facilities or laterals.

Bloomington Alternative (MP-3 to MP-4)

Instead of following West Valley Boulevard and then north along South Cactus Avenue, the pipeline route would cut directly northeast along Bloomington Avenue to South Cactus Avenue. The resulting route would be slightly shorter than the proposed route.

Rialto Alternative (MP-6 to MP-10)

The Rialto Alternative would include routing options designed to minimize impacts to:

- Planned land uses
- Existing schools while maximizing the number of future sites available to the Rialto Unified School District
- Existing residential and commercial areas
- The Renaissance Redevelopment Project

In order to minimize these impacts, the Rialto Alternative_would diverge from the Proposed Project route at MP 6 and continue west on West Foothill Boulevard. The route would then turn north on Cedar Avenue, west on Baseline Avenue, north on Alder Avenue, east on Casmalia Street, north on Locust Avenue, and southeast on Riverside Avenue before reconnecting with the pipeline at MP 10.4 (Figure 2-2). Multiple options were considered within this overall change, including proceeding north along Linden Avenue or Laurel Avenue, and following Easton south of the freeway instead of Casmalia north of the freeway. However, the alternative route selected for evaluation provided the most effective route for avoidance of the developed areas.

Table 2-14 Alternative 2: New Pipeline Description

Beginning MP	Ending MP	Location Name	Miles Adjacent to Existing Calnev System	Miles Not Adjacent to Existing Calnev System	Miles Adjacent to Road	Miles Adjacent to Powerline	Miles Adjacent to Railroad	Miles with no Parallel Linear Feature
0	2.1	Slover Ave	2.1		2.1			
2.1	3.0	Magnolia to Cedar to corner of Cedar and West Valley		0.9	0.9			
3.0	**4.2**	**North on Cedar to Bloomington, and northeast on Bloomington Avenue**		**0.5**	**0.5**			
4.2	6.0	Cactus Avenue		1.8	1.8			
6.0	**10.3**	**Rialto Alternative (Foothill – Cedar – Baseline – Alder – Casmalia – Locust – Riverside)**		**7.0**	**7.0**			
10.3	12.2	Lytle Creek Crossing	1.9					
12.2	15.2	Glen Helen Park		3.0				3.0
15.2	16.2	Glen Helen Road		1.0	1.0			
16.2	16.7	Cross Cajon Wash		0.5				0.5
16.7	20.4	Cajon Blvd	3.7		3.7			
20.4	24.2	Cajon Blvd		3.8	3.8			
24.2	24.9	Cross Cajon Wash		0.7				0.7
24.9	**25.6**	**Wagon Train HDD and Wagon Train Road**		**0.7**	**0.4**			**0.3**
25.6	26.5	USFS Fire Road		0.9	0.9			
26.5	28.5	Cajon Pump Station Area	2.0					
28.5	28.7	Baldy Mesa Peak-South		0.2				0.2
28.7	29.6	Baldy Mesa Peak-North	0.9					
29.6	33.9	Various Streets in Victorville/Adelanto area	4.3		4.3			
33.9	**35.1**	**Phelan Road (Baldy Mesa alternative around Elementary School)**		**2.0**	**2.0**			
35.1	53.5	Baldy Mesa Road to Bear Valley Road to Route 395	18.4		18.4			
53.5	54.3	Mojave River Crossing and Uplands		0.8				0.8
54.3	54.7	Peso Court		0.4	0.3			0.1

Table 2-14 Alternative 2: New Pipeline Description

Beginning MP	Ending MP	Location Name	Miles Adjacent to Existing Calnev System	Miles Not Adjacent to Existing Calnev System	Miles Adjacent to Road	Miles Adjacent to Powerline	Miles Adjacent to Railroad	Miles with no Parallel Linear Feature
54.7	75.6	Mojave River to Lenwood	20.9					
75.6	77	Various roads in Lenwood		1.4	1.1			0.3
77	77.3	Cross Country		0.3				0.3
77.3	90.4	Lenwood to Yermo	13.1					
90.4	91.4	West Yermo	1.0				1.0	
91.4	93.3	Yermo Area	1.9		1.9		1.9	
93.3	96.5	Yermo Area	3.2				3.2	
96.5	116.5	Yermo and Cady Roads		20.0	20.0			
116.5	137.4	Dunn to Zzyzx Rd	20.9					
137.4	**138.2**	**Cross through wash at Zzyzx**	**0.8**					
138.2	141.2	Cross Country West of Baker		3.0				3.0
141.2	**145.3**	**Baker Area**		**3.5**	**2.5**	**1.0**		
145.3	146.3	Nickle Mnt Road		1.0	1.0	1.0		
146.3	154	Baker Area		7.7		7.7		
154	157.8	Cross Country to Halloran Springs		3.8				3.8
157.8	198.4	Halloran Springs to Primm area	40.6					
198.4	203	Primm area to north of Jean	4.6				4.6	
203	205	Primm area to north of Jean	2.0					
205	209	Primm area to north of Jean	4.0				4.0	
209	210.5	Primm area to north of Jean	1.5					
210.5	211.4	Primm area to north of Jean	0.9				0.9	
211.4	217.1	Las Vegas Blvd		5.7	5.7			
217.1	222.9	Las Vegas Blvd	5.8		5.8			
222.9	226.9	Various Streets in Las Vegas		4.0	4.0			
226.9	232.0	Valley View	5.1		5.1			
232.0	**233.4**	**Sunset Lateral to McCarran**		**2.8**	**2.8**			
		Total Length Alternative 2 = 237.0	**159.6**	**77.4**	**94.1**	**9.7**	**15.6**	**13.0**

Note:
Segments in **bold** are variations from the Proposed Route in Alternative 1

Wagon Train Road Alternative (MP-25)

The Wagon Train Road Alternative would divert from the Proposed Project route at MP 24 at North Cajon Boulevard and proceed northwest, crossing the west side of I-15 just south of the southern end of Wagon Train Road (Figure 2-3). Interstate 15 would be crossed using a HDD bore from railroad property west of the interstate to an abandoned lot on the east side of the interstate. Staging areas for stringing the pipe as well as the HDD pits would be contained within these two parcels. The alternative route would continue to follow Wagon Train Road before going back over State Highway 138 to reconnect with the pipeline at MP 25 (Figure 2-3).

The Wagon Train Road Alternative would shorten the length of the pipeline portion of the Proposed Project by two tenths of a mile (0.2 mile) while avoiding impacts to six acres of riparian habitat within the San Bernardino National Forest. Using an HDD of this length to cross I-15 would require additional staging areas to facilitate pipe installation, as well as additional work crews. Selection of this route would require a new geotechnical study to ensure that the route is constructable.

Phelan Road/Baldy Mesa Alternative (MP-34 to MP-35)

This alternative would route the pipeline along surface streets through a residential neighborhood to avoid placing the proposed pipeline along Baldy Mesa Road directly in front of the Baldy Mesa Elementary School and Quail Valley Middle School.

Zzyzx Alternative (MP-137 to MP-139)

The Applicant's Proposed Project in this area diverted from the route of the existing pipelines in order to avoid constructing the proposed pipeline within an active wash. This alternative would include placing the proposed pipeline in the existing right-of-way with the existing pipeline, within the wash.

Baker Alternative (MP-142 to MP-145)

To avoid potential conflicts with existing utilities in the area, the alternative route through Baker would divert from the Proposed Project alignment at MP 141, proceed northeast to just west of I-15, and continue along Baker Boulevard to the intersection of Death Valley Road/Baker Boulevard.

Silver Lake Pump Station Alternative (MP-147)

To avoid potential conflicts with SCE's planned expansion of their substation at this location, and to move the pump station to a location more distant from a school, the proposed pump station would be located approximately 2000 feet away from its Proposed location. This distal location would require construction of 2000 feet of transmission lines to connect the pump station to the switchyard.

Sunset Lateral to McCarran and Sunset Junction Alternative (MP-232 to MP-233)

The Applicant considered several alternatives for the construction of a lateral line from the main pipeline along Valley View Boulevard across Interstate 15 to McCarran Airport. These options included using the existing lateral from Bracken Junction to McCarran along Hacienda, constructing a new lateral across Interstate 15 along Russell, and constructing a new lateral across Interstate 15 along Sunset. Either the Russell or Sunset options would also include construction of a new junction at the intersection of that road and Valley View Boulevard. Because the length and impacts of the Sunset and Russell options are the same, and there is an existing lot at the corner of Sunset and Valley View which can be used for the new junction, the Sunset option has been included in Alternative 2.

A new junction, the Sunset Junction site, would be constructed at the intersection of Sunset Road and Valley View Boulevard in Las Vegas (Figure 2-20). The new junction would include valves and pig launchers/receivers to monitor and clean the new and existing pipelines. It would also have a small structure, requiring power and communications, similar to the building at the existing Bracken Junction at Valley View and Hacienda, to house SCADA equipment. The existing Bracken Junction (Figure 2-20) would be modified by removing piping systems and valves that would not be required due to the installation of the new Sunset Junction. The existing power, communications, and cathodic protection systems would remain in place.

2.5 Alternative 3 - Agency Preferred (NEPA) and Environmentally Superior Alternative (CEQA)

The environmental impacts of the routes for Alternatives 1 and 2 are evaluated in Chapter 3 of this EIS/EIR. Based on the results of that analysis, the route which would present the least net environmental impact was developed as Alternative 3, which is the agency preferred alternative under NEPA for the BLM, and the Environmentally Superior Alternative for the County under CEQA.

Of the eight potential variations considered as part of Alternative 2, those selected for inclusion in Alternative 3 include:

- Rialto Alternative
- Wagon Train HDD Alternative
- Zzyzx Alternative
- Silver Lake Pump Station Alternative
- Sunset Lateral and Sunset Junction Alternative

Those not selected for inclusion in Alternative 3 include the Bloomington Alternative, the Baker Alternative through the town of Baker, and the Baldy Mesa Alternative around the Baldy Mesa Elementary School. In these areas, the original Proposed Route for the pipeline has been included in Alternative 3. The rationale for the development of Alternative 3 is presented in Section 2.7 below.

The route considered as part of Alternative 3 is summarized in Table 2-15. For Alternative 3, construction procedures and materials; operation, maintenance, and safety; and the pipeline's projected lifespan (Sections 2.2.3, 2.2.4, and 2.2.5, respectively) would be the same as described for the Proposed Action (Alternative 1).

Table 2-15 Alternative 3: New Pipeline Description

Beginning MP	Ending MP	Location Name	Miles Adjacent to Existing Calnev System	Miles Not Adjacent to Existing Calnev System	Miles Adjacent to Road	Miles Adjacent to Powerline	Miles Adjacent to Railroad	Miles with no Parallel Linear Feature
0	2.1	Slover Ave	2.1		2.1			
2.1	3.0	Magnolia to Cedar to corner of Cedar and West Valley		0.9	0.9			
3.0	6.0	Route through Rialto (West Valley – Cactus)		3.0	3.0			
6.0	**10.3**	**Rialto Alternative (Foothill – Cedar – Baseline – Alder – Casmalia – Locust – Riverside)**		**7.0**	**7.0**			
10.3	12.2	Lytle Creek Crossing	1.9					
12.2	15.2	Glen Helen Park		3.0				3.0
15.2	16.2	Glen Helen Road		1.0	1.0			
16.2	16.7	Cross Cajon Wash		0.5				0.5
16.7	20.4	Cajon Blvd	3.7		3.7			
20.4	24.2	Cajon Blvd		3.8	3.8			
24.2	24.9	Cross Cajon Wash		0.7				0.7
24.9	**25.6**	**Wagon Train HDD and Wagon Train Road**		**0.7**	**0.4**			**0.3**
25.6	26.5	USFS Fire Road		0.9	0.9			
26.5	28.5	Cajon Pump Station Area	2.0					
28.5	28.7	Baldy Mesa Peak-South		0.2				0.2
28.7	29.6	Baldy Mesa Peak-North	0.9					
29.6	53.5	Various Streets in Victorville/Adelanto area	23.9		23.9			
53.5	54.3	Mojave River Crossing and Uplands		0.8				0.8
54.3	54.7	Peso Court		0.4	0.3			0.1
54.7	75.6	Mojave River to Lenwood	20.9					
75.6	77	Various roads in Lenwood		1.4	1.1			0.3
77	77.3	Cross Country		0.3				0.3
77.3	90.4	Lenwood to Yermo	13.1					

Table 2-15 Alternative 3: New Pipeline Description

Beginning MP	Ending MP	Location Name	Miles Adjacent to Existing Calnev System	Miles Not Adjacent to Existing Calnev System	Miles Adjacent to Road	Miles Adjacent to Powerline	Miles Adjacent to Railroad	Miles with no Parallel Linear Feature
90.4	91.4	West Yermo	1.0				1.0	
91.4	93.3	Yermo Area	1.9		1.9		1.9	
93.3	96.5	Yermo Area	3.2				3.2	
96.5	116.5	Yermo and Cady Roads		20.0	20.0			
116.5	137.4	Dunn to Zzyzx Rd	20.9					
137.4	**138.2**	**Cross through wash at Zzyzx**	**0.8**					
138.2	144.1	Cross Country West of Baker		5.9				5.9
144.1	144.7	Baker Area		0.6		0.6		
144.7	146.3	Nickle Mnt Road		1.6	1.6	1.6		
146.3	154	Baker Area		7.7		7.7		
154	157.8	Cross Country to Halloran Springs		3.8				3.8
157.8	198.4	Halloran Springs to Primm area	40.6					
198.4	203	Primm area to north of Jean	4.6				4.6	
203	205	Primm area to north of Jean	2.0					
205	209	Primm area to north of Jean	4.0				4.0	
209	210.5	Primm area to north of Jean	1.5					
210.5	211.4	Primm area to north of Jean	0.9				0.9	
211.4	217.1	Las Vegas Blvd		5.7	5.7			
217.1	222.9	Las Vegas Blvd	5.8		5.8			
222.9	226.9	Various Streets in Las Vegas		4.0	4.0			
226.9	232.0	Valley View	5.1		5.1			
232.0	**233.4**	**Sunset Lateral to McCarran**		**2.8**	**2.8**			
		Total Length Alternative 3 = 237.5	**160.8**	**76.7**	**94.6**	**9.9**	**15.6**	**15.9**

Note:
Segments in **bold** are variations from the Proposed Route in Alternative 1

2.6 No Action Alternative (NEPA) and No Project Alternative (CEQA)

Under NEPA, the BLM must consider an alternative that assesses the impacts if the Proposed Project is not approved and the application is rejected. The No Action Alternative assumes that the existing 8- and 14-inch pipelines would continue to be operational at their maximum capacity, but that any additional needs would be provided by other means.

Calnev filed an application to the BLM for a ROW grant to expand its existing pipeline system. Calnev also submitted an application to the County of San Bernardino, California for an amendment to Kinder Morgan's franchise agreement and for a Conditional Use Permit. With the No Action/No Project Alternative, neither of these actions would be approved. A new petroleum products pipeline from Colton, California to Las Vegas, Nevada would not be constructed, and petroleum delivery operations in the region along the existing Calnev system would continue using the existing 8- and 14-inch pipelines. None of the potential environmental impacts identified in this EIS/EIR would occur.

However, with the No Action/No Project Alternative, the purpose and need considerations discussed in Section 1.3 of the Draft EIS/EIR would not be met. The anticipated fuel demand in Las Vegas, Nevada and the California High Desert resulting from growth in population and/or tourism would exceed the capacity of the existing Calnev system within the next few years. The current pipeline is at its maximum design capacity; adding additional pump stations cannot increase transport capacity. If this occurred, it is likely that demand would be met through delivery of fuel by rail or truck, options which were considered but eliminated from further consideration in Section 2.3.1.1.

2.7 Comparison of Alternatives

Table 2-16 presents a brief summary of the impacts identified for each resource area for the Proposed Project, Alternative 2, Alternative 3, and the No Action Alternative.

In addition to the four Alternatives discussed above, the Applicant has not finalized their source of water for the Proposed Project. The Applicant has proposed five water sources as part of their Proposed Project, but acknowledges that supply from two of these sources (the Baker Community Services District and the Molycorp Mine) may not be feasible. If supply from Baker and Molycorp are not feasible, the Applicant proposes to obtain their supply from the other three sources, which would increase the number and mileage of truck deliveries associated with the water supply. This increase in truck deliveries would affect only the air quality and transportation resource areas, so is not evaluated within the analyses of the other resources areas within Chapter 3.

The analysis of the air quality impacts associated with the increase in water deliveries in Section 3.6 concluded that the alternative water supply scenario would result in an increase in air emissions, and would therefore contribute further to adverse impacts to air quality. However, the increase in emissions would not cause additional exceedences of any thresholds, and would therefore not affect mitigation measures or regulatory requirements.

The analysis of transportation and traffic impacts associated with the increase in water deliveries in Section 3.16 concluded that the alternative water supply scenario would result in an increase in truck trips and total mileage on Interstate 15. It would also result in an increase in truck trips on secondary roads near the locations of the Mojave Water Agency and Las Vegas

Valley Water District supply locations. However, it would also eliminate any potential impacts associated with water truck trips at the Baker and Molycorp locations.

Table 2.16 Summary of Impacts by Alternative

Section #	Resource	Proposed Project/Proposed Action (Alternative 1)	Alternative 2 (Modified Route Alternative)	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
3.2	Topography/Geology/Geologic Hazards	Potential damage to pipeline, resulting in petroleum release.	Slightly longer route; reduced potential for pipeline damage by avoiding riparian area.	Slightly longer route; reduced potential for pipeline damage by avoiding riparian area.	Continued potential for damage to existing pipelines resulting from seismic events.
3.3	Soils	Potential erosion and loss of topsoil.	Slightly longer route; reduced potential for soil erosion and loss of topsoil by avoiding active wash and riparian area.	Slightly longer route; reduced potential for soil erosion and loss of topsoil by avoiding active wash and riparian area.	No impacts.
3.4	Energy and Minerals	No Impacts	No impacts.	No impacts.	No impacts.
3.5	Water Resources/Hydrology and Water Quality	Potential decrease in surface and groundwater quality, adverse effects to drainage, and flood, stream, and stormwater flows.	Reduced potential to impact stream flows/riparian area by using the Wagon Train HDD; slightly longer route would require slightly greater need for water during construction.	Reduced impacts associated with avoidance of the riparian area at the Wagon Train HDD; slightly longer route would require slightly greater need for water during construction.	Potential impacts to water resources resulting from leaks/spills from existing pipeline or truck/train delivery system.
3.6	Air Quality and Climate	Temporary impacts from increased air pollutant and greenhouse gas emissions from construction activities.	Slightly higher level of temporary construction emissions due to longer route, but avoids two sensitive receptors.	Slightly higher level of emissions than Alternatives 1 and 2.	Increase in fuel deliveries by truck and rail to meet demands would result in increased air pollutant and greenhouse gas emissions.
3.7	Biological Resources	Potential impacts to vegetation communities (including wetlands) and wildlife (including special status species) and potential to introduce invasive plants	Two alternative routes would have fewer impacts to biological resources, two other alternative routes would have slightly greater impacts; overall similar to Proposed Project.	No reduction in impacts from the Baker alternative but avoids disturbing 18 acres of previously undisturbed habitat through the Zzyzx alternative.	No impacts.
3.8	Cultural Resources	Potential impacts include damage to resources during construction. Impacts would be avoided or reduced through mitigation.	Different resources located in areas of different alternative routes. Potential impacts would be avoided or reduced through mitigation.	Different resources located in areas of different alternative routes. Potential impacts would be avoided or reduced through mitigation.	No impacts.

Table 2.16 Summary of Impacts by Alternative

Resource		Proposed Project/Proposed Action (Alternative 1)	Alternative 2 (Modified Route Alternative)	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
3.9	Paleontological Resources	Potential impacts include damage to resources during construction. Impacts would be mitigated.	Slightly longer route increases threats to unidentified resources. Impacts would be mitigated.	Slightly longer route increases threats to unidentified resources. Impacts would be mitigated.	No impacts
3.10	Lands and Realty	No impacts	No impacts	No impacts	No impacts
3.11	Special Management Area	Route would pass through SMAs, and would need to comply with SMA-specific measures.	No difference in passage of route through SMAs. Would need to comply with SMA-specific measures.	No difference in passage of route through SMAs. Would need to comply with SMA-specific measures.	No impacts.
3.12	Aesthetics and Visual Resources	Temporary impacts during construction. Permanent impact due to maintenance roads and long-term vegetation. Impacts would be mitigated.	Temporary impacts during construction. Permanent impact due to maintenance roads and long-term vegetation. Impacts would be mitigated.	Temporary impacts during construction. Permanent impact due to maintenance roads and long-term vegetation. Impacts would be mitigated.	No impacts
3.13	Noise	Temporary impacts during construction.	Temporary impacts during construction would be same as Proposed Project.	Temporary impacts during construction would be same as Proposed Project.	No impacts
3.14	Recreation	Temporary restriction of access during construction. Potential increase of access to previously undisturbed areas through new maintenance roads. Both impacts to be mitigated.	Would avoid some recreation areas (parks in Rialto), but could affect access to park in Las Vegas. Potential increase of access to previously undisturbed areas through new maintenance roads. Both impacts to be mitigated.	Would avoid some recreation areas (parks in Rialto), but could affect access to park in Las Vegas. Potential increase of access to previously undisturbed areas through new maintenance roads. Both impacts to be mitigated.	No impacts
3.15	Social and Economic Conditions	Beneficial impact through construction employment and increased taxes.	Beneficial impact through construction employment and increased taxes expected to be same as Proposed Project.	Beneficial impact through construction employment and increased taxes expected to be same as Proposed Project.	Would not have beneficial impact associated with Proposed Project or Alternatives 2 or 3.

Table 2.16 Summary of Impacts by Alternative

Resource		Proposed Project/Proposed Action (Alternative 1)	Alternative 2 (Modified Route Alternative)	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
3.16	Transportation and Traffic	Temporary impacts during construction would be mitigated. Would contribute to cumulative impact, requiring additional mitigation.	Temporary impacts during construction would be mitigated. Impacts may be higher due to location of Sunset Lateral Alternative route in Las Vegas.	Temporary impacts during construction would be mitigated. Impacts may be higher due to location of Sunset Lateral Alternative route in Las Vegas.	Increase in truck traffic associated with fuel deliveries would add to cumulative congestion problems.
3.17	Public Safety/Hazardous Materials	Potential damage to pipeline could result in petroleum release.	Slightly longer route and more circuitous route has increased potential for damage. Alternative would avoid proximity to schools in Rialto, Phelan Road/Baldy Mesa, and Baker.	Slightly longer and more circuitous route has increased potential for damage. Alternative would avoid proximity to schools in Rialto and Baker.	Continued potential for damage to existing pipelines would remain the same. Increase in truck and rail deliveries would increase potential for accidental releases.

References

Clark County. 2006. Clark County Blue Ribbon Commission to Improve the Reliability of Southern Nevada's Fuel Supply Summary Report. Adopted October 2006.

Clark County. 2005. Clark County Nevada South County Land Use Plan. Adopted December 21, 2005.

URS Corporation. 2007. Supplement to BLM Application for Right-of-Way Grant (Standard Form 299) for the Calnev Expansion Project, from URS Corporation. June 27, 2007.

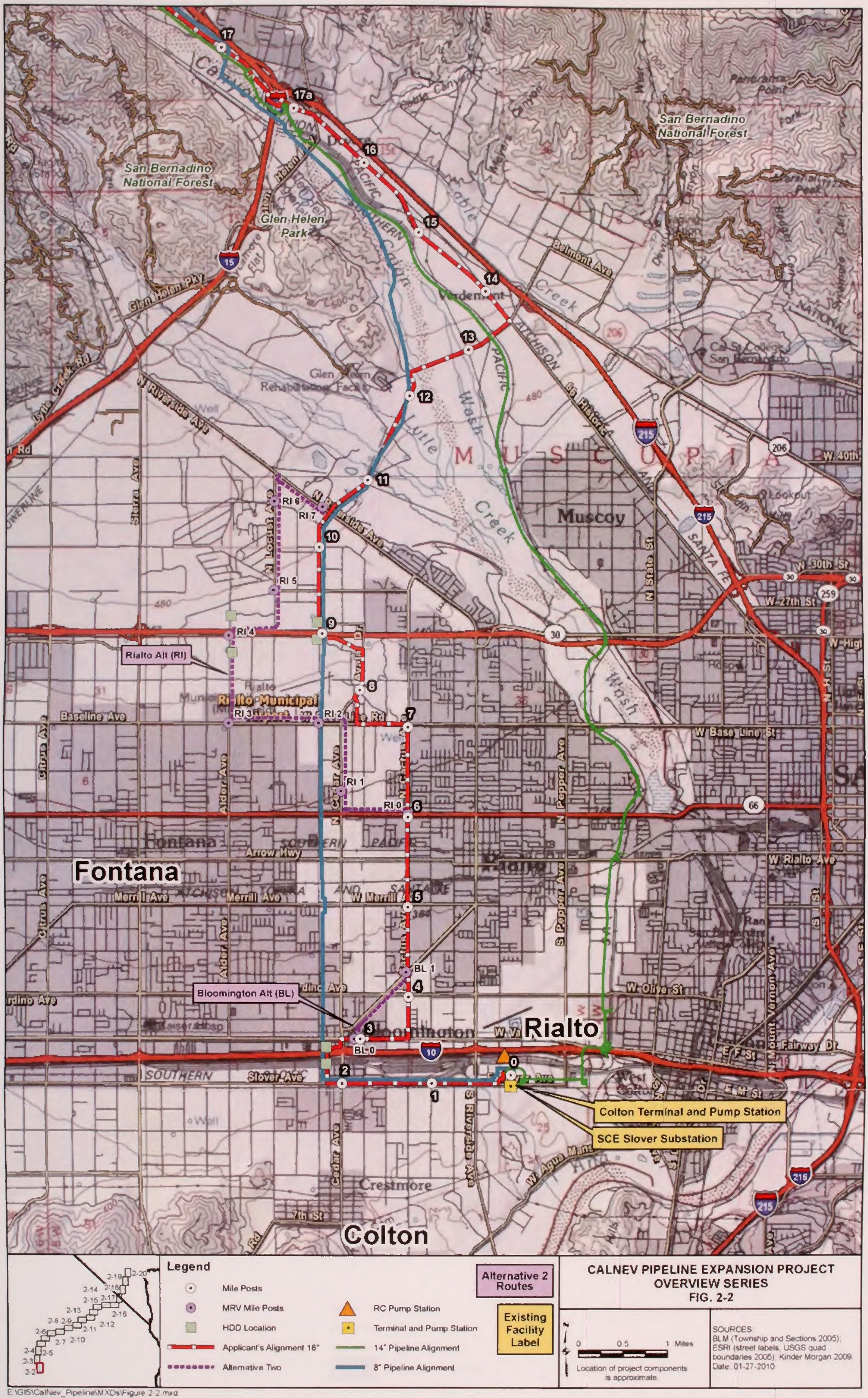
URS Corporation. 2008a. Memorandum from URS Corporation to Ecology and Environment, Inc, of requested project information: Rev B Maps. May 8, 2008.

URS Corporation. 2008b. Memorandum from URS Corporation to Ecology and Environment, Inc, of requested project information: Staging Areas. June 30, 2008.

URS Corporation. 2009. Memorandum from URS Corporation to Ecology and Environment, Inc, of requested project information. March, 2009.

URS Corporation. 2011a. Draft Groundwater Monitoring Plan. June, 2011.

URS Corporation. 2011b. Draft Water Management Plan. June, 2011.



CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-2

Location of project components is approximate.

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005); Kinder Morgan 2009.
Date: 01-27-2010

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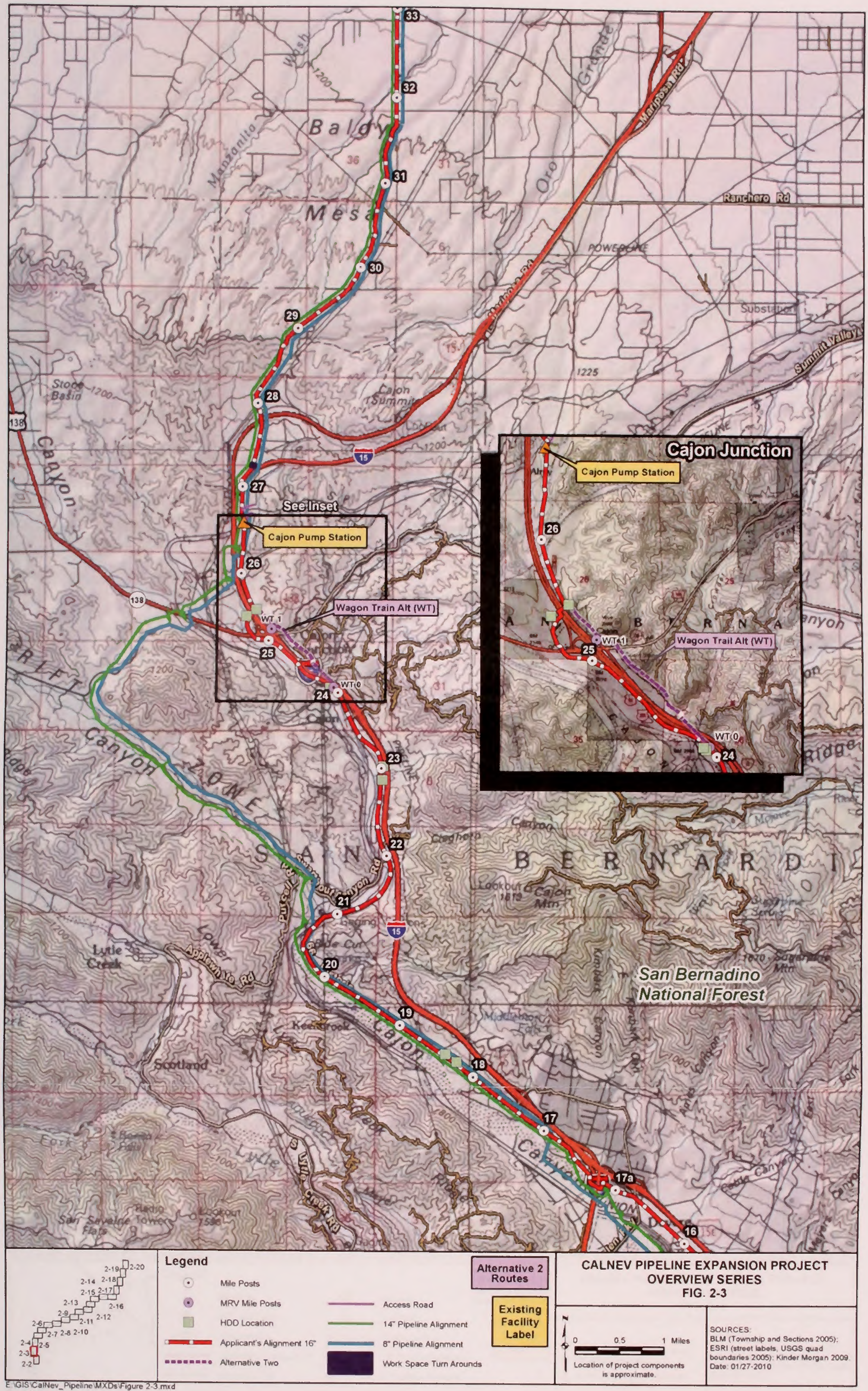
June 27, 2011



CALNEV PIPELINE EXPANSION PROJECT OVERVIEW SERIES FIG. 2-3

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005); Kinder Morgan 2009.
Date: 01/27-2010

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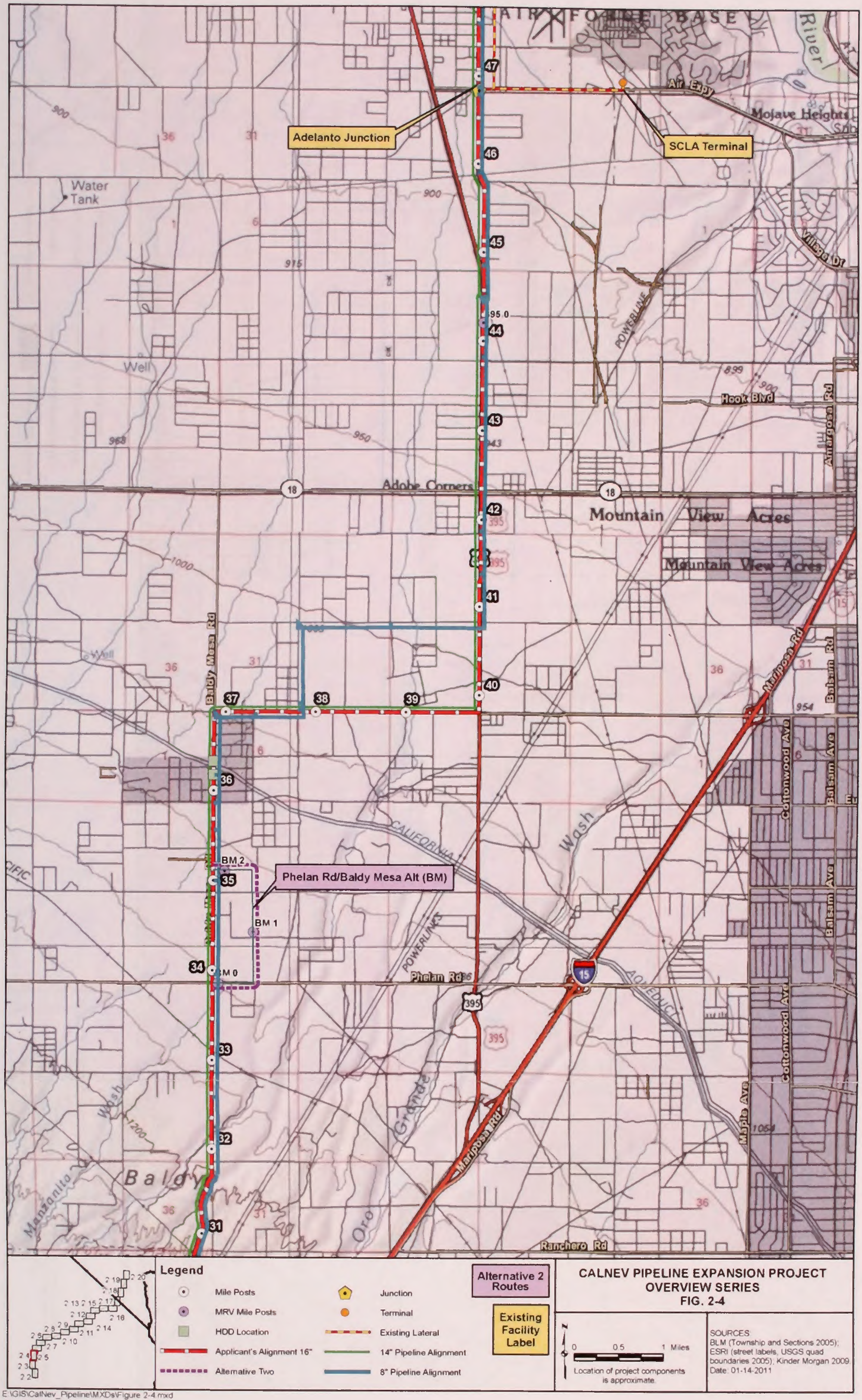
June 27, 2011



CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-4

Location of project components is approximate.

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005); Kinder Morgan 2009.
Date: 01-14-2011

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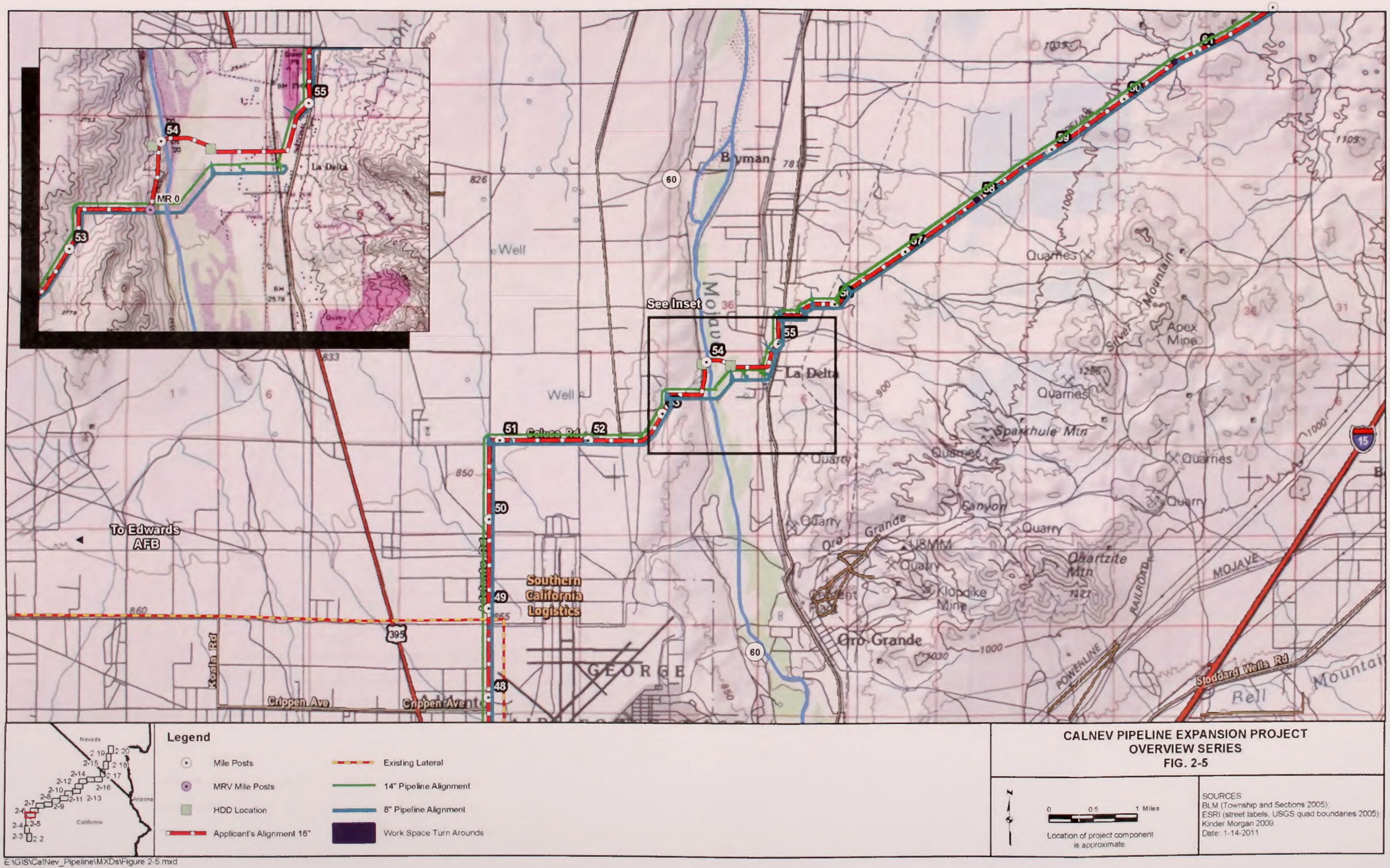
June 27, 2011



Legend

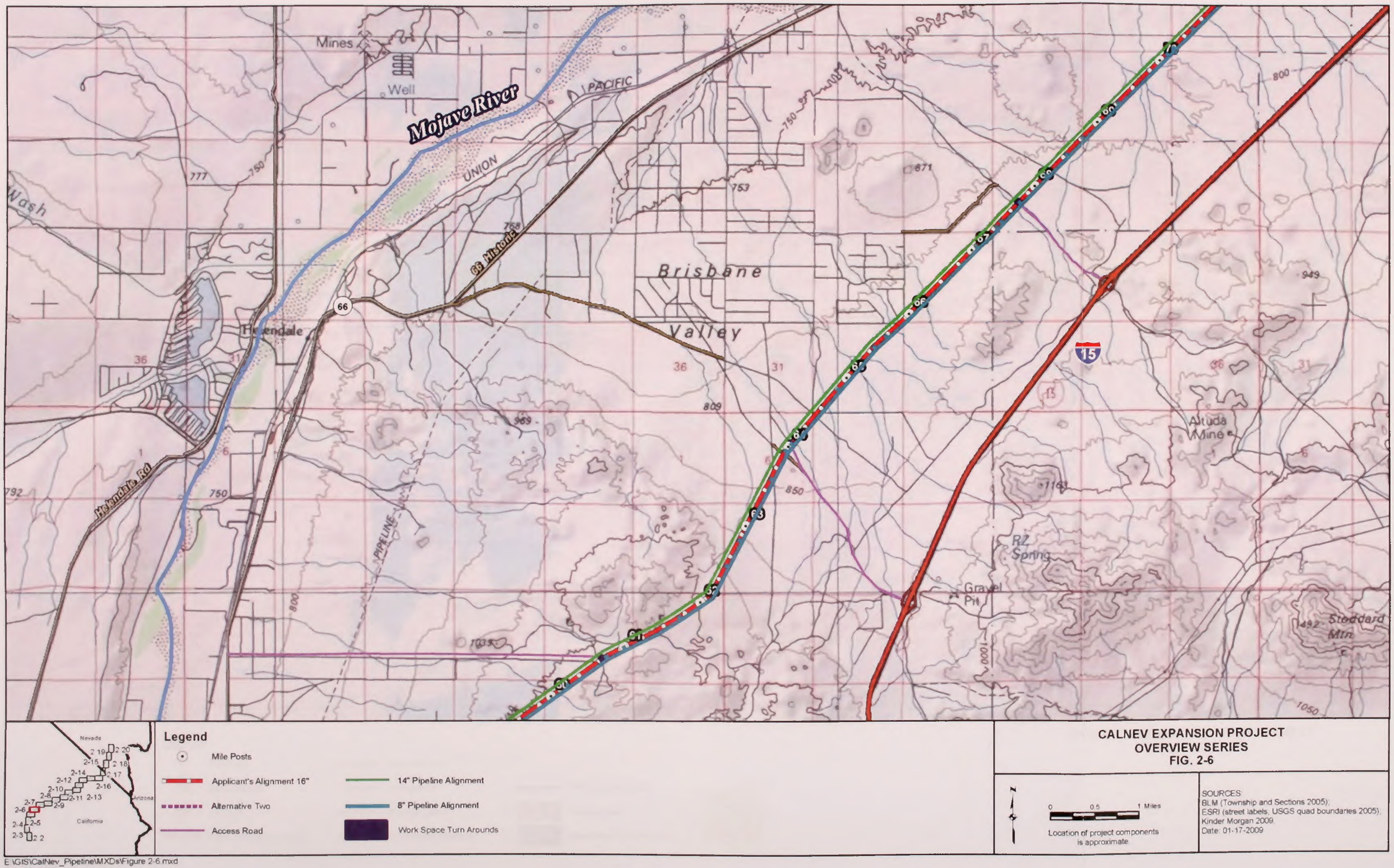
⊙	Mile Posts	🟧	Existing Lateral
●	MRV Mile Posts	🟩	14" Pipeline Alignment
🟩	HDD Location	🟦	8" Pipeline Alignment
🟥	Applicant's Alignment 16"	■	Work Space Turn Arounds

CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-5

Location of project component is approximate

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009
Date: 1-14-2011

E:\GIS\CalNev_Pipeline\MXDs\Figure 2-5.mxd
June 27, 2011



CALNEV EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-6

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009.
Date: 01-17-2009

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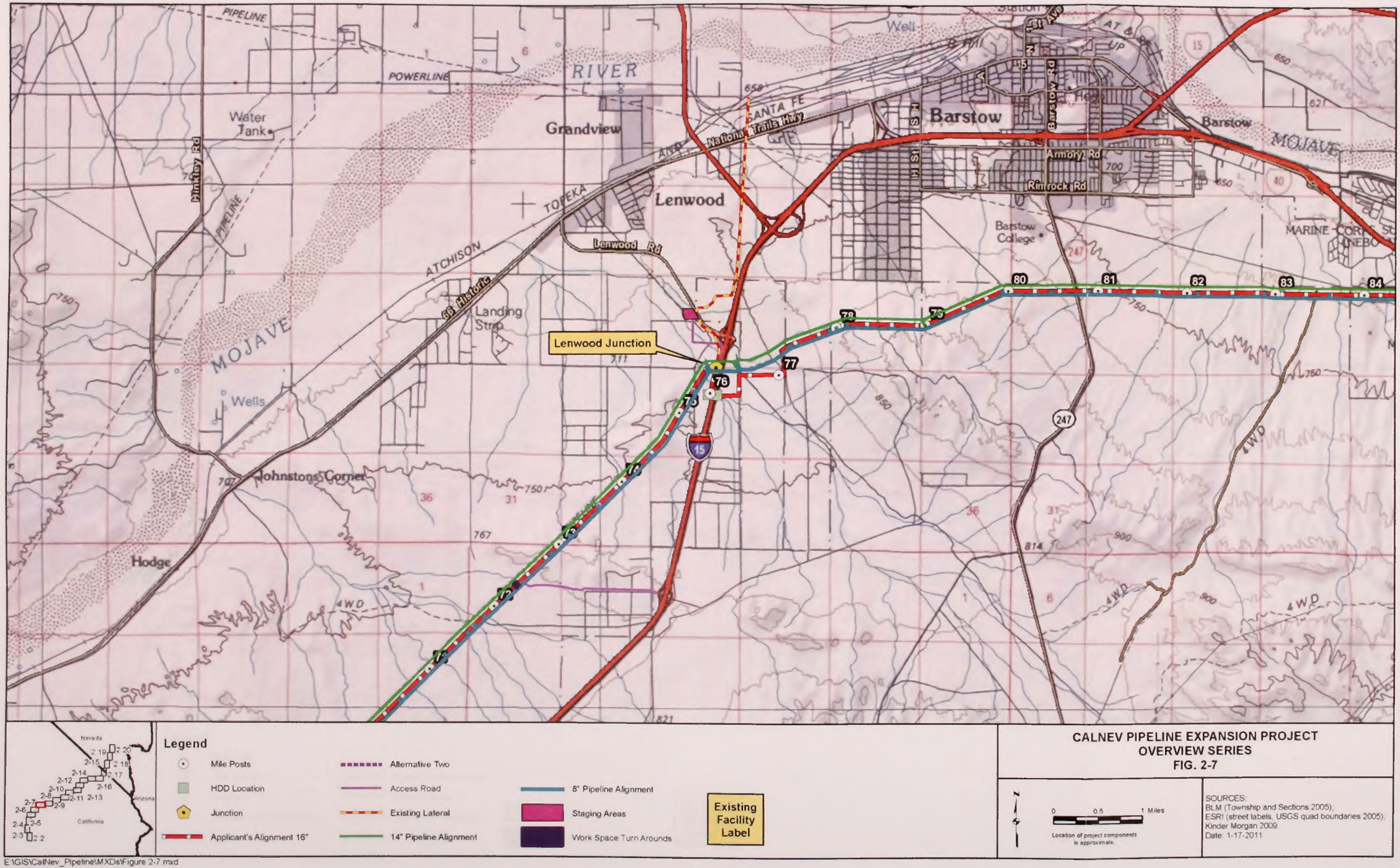
June 27, 2011



Legend

- ⊙ Mile Posts
- ▢ HDD Location
- ⬠ Junction
- Applicant's Alignment 16"
- Alternative Two
- Access Road
- Existing Lateral
- 14" Pipeline Alignment
- 8" Pipeline Alignment
- 🟪 Staging Areas
- ■ Work Space Turn Arounds
- Existing Facility Label

CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-7

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009.
Date: 1-17-2011

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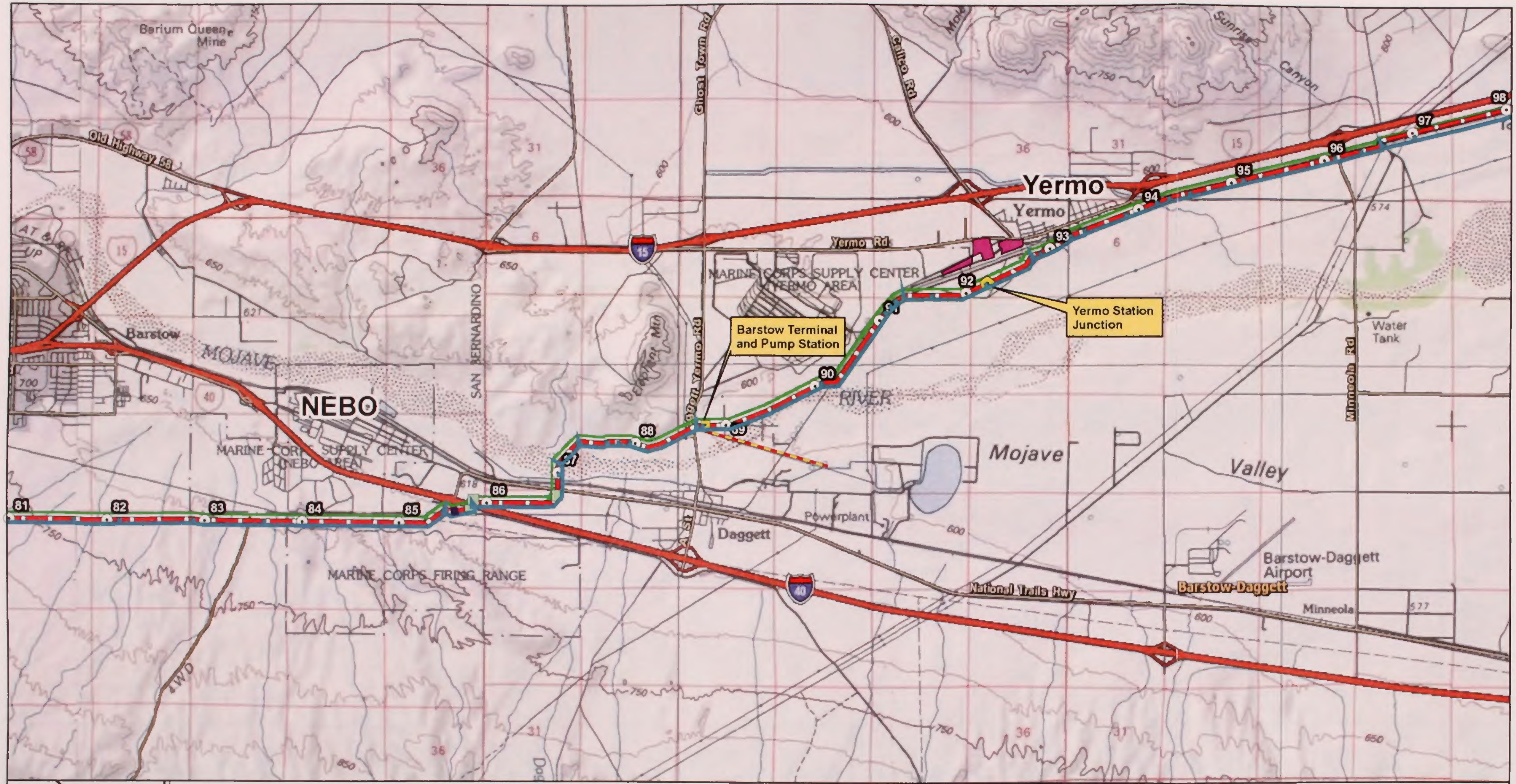
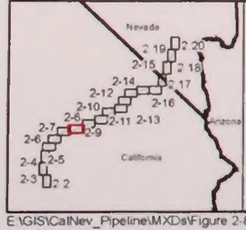
June 27, 2011





Legend

- ⊙ Mile Posts
- 🟩 HDD Location
- ⬠ Junction
- ▣ Terminal and Pump Station
- ▪▪▪▪ Alternative Two
- Applicant's Alignment 16"
- Existing Lateral
- 14" Pipeline Alignment
- 8" Pipeline Alignment
- 🟪 Staging Areas
- ■ Work Space Turn Arounds
- Existing Facility Label

CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-8

N

0 0.5 1 Miles

Location of project components is approximate.

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009
Date: 1-17-2011

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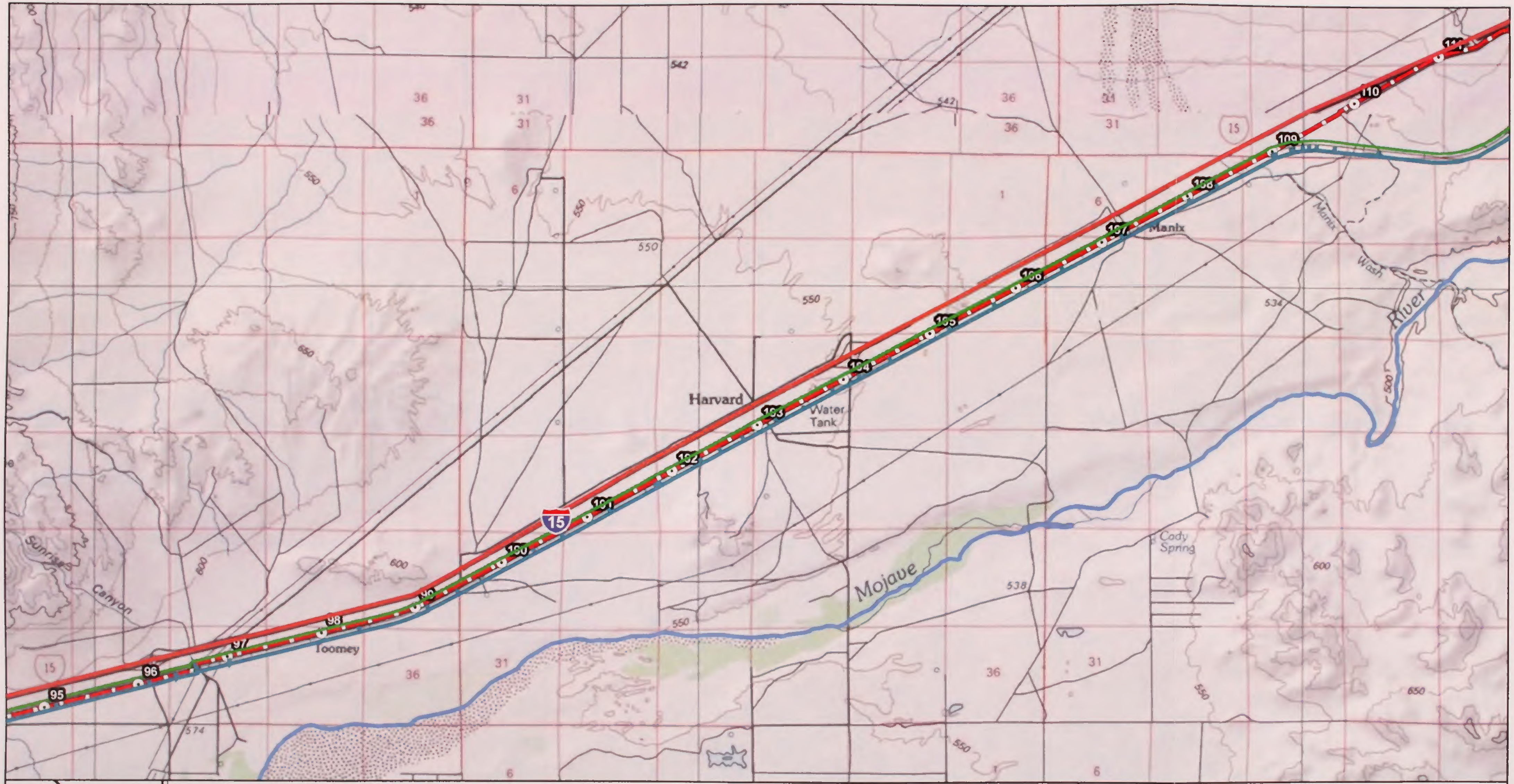
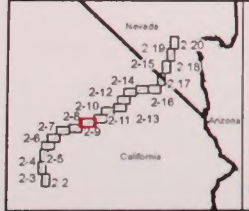
June 27, 2011





Legend

- ⊙ Mile Posts
- 🟥 Applicant's Alignment 16"
- ▪▪▪ Alternative Two
- 🟩 14" Pipeline Alignment
- 🟦 8" Pipeline Alignment

CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-9

N

0 0.5 1 Miles

Location of project components is approximate

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009
Date: 1-17-2011

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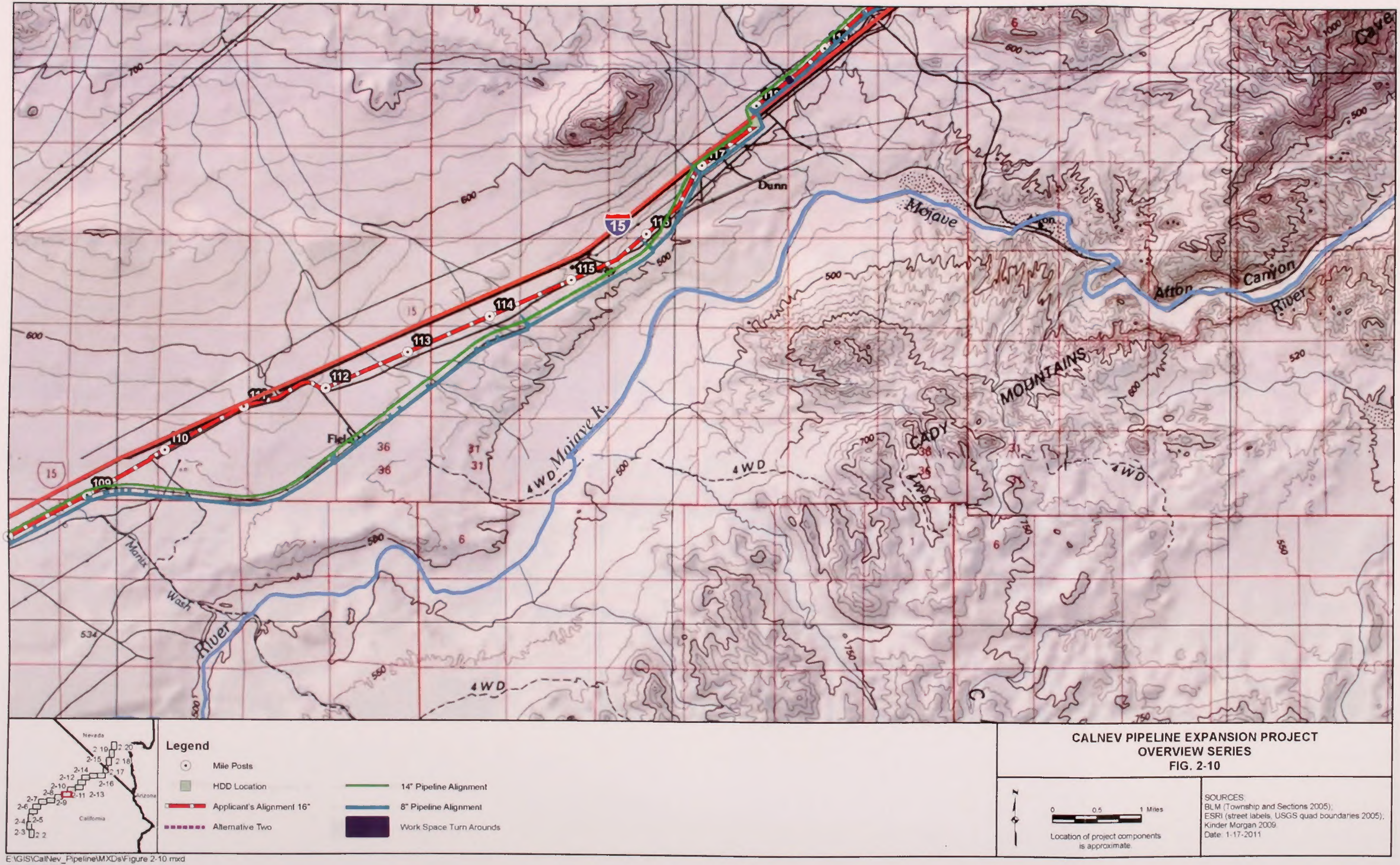
June 27, 2011



Legend

- ⊙ Mile Posts
- ▨ HDD Location
- Applicant's Alignment 16"
- Alternative Two
- 14" Pipeline Alignment
- 8" Pipeline Alignment
- ■ Work Space Turn Arounds

CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-10

N

0 0.5 1 Miles

Location of project components is approximate.

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009.
Date: 1-17-2011

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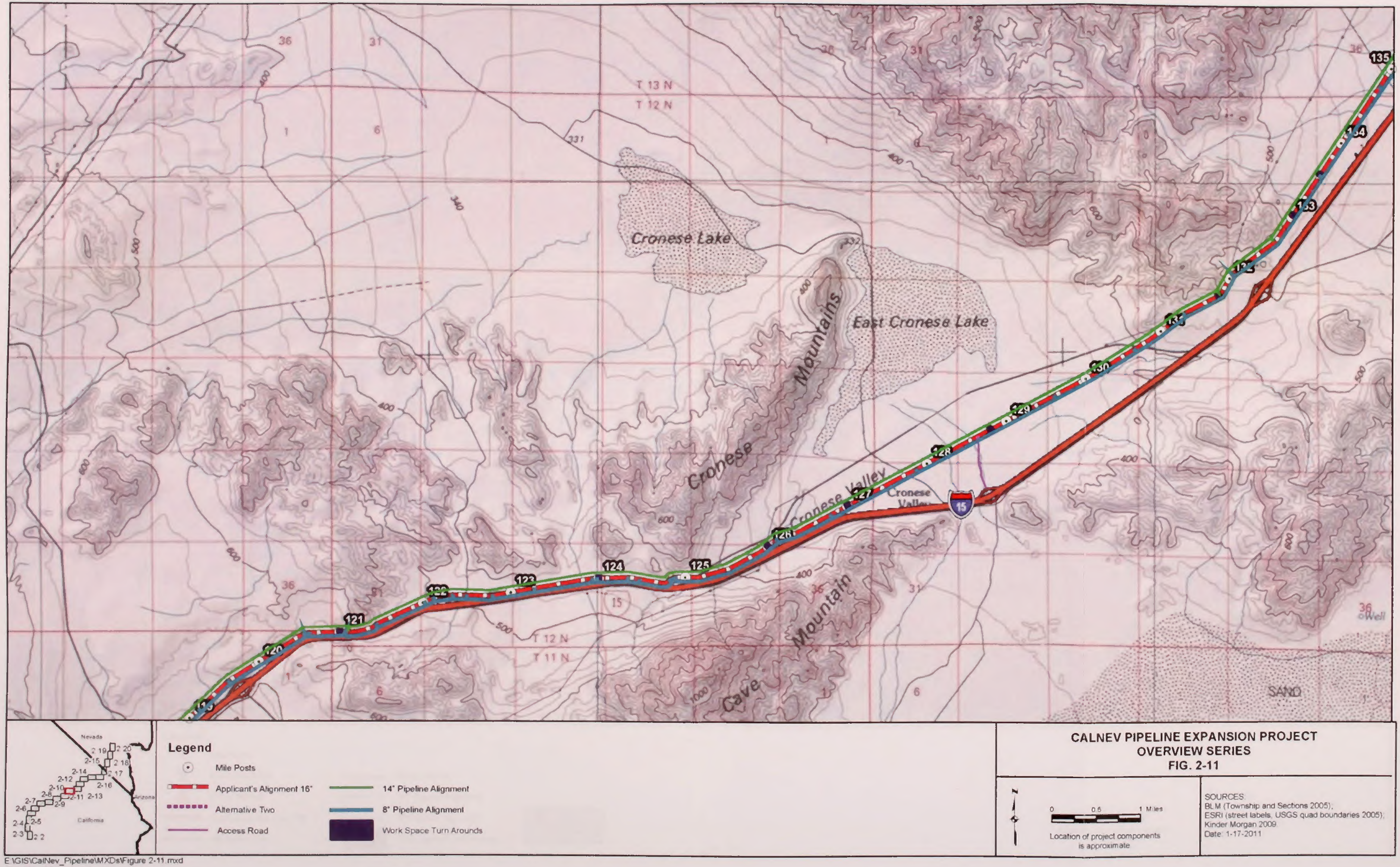
June 27, 2011



Legend

⊙ Mile Posts	
🟥 Applicant's Alignment 16"	🟩 14" Pipeline Alignment
▪▪▪ Alternative Two	🟦 8" Pipeline Alignment
— Access Road	■ Work Space Turn Arounds

CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-11

N

0 0.5 1 Miles

Location of project components is approximate

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009.
Date: 1-17-2011

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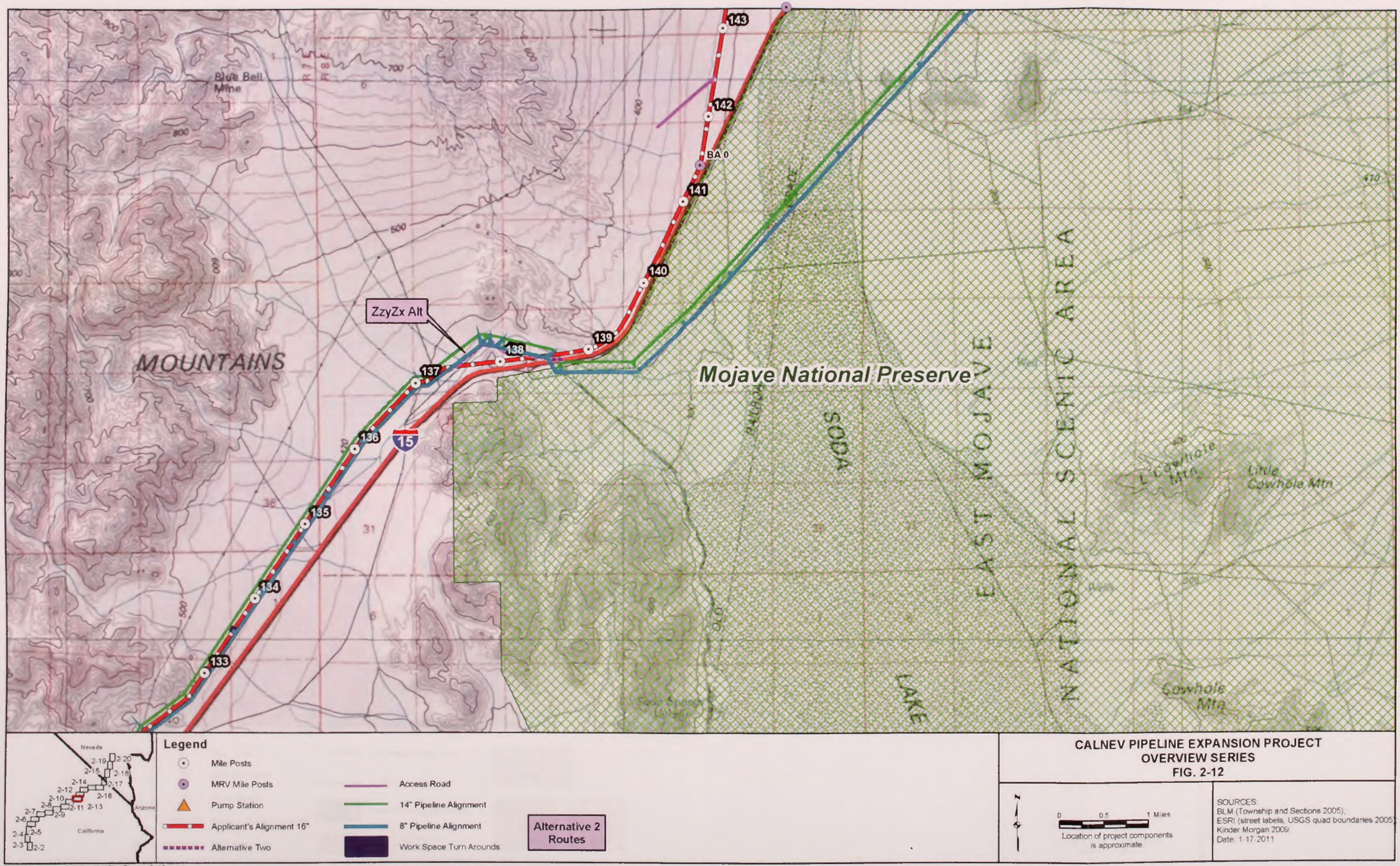
June 27, 2011



CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-12

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009.
Date: 1-17-2011

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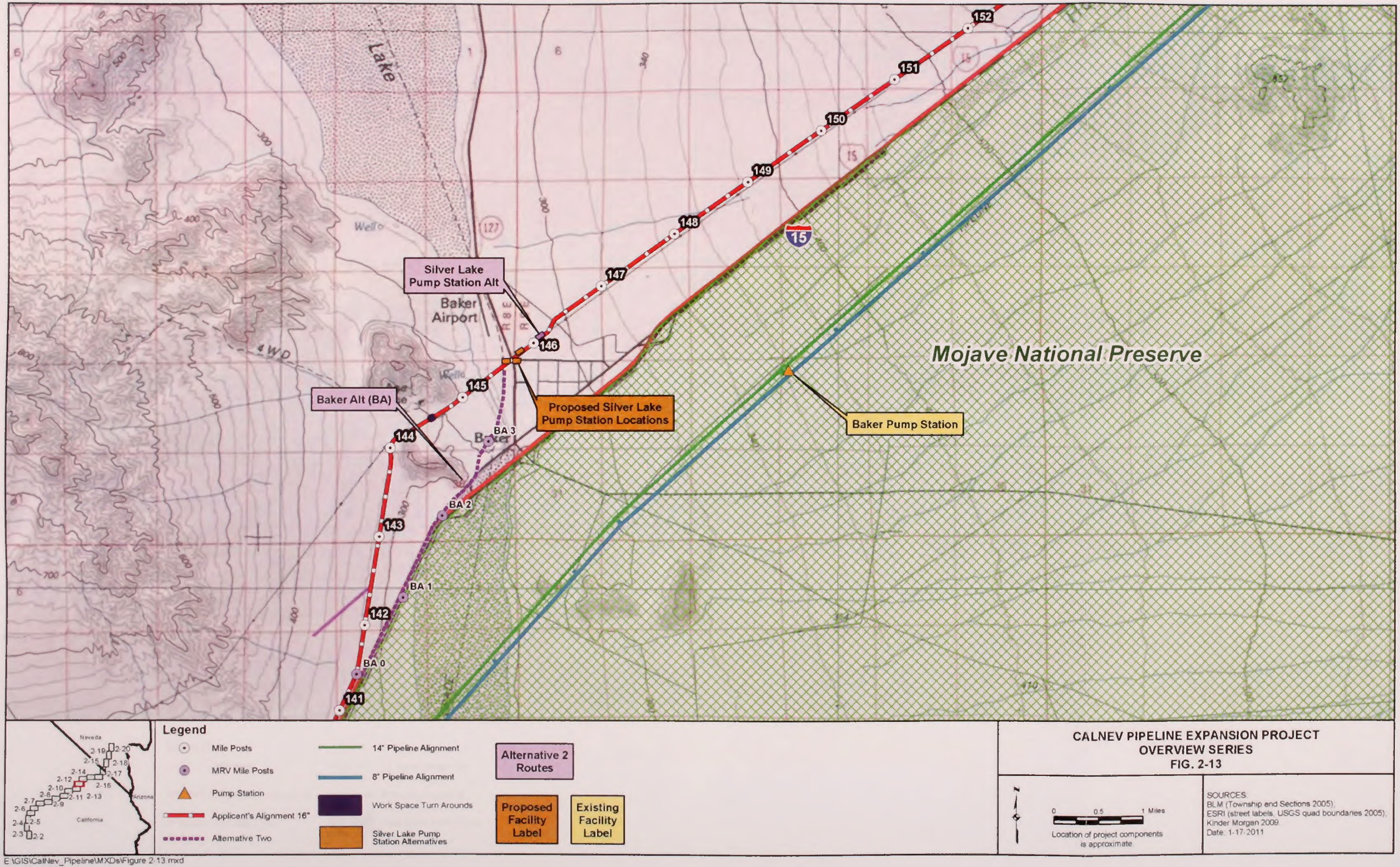
June 27, 2011



CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-13

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009
Date: 1-17-2011

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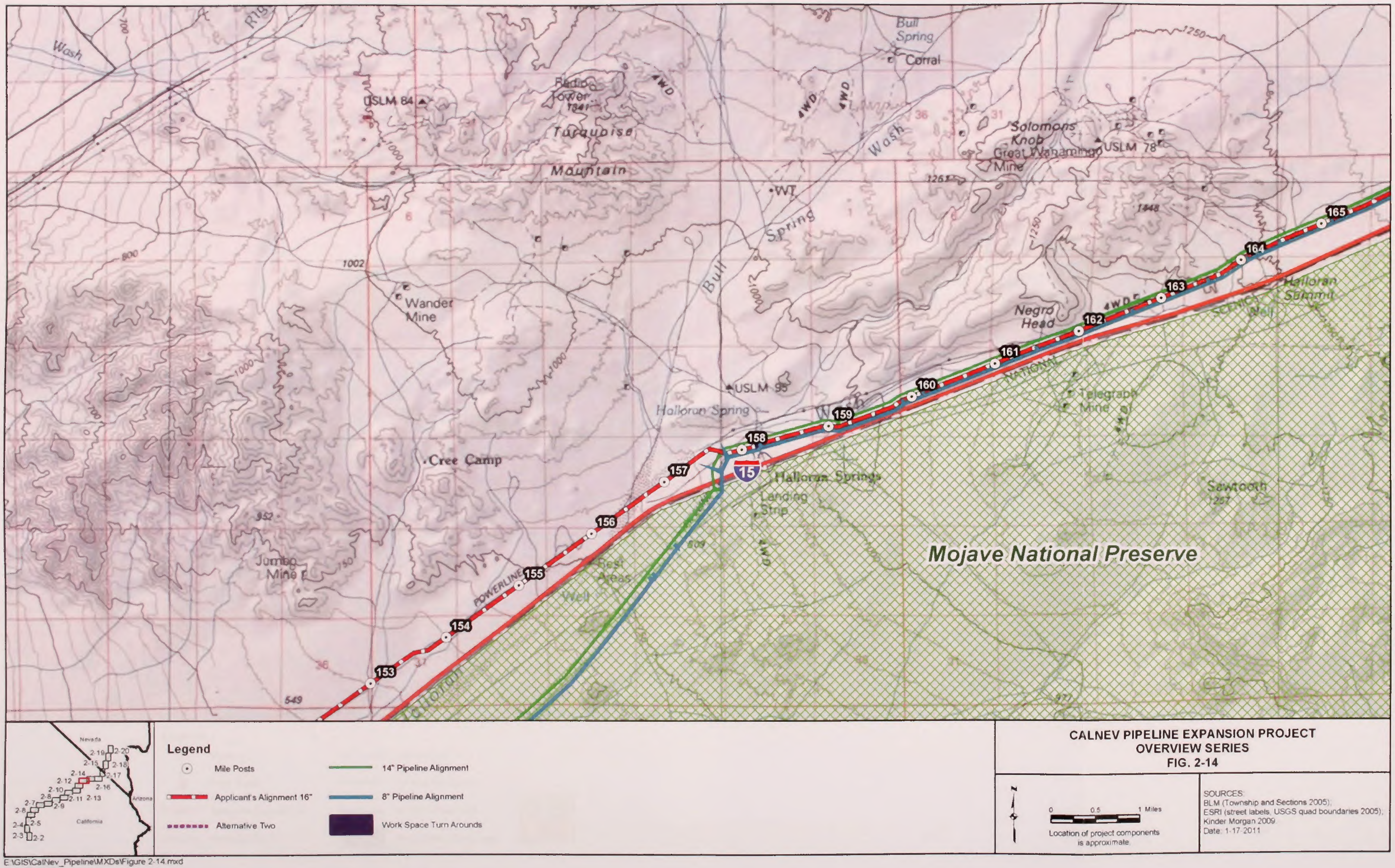
June 27, 2011



Legend

- ⊙ Mile Posts
- 🟥 Applicant's Alignment 16"
- ▪▪▪ Alternative Two
- 🟩 14" Pipeline Alignment
- 🟦 8" Pipeline Alignment
- ■ Work Space Turn Arounds

CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-14

Location of project components is approximate.

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009.
Date: 1-17-2011

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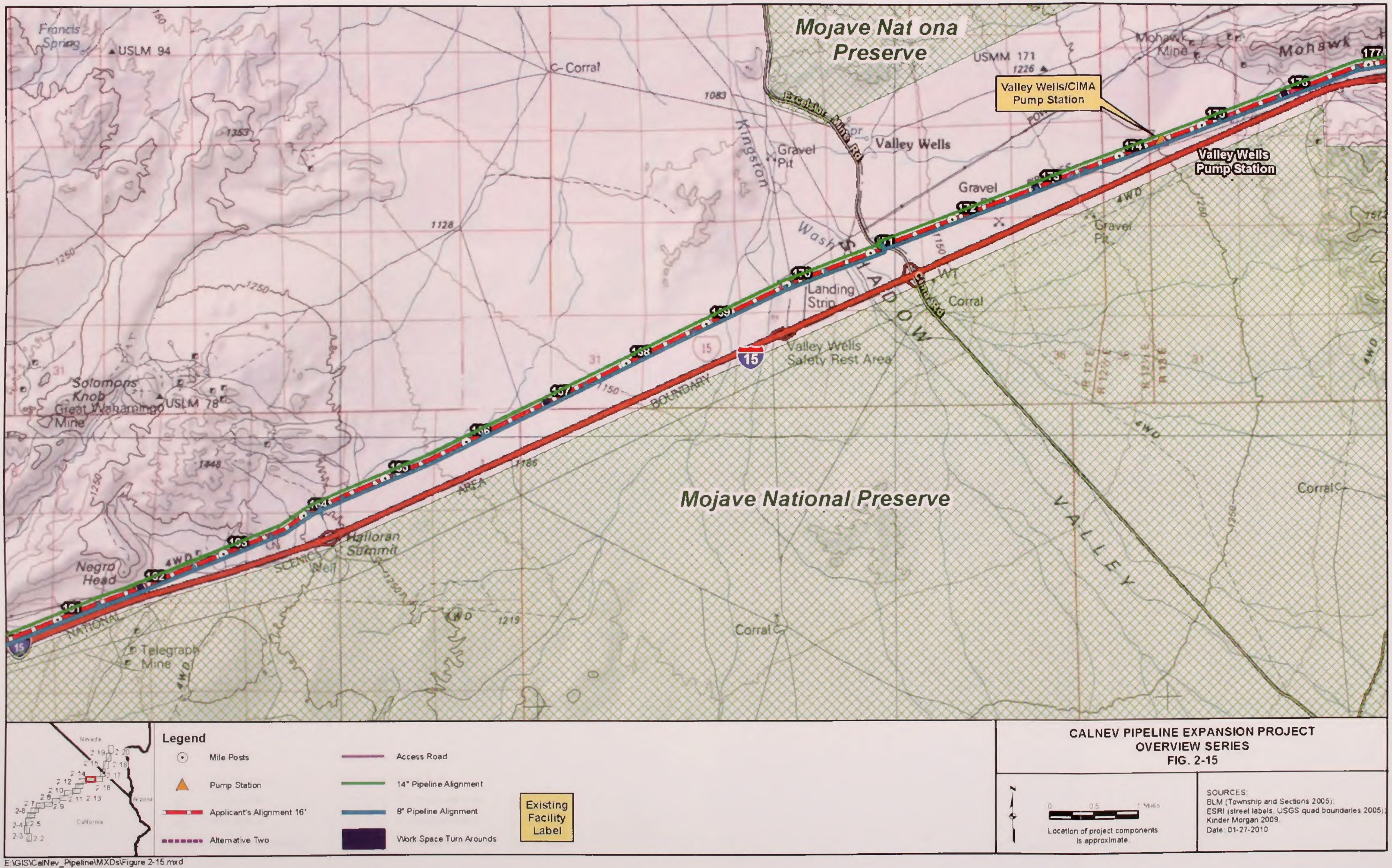
June 27, 2011



Legend

- ⊙ Mile Posts
- ▲ Pump Station
- Applicant's Alignment 16"
- Alternative Two
- Access Road
- 14" Pipeline Alignment
- 8" Pipeline Alignment
- ■ Work Space Turn Arounds
- Existing Facility Label

CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-15

Location of project components is approximate.

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009.
Date: 01-27-2010

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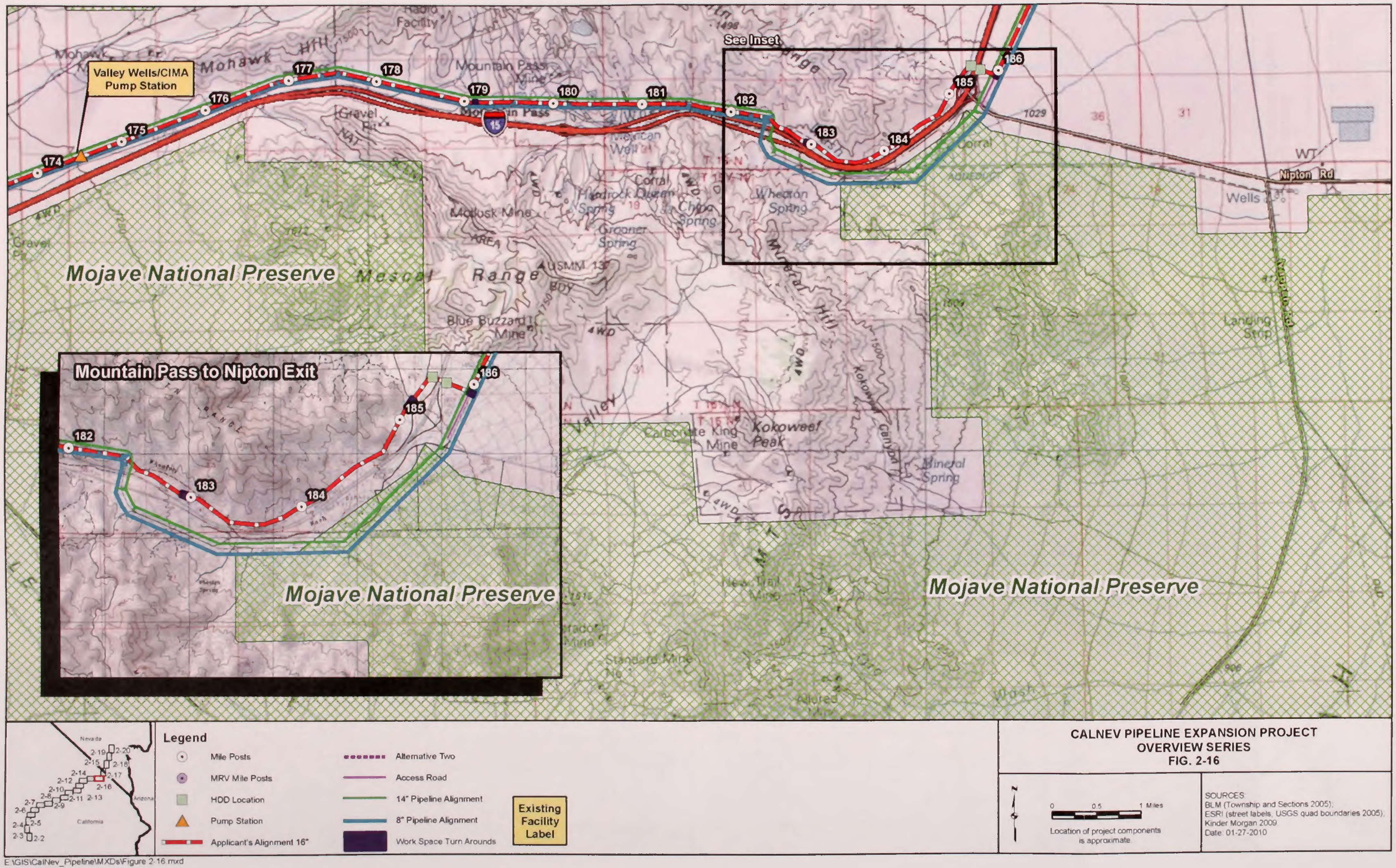
June 27, 2011

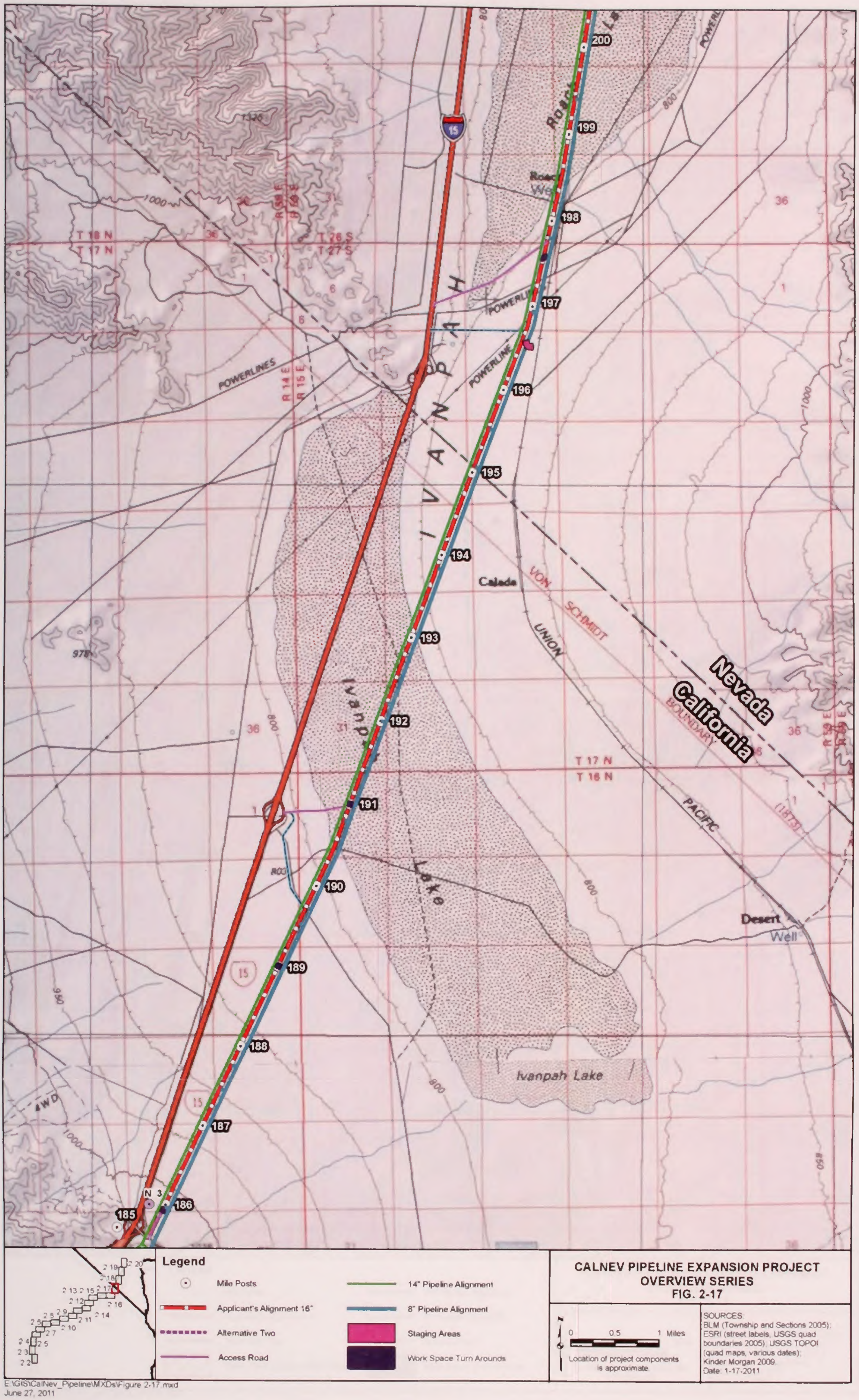


CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-16

Location of project components is approximate

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005);
Kinder Morgan 2009
Date: 01-27-2010

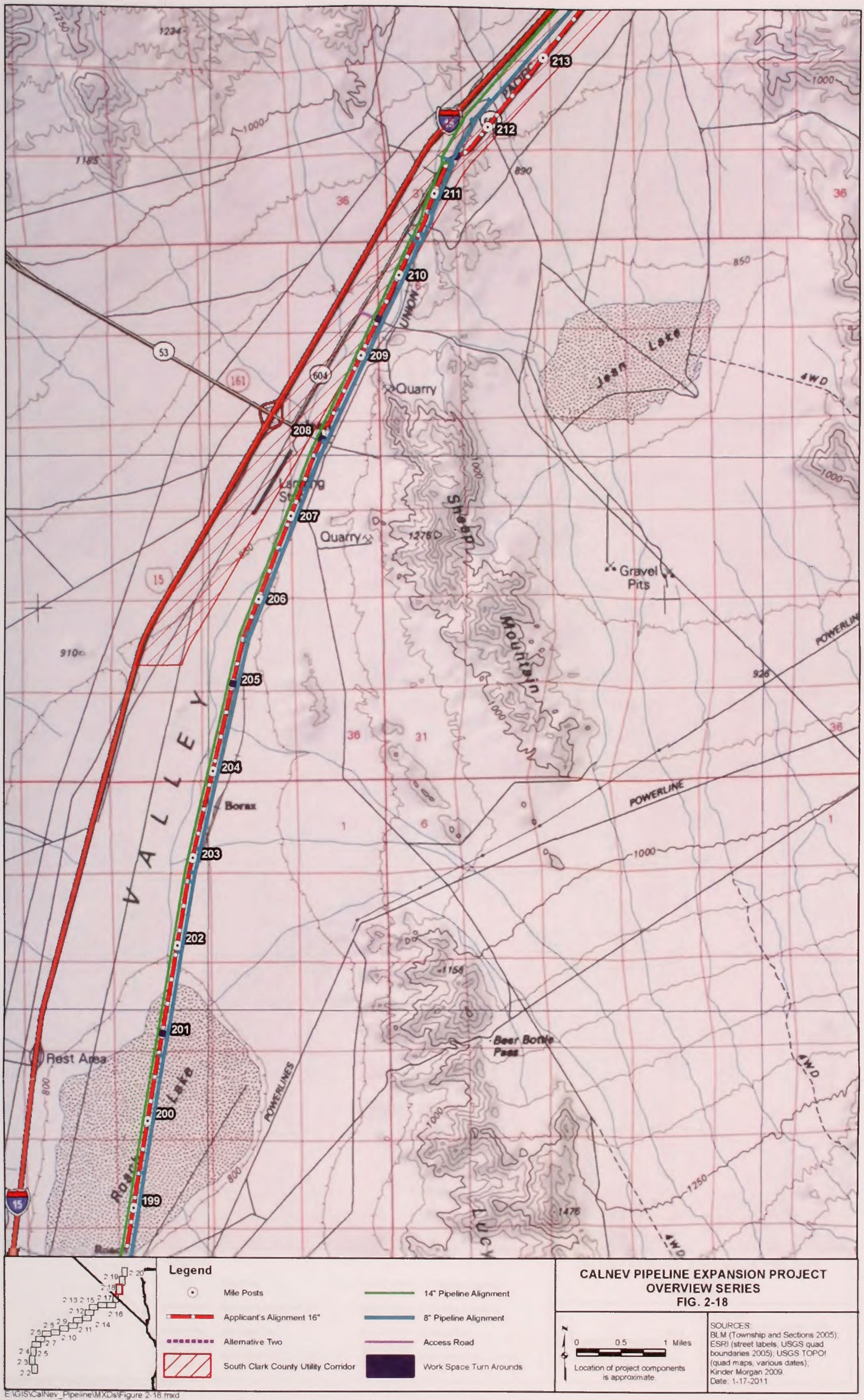
E:\GIS\CalNev_Pipeline\MXDs\Figure 2-16.mxd
June 29, 2011



CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-17

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005); USGS TOPOI (quad maps, various dates);
Kinder Morgan 2009.
Date: 1-17-2011

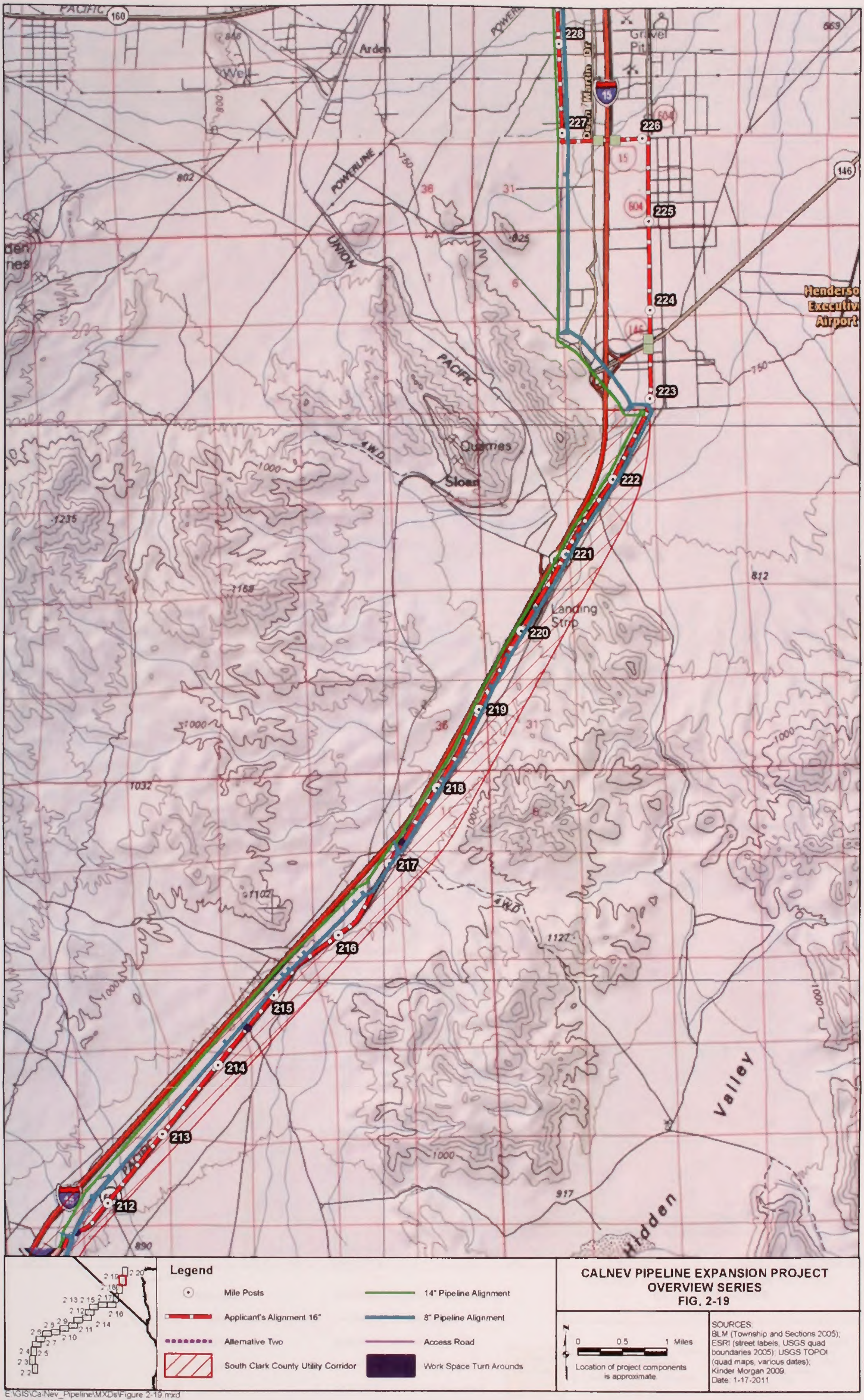
E:\GIS\CalNev_Pipeline\MXDs\Figure 2-17.mxd
June 27, 2011



CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-18

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005); USGS TOPO! (quad maps, various dates);
Kinder Morgan 2009.
Date: 1-17-2011

E:\GIS\CalNev_Pipeline\MXDs\Figure 2-18.mxd
June 27, 2011



CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-19

Legend

⊙	Mile Posts		14" Pipeline Alignment
	Applicant's Alignment 16"		8" Pipeline Alignment
	Alternative Two		Access Road
▨	South Clark County Utility Corridor	■	Work Space Turn Arounds

0 0.5 1 Miles

Location of project components is approximate

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005); USGS TOPO! (quad maps, various dates);
Kinder Morgan 2009
Date: 1-17-2011

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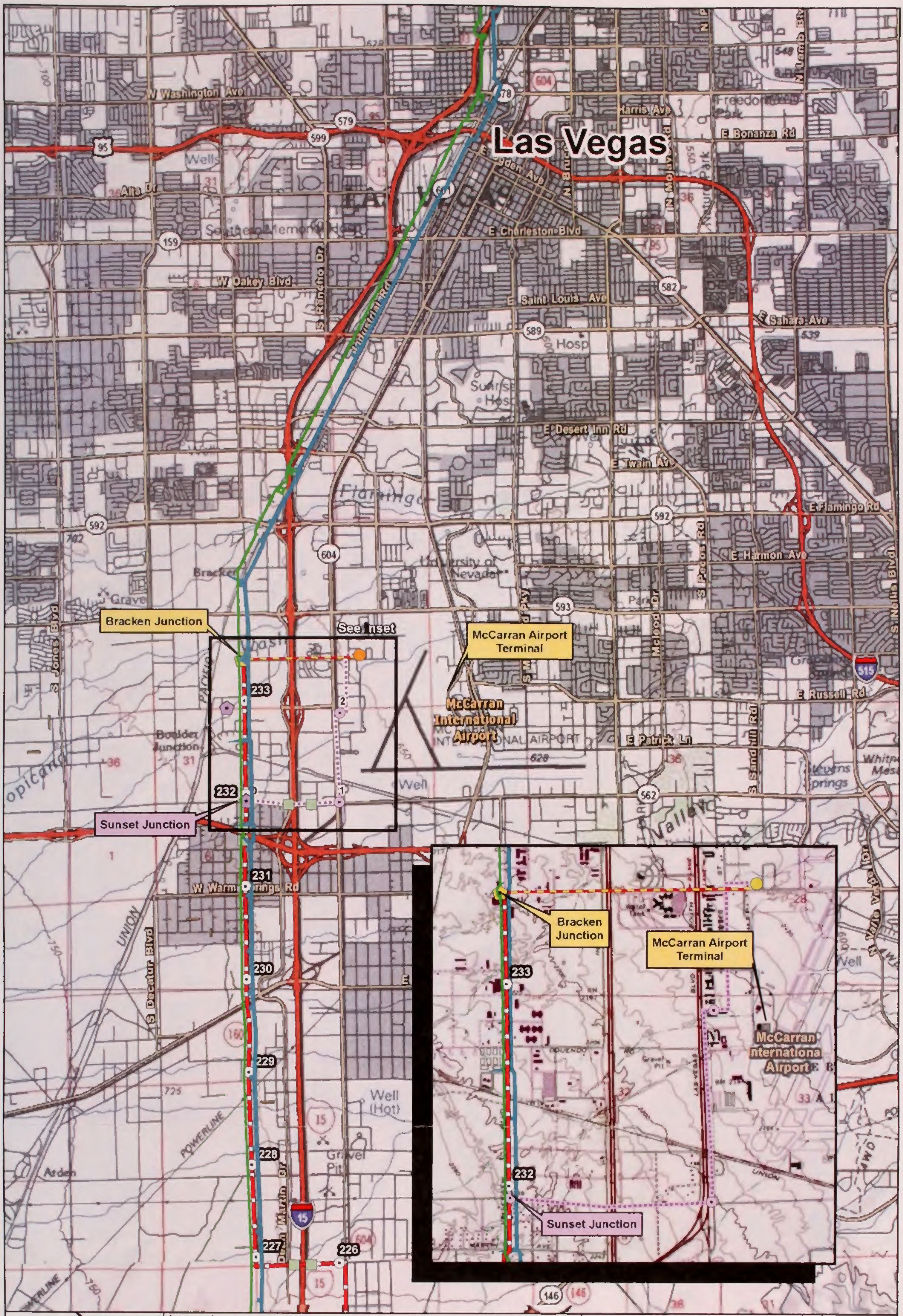
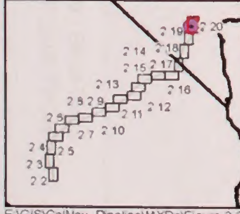
June 27, 2011





Legend

⊙	Mileposts	▬	Applicant's Alignment 16"
⊙	Proposed Lateral Mile Posts	▬	Existing Lateral
🟩	HDD Location	⋯	Alternative Two
⬠	Junction	▬	14" Pipeline Alignment
●	Terminal	▬	8" Pipeline Alignment

Existing Facility Label

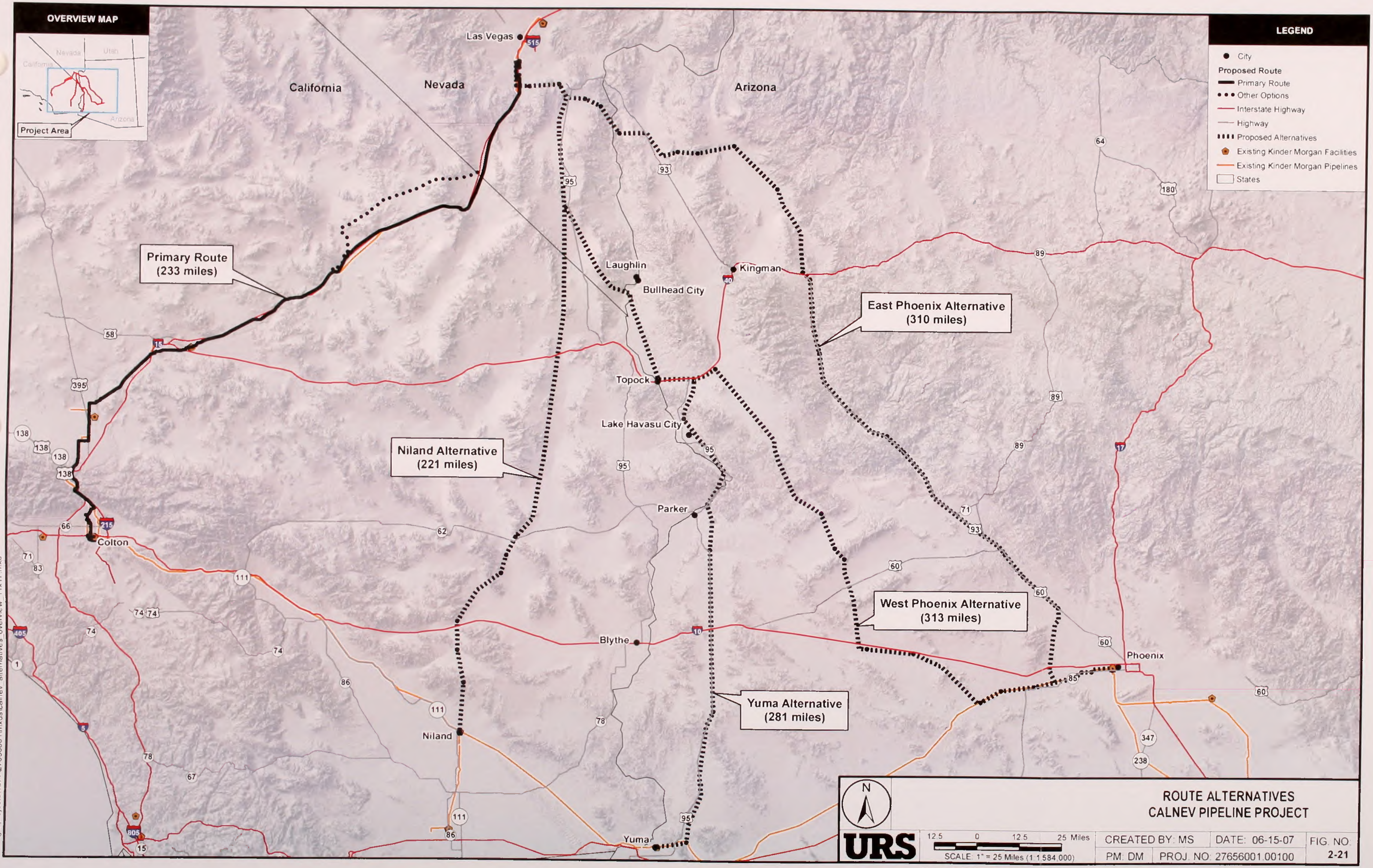
CALNEV PIPELINE EXPANSION PROJECT
OVERVIEW SERIES
FIG. 2-20

0 0.5 1 Miles

Location of project components is approximate.

SOURCES:
BLM (Township and Sections 2005);
ESRI (street labels, USGS quad boundaries 2005); USGS TOPO! (quad maps, various dates);
Kinder Morgan 2009
Date: 1-17-2011

E:\GIS\CalNev_Pipeline\MXDs\Figure 2-20.mxd
June 27, 2011



URS

ROUTE ALTERNATIVES
CALNEV PIPELINE PROJECT

CREATED BY: MS	DATE: 06-15-07	FIG. NO.
PM: DM	PROJ. NO: 27656001.00100	2-21

SCALE CORRECT WHEN PRINTED AT 11X17

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Section 3.0

3.0 Affected Environment and Environmental Consequences

3.1 Introduction

This chapter identifies the physical, natural, and human environments of the project area and the direct, indirect and cumulative effects of implementing each alternative on that environment. The physical environment includes sections for topography, geology, and geologic hazards; soils; energy and minerals; water resources/hydrology and water quality; and air quality and climate. The natural environment covers the topics of biological resources, including vegetation, invasive species, wetland/riparian areas, fish and wildlife, fisheries and special status species. The human environment addresses potential impacts to cultural and paleontological resources; lands and realty; special management areas; aesthetics and visual resources, noise, recreation, social and economic conditions and transportation/traffic. Analyses of cumulative impacts and other National Environmental Policy Act (NEPA) requirements are also provided included in this chapter. In addition, Chapter 3 also presents the scientific and analytical basis for the comparison of alternatives presented in Section 2.7 of this Environmental Impact Statement (EIS)/Environmental Impact Report (EIR).

For purposes of the California Desert Conservation Area (CDCA) Plan Amendment, the existing management situation under the CDCA Plan includes specific areas that are designated as utility corridors to focus the siting of large utilities. Nothing in the proposed action will modify the existing management situation.

3.1.1 Impact Analysis Methodology

When evaluating impacts, the term “significance” is used differently in NEPA and California Environmental Quality Act (CEQA). Under NEPA, a determination of significance is not required at this stage of the analysis in the EIS. Instead, the Draft EIS impact analysis under NEPA considers the context and intensity of potential impacts, provides this information to additional expertise within the agency and within outside agencies, tribes, the public, and other interested organizations, and integrates the feedback from these parties into a Final EIS. The Final EIS is then used by the Agency decision-maker to determine their level of significance as defined by the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1508.27), which is documented by the Authorized Office at the time of the Record of Decision.

Under CEQA, impacts resulting from construction, operation, and decommissioning of the Proposed Project and alternatives are evaluated using significance thresholds. If an impact exceeds a threshold, it is deemed a significant impact. Significant impacts under CEQA require the Applicant to conduct mitigation to reduce the impacts to less than significant levels. For the purposes of the analysis in Chapter 3, the terms *significance* or *significant* are used only to describe impacts under CEQA.

To comply with both NEPA and CEQA, the impact analyses in Chapter 3 are presented in a manner which provides a single technical analysis where appropriate, but separately evaluates and reaches conclusions with respect to impacts under NEPA and CEQA. To accomplish this, the subsections in Chapter 3 are organized as discussed below.

Affected Environment

Each resource-specific subsection in Chapter 3 begins by describing the Affected Environment for the resource at the time when the Bureau of Land Management (BLM) approves, rejects, or modifies the ROW grant as proposed by the Applicant in its SF299 application. In general, the Affected Environment for most resources is the same for both the NEPA and CEQA analyses, so the discussion of existing conditions is not separated into NEPA and CEQA-specific subsections. In cases where the resource requires separate discussion of NEPA and CEQA issues associated with the Affected Environment, the subsection specifies the rationale for the separate discussion.

Applicable Plans, Regulations, and Policies

Following the discussion of the Affected Environment, each section in Chapter 3 includes a summary of the applicable plans, regulations, and policies that are associated with the resource. Identification of these items is a requirement of both NEPA and CEQA. In addition, compliance with these plans, regulations, and policies is a consideration when evaluating the significance of potential impacts from the Proposed Action/Project and the alternatives.

Environmental Consequences

Following the identification of applicable plans, regulations, and policies, each section in Chapter 3 includes an impact analysis of the potential environmental consequences. As discussed above, the manner in which the significance of impacts is addressed is different under NEPA and CEQA, requiring a separate identification of significance, and a separate impact conclusion, for each potential impact. To accomplish this, the Impact Analysis subsections are internally organized as follows:

Requirements and Focus of NEPA versus CEQA Analyses

The nature of the Proposed Action/Project and alternatives (discussed in Section 2) and the existing conditions information is integrated to identify potential impacts that may result from construction, operation, and decommissioning of the Project. For the NEPA analysis, these impacts are identified within the context of the CEQ definition of significance in 40 CFR 1508.27. For each impact, this EIS/EIR evaluates the context, intensity, and spatial and temporal extent per CEQ regulations as follows:

Context: This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant (40 CFR 1508.27).

Intensity: This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity (40 CFR 1508.27):

1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
2. The degree to which the proposed action affects public health or safety.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.
5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.
9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

Spatial Extent:

- Localized – Impact occurs at a specific site or within a relatively small area;
- Extensive – Impact occurs within a larger area, sometimes with a specific boundary, such as drainages with riparian habitat in the project area;
- Area-wide – Impact occurs throughout the project area;
- Regional – Impacts occur on a regional basis (e.g., West Mojave, CDCA, County); and
- National – Impacts occur on a multi-state or national basis or to resources with national importance, as identified in laws, regulations, and policies.

Temporal Extent:

- Short-Term – Impact that occur during the construction phase or for less than a year; Clarify whether they will occur throughout construction, or for a small period during construction.
- Long-Term – Impacts caused during the construction phase that remains substantially longer than the construction phase (greater than one-year). All impacts related to the operational phase will be long-term impacts, as they would occur over the life of the project, but may be intermittent.

For the CEQA analysis, thresholds of significance are defined specified in Appendix G of the *California Environmental Handbook*. Direct (and when appropriate, residual) impacts are to be described in terms of quantity of impacts, whether they exceed significance thresholds as identified in Appendix G. A determination of significance with respect to the criteria established in Appendix G of the *California Environmental Handbook* is necessary to satisfy CEQA. Therefore, following the identification of potential impacts under NEPA, each resource-specific subsection includes a list of the CEQA significance criteria for the resource.

Impact Analysis

Although the conclusion regarding an impact needs to be stated in different terms for NEPA and CEQA regulation, there is also substantial overlap in the technical aspects of the impact analysis between NEPA and CEQA. Therefore, the technical analysis supporting the conclusions can be combined. In fact, for purposes of efficiency and consistency, the analysis should be combined. To accomplish this, the list of potential impacts identified for both NEPA and CEQA analysis are combined into a discrete list of potential impacts for analysis. Each potential impact is designated and numbered according to the resource, such as Impact "BIO-1" for the first potential impact being evaluated in the Biological Resources subsection. Each designated impact may have its source only from the identification of NEPA impacts, or only from the list of CEQA significance criteria. However, in most cases, the designated impacts represent a combination of technically-related NEPA and CEQA impacts.

Following the designation of specific impacts for analysis, the technical analysis is provided in a manner independent of CEQA and NEPA. The analysis includes quantification of the potential impact where possible and appropriate, and a qualitative discussion of the potential impact where quantification if not possible or applicable.

Each impact analysis subsection ends with a paragraph summarizing the conclusions of the analysis with respect to NEPA, and a paragraph describing the significance of the potential impact with respect to the CEQA criteria. For the NEPA conclusions, impacts included in Chapter 3 are defined as either:

- Adverse – A negative effect to a particular resource or resource use. Adverse impacts are quantified whenever feasible (e.g., result in the loss of approximately 2 acres of desert tortoise (DT) habitat), or, in the absence of quantification, other evidence is given to help the public understand that the impact is negative, and what its scope is;
- Beneficial – A positive effect to a particular resource or resource use. Beneficial impacts are quantified whenever feasible or, in the absence of quantifiable impacts, other evidence is given to help the public understand why the impact is positive. Beneficial impacts will be further qualified if they do not meet the BLM Resource Management Plan (RMP) or County General Plan goals and objectives.

In addition, the impact types are discussed within the following framework:

- Direct Impacts – Impacts that are caused by an aspect of an alternative or an alternative, and occur at the same time and place. Example: A direct water quality impact occurs when an aspect of an alternative, such as discharging untreated wastewater onsite, results in exceeding a water quality standard.
- Indirect Impacts – Impacts that are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including

ecosystems. Example: An indirect impact to species occurs because of an allowable development with a new road to the facility that the public can also use to access a surrounding route network, which causes an increase in area traffic and thus in anticipated desert tortoise mortality from vehicles in the area. Indirect impacts should be explained so the public can understand the cause and effect relationships.

- Cumulative Impacts – Impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Major actions that contribute cumulative effects for each resource value/use will be identified at the outset of the cumulative analysis, as well as the area that will be considered for cumulative effects analysis. The default CEA area for this project will be the CDCA. No cumulative effects exist where there are no direct or indirect impacts.
- Residual Impacts – Any direct, indirect, and cumulative effects that remain after the application of all mitigation measures (BLM NEPA Handbook H-1790-1, January 2008).

For the CEQA conclusions, the impact conclusions are discussed within the context of whether they exceed significance thresholds as identified in Appendix G of the *California Environmental Handbook*.

The impact analysis and conclusions are provided for the Proposed Action/Project, the identified alternatives, and the No Action/Project Alternative. Because there are many features and impacts common to all alternatives, Chapter 3 may list the same impacts or mitigation measure for several alternatives, or may summarize the impacts by stating that they would be the same under one or more alternatives.

Mitigation Measures

Following the impact conclusions reached in the impact analysis, each subsection ends with a discussion of mitigation measures that may be applied. With respect to adverse impacts under NEPA, mitigation measures are identified that would reduce or avoid the impact. With respect to significant impacts under CEQA, mitigation measures are identified that would reduce the magnitude of impacts to a level less than significant.

3.1.2 Terminology Used

Chapter 3 uses a common set of terminology to define project elements and associated impacts. A list of acronyms can be found at the beginning of the document. Where appropriate, footnotes have been added to define industry specific terms. The following terminology is used throughout Chapter 3:

Nominal is an industry specific term which refers to the 100-foot-wide construction ROW without any additional workspaces or staging areas.

The **"project area"** is the area of potential influence for the Project. The project area can change based on the resource area being evaluated. For instance, a resource such as Air Quality, the project area will be defined by air basins at the regional level, where as the project area will only include lands within the project footprint for Recreation.

The Proposed Action/Project is defined as the nominal construction ROW along with all above ground facilities, staging areas, extra workspaces, and operation and maintenance facilities.

3.1.3 Incomplete or Unavailable Information

In instances where adequate data does not exist to either define the existing conditions or inform the impact analysis, this report uses the most conservative applicable thresholds. Where this occurs, the report clearly identifies this lack of data along with any assumptions used in the analysis.

3.2 Topography, Geology, and Geologic Hazards

This section describes the topography; physiographic and geologic setting; and geologic hazards in the vicinity of the Proposed Project and its alternatives.

During the scoping period, government agencies and members of the public identified the following issues and concerns related to topography, geology, and geologic hazards: (1) ensure that the pipeline is constructed using the best available technology to ensure long-term viability within active fault zones; (2) discuss earthquake response plans; and (3) discuss emergency measures applicable to the handling of hazardous materials, e.g., shutoff valves. These comments are addressed below in the discussion of the affected environment (Section 3.2.1) and potential impacts and mitigation (Section 3.2.3).

3.2.1 Affected Environment

The pipeline right-of-way (ROW) primarily traverses undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States (U.S.) Forest Service (USFS) and the Department of Defense (DoD). Lands under the jurisdiction of the State of California, the State of Nevada, San Bernardino County, and Clark County are also crossed by the pipeline ROW. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

3.2.1.1 Topography

The topography of the Proposed Project route is summarized in Table 3.2-1 and shown on Figure 3.2-1.

3.2.1.2 Physiographic and Geologic Setting

The pipeline ROW traverses varied and complex geologic terrain from the existing North Colton Terminal in the City of Colton to the Bracken Junction in the City of Las Vegas and generally parallels the existing Calnev Pipe Line, LLC (Calnev) system.

Regional Physiographic Setting

From Colton to Las Vegas, the route traverses four physiographic provinces: Peninsular Ranges, Transverse Ranges, Mojave Desert (California defined physiographic province), and Basin and Range, respectively. These physiographic provinces and specific geographic areas crossed by the pipeline route are described below. A summary geologic map of the Project Area showing physiographic provinces is provided as Figure 3.2-2.

Table 3.2-1 Topographic Details Along the Pipeline Route by Milepost (MP)

Location	Maximum/ Minimum Elevation (feet above mean sea level)	Geologic Formation: Stratigraphic Unit	Topography/Elevation
Colton to Cajon Pass (MP 0 to 16)	2,234/1,017	Quaternary alluvium; Mesozoic granites	Low relief in San Bernardino (1,100 feet), gentle sloping up to Cajon Pass
Cajon Pass (MP 16 to 30)	4,482/2,118	Quaternary alluvium; Paleozoic and Mesozoic schist; Precambrian igneous and metamorphic rocks; Quaternary loosely consolidated sandstone, shale, and gravel deposits	High relief area; route follows the moderate relief of the Cajon Pass between the San Bernardino Mountains and the San Gabriel Mountains
Cajon Pass to Barstow (MP 30 to 90)	4,240/1,950	Quaternary alluvium; Mesozoic volcanic and metavolcanic rocks; Mesozoic granites; Quaternary loosely consolidated sandstone, shale, and gravel deposits	Moderate relief on the west side of Cajon Pass; Low relief with localized areas of high relief surrounding the Mojave River and isolated topographic highs
Barstow to the CA-NV state line (MP 90 to 195)	4,746/931	Quaternary alluvium; Quaternary loosely consolidated sandstone, shale, and gravel deposits; Mesozoic volcanic and metavolcanic rocks; Tertiary volcanic flow rocks; Tertiary sedimentary rock; Permian sedimentary rock; Cambrian sedimentary rocks; Devonian sedimentary rocks; Precambrian conglomerate, shale, limestone, dolomite, chert, quartzite, and phyllite	Low relief with localized areas of high relief at isolated topographic highs
CA-NV state line to Las Vegas (MP 195 to 233.5)	3,120/2,208	Quaternary alluvial deposits; Quaternary playa deposits; Tertiary welded and nonwelded silicic ash-flow tuffs; Tertiary andesite and basalt flows; Mississippian limestone	Low relief with localized areas of high relief at isolated topographic highs

Source: URS Corporation (URS) 2008; Stewart and Carlson 1978.

Peninsular and Transverse Ranges. The Peninsular Ranges Province is a northwest oriented physiographic-structural feature that extends over 1,400 kilometers from just south of the San Gabriel and Santa Monica mountains into Mexico forming the Baja California peninsula. The province boundaries extend west offshore to the continental margin and east to the western side of the Salton Trough. The Peninsular Ranges Province is divided into a series of fault-bounded blocks each of which has a set of uniform characteristics. The Los Angeles Basin, Santa Ana Mountains, and Perris blocks are located at the northwest end of the province (Morton and Miller 2006). Colton is located within the northeastern margin of the Perris block. The northern Perris block is dominated by alluvial valley deposits consisting of Pleistocene and Holocene alluvial fan deposits of coarse sand and gravel and finer and eolian (wind blown) deposits. These deposits are present north of the Santa Ana River, emanating from the San Gabriel Mountains (Morton and Miller 2006).

The Transverse Ranges Province is an east trending physiographic-structural controlled feature that is located diagonally east of the northwest margins of the Peninsular Ranges Province. The San Gabriel Mountains form the central part and the San Bernardino Mountains form the eastern part of the Transverse Ranges, where the Cajon Pass area lies between the two mountain ranges.

The highest peaks of the San Gabriel Mountains are in the eastern margin, where the highest Mount San Antonio, is just over 10,000 feet high. The San Gabriel Mountains are a deeply dissected mountain range with steep slopes, averaging greater than 65 percent, characterized by having rapid erosion of the near-surface unconsolidated rock material. The basement rock is relatively discrete fault-bounded blocks (Morton and Miller 2006). The relatively large central block, the San Gabriel Mountain block, is surrounded by a number of smaller blocks including the Blue Ridge block, the Baldy block, and the Lytle Creek block. The eastern most block, the Lytle Creek block, consists of two distinct parts; a northwestern part located between Lytle Creek Fault and the northwest-striking eastern end of the San Gabriel Fault Zone, and a southeastern part located between the San Gabriel Fault Zone and Glen Helen Fault. This is in the proximity of the pipeline route approaching the Cajon Pass area.

The vicinity of Cajon Pass is a relatively low lying area bounded by the San Bernardino Mountains to the east, and the San Gabriel Mountains to the west separated by the San Andreas Fault Zone. The dominant physiographic feature in the Cajon Pass area is the Cajon Valley, where the San Andres Fault Zone forms the south side of the valley and the high bluffs of Cajon Summit form the north side. The sedimentary deposits in the valley range in age from Miocene to Quaternary (Morton and Miller 2006). Within the valley, bedrock is dominated by two compositionally similar Miocene units, which differ in resistance to erosion, resulting in contrasting geomorphic expression. The Crowder formation (Tcr) is less resistant and forms low rounded hills, and the Cajon Valley formation (Tcv) forms the prominent flatirons (Morton and Miller 2006). The high bluffs of Cajon Summit form the informally-named the Victorville Fan where drainages dissect deposits of the older alluvial-fans and Shoemaker Gravel (Qsh).

Mojave Desert. The California defined Mojave Desert physiographic province extends north along the pipeline route from the San Andreas Fault Zone at Cajon Pass eastward to the Nevada state line. The Mojave Desert is a broad interior region of southeastern California characterized by isolated north trending mountain ranges separated by broad expanses of alluvial filled desert plains. Considered by the California Geologic Survey (CGS) to be a separate physiographic province, the Mojave Desert forms the western portion of the larger Basin and Range province within the Great Basin. The Mojave Desert is a late Tertiary- and Quaternary-aged in-filled basin, bounded to the south and west by the San Andreas Fault Zone and the Transverse Ranges, and to the north and northwest by the Garlock Fault Zone and Basin and Range province near the California-Nevada state line and the Death Valley National Park region. The Mojave River is the largest drainage system in the Mojave Desert, with its headwaters in the northern slopes of the San Bernardino Mountains and terminus near Baker at Silver Lake. The river flows mainly underground, but does flow at the surface where there are areas of elevated bedrock. The river only reaches Silver Lake during very high rainfall seasons, the last being in 1993. Interior enclosed drainage and many alluvial fans and playas are characteristic of the Mojave Desert.

Las Vegas Valley. The Mojave Desert continues across the Nevada state line and into Las Vegas Valley beyond the end of the pipeline route. This portion of the route is within the Basin and Range physiographic province characterized by structurally-controlled north-trending mountain ranges, broad alluvial fans and expanses of alluvial filled desert plains. The Las Vegas Valley is typical of one of the many structurally controlled valleys within the Basin and Range province bounded by the Spring Mountains on the southwest and the Sheep Ranges and Las Vegas Ranges on the northeast. Alluvial deposits within Las Vegas Valley consist of large coalescing alluvial fans that grade downslope into extensive areas of fine-grained sediments. The northwest striking Las Vegas Valley Shear Zone (LVVSZ), which offsets Paleozoic marine strata and Mesozoic thrust faults in the Spring Mountain and Las Vegas Ranges (Page et al. 2005) occupies the central portion of the Las Vegas Valley and is mostly concealed by the thick alluvial deposits.

Local Geologic Conditions Along the ROW

Calnev conducted a baseline geology and geohazards assessment of the Proposed Project route (URS Corporation 2008). Five reaches or segments with unique geologic features were identified along the project route, including Colton to Cajon Pass, Cajon Pass, Cajon Pass to Barstow, Barstow to the California-Nevada (CA-NV) state line, and the CA-NV state line to Las Vegas. Table 3.2-2 includes a summary of the geologic features and major crossings for each reach of the proposed route. Geologic features are shown on Figure 3.2-3 (Maps 1 through 4). A description of the detailed geologic conditions along each of these segments is provided below.

Colton to Cajon Pass. The Colton to Cajon Pass segment is from milepost (MP) 0 to 16 and would encounter alluvium, hard rock, the San Jacinto Fault Zone, and the Lytle and Cajon Creek washes. The pipeline would head west from Sycamore Avenue (Colton Terminal and Pump Station) to either Cedar Avenue or Orchard Street. As shown on Figure 3.2-3, Map 1 of 4, the route traverses Quaternary-aged alluvium, lake, playa, and terrace (map unit Q) deposits that are unconsolidated and semi-consolidated (Jennings 1977). It would then head north along Orchard Street where it would cross a railway and Interstate (I) 10 MP 2.5 within Quaternary alluvium (map unit Q) (Figure 3.2-3, Map 1 of 4). As the pipeline heads northward, the next major road-crossing is Highway 30/210 (W Highland Ave segment) near MP 8.7.

The proposed route would encounter plutonic rocks including Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite (map unit grMz) between MP 13.7 and MP 14.6. The route would cross back into quaternary alluvium (map unit Q) at MP 14.6. The route would cross beneath the I-15 overpass near MP 15.4.

Table 3.2-2 Summary of Geologic Conditions Along the Pipeline ROW by Milepost (MP)

Route Segment	MP	Map Sheet (Number)	Major Crossings	Drainages [A]	Faults	Geology (see explanation for units)	Geology Description	Geologic Map [B] reference
Colton to Cajon Pass (MP 0 to 16.0)	0	1	Interstate (I)-10 & Railway Hwy 30/210 (W Highland Ave segment)			Q	Q – Quaternary alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated mostly nonmarine, but includes marine deposits near the coast.	[1]SB 30' x 60' qaudrant
	↓	1	Lytle Creek - flood plain	Lytle Creek Wash	San Jacinto FZ (Lytle Creek segment)	grMz	grMz – Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite. Q – Quaternary alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated mostly nonmarine, but includes marine deposits near the coast.	
	16		adjacent west Cajon Creek Wash (Glen Helen Alternate route crosses; MP 0-1.8)	Cajon Creek Wash	San Jacinto FZ (Glen Helen segment)	Q		
Cajon Pass (MP 16.0 to 30.0)	16	1	Railway (Burlington Northern Santa Fe [BSNF]), Cajon Creek Wash	3 small drainages, Cajon Creek Wash		Q, sch	Q – Quaternary alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated mostly nonmarine, but includes marine deposits near the coast. ; sch – schists of various types, mostly Paleozoic or Mesozoic age, some Precambrian ; pCc – complex of Precambrian igneous and metamorphic rocks, mostly gneiss and schist intruded by igneous rocks, may be Mesozoic in part ; Mc – sandstone, shale, conglomerate, and fanglomerate, moderately to well consolidated.	
	↓	1		~6 small and mod. drainages	San Andreas FZ- including Punchbowl fault	sch, pCc, Mc		
			Hwy 138 ; I-15		Cleghorn fault (sinistral)	Mc, QPc	Mc – sandstone, shale, conglomerate, and fanglomerate, moderately to well consolidated. ; QPc – Pliocene and/or Pleistocene sandstone, shale, and gravel deposits, mostly loosely consolidated	
			Railway (BNSF) multiple tracks ; I-15 (2)			QPc		
	30	1				QPc		
Cajon Pass to Barstow (MP 30.0 to 90.0)	30	1		3 small drainages		Q	Q – Quaternary alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated mostly nonmarine, but includes marine deposits near the coast.	
	↓ 45	1	California aqueduct State Hwy 18 & Hwy 395			Q		
	↓	1	Mojave River and Railway (BNSF)			Q		[2]SB 2 degree sheet
		1			Helendale fault	Q, Mzv, grMz	Q – Quaternary alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated mostly nonmarine, but includes marine deposits near the coast ; Mzv – undivided Mesozoic volcanic and metavolcanic rocks, andesite and rhyolite flow rocks, greenstone, volcanic breccia and other pyroclastic rocks in part strongly metamorphosed, includes volcanic rocks of Franciscan Complex, basaltic pillow lava, diabase, greenstone, and minor pyroclastic rocks ; grMz – Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite.	
	66	1	I-15 I-40, Railway (BNSF) and Mojave River	2 mod. drainages	Lenwood-Lockhart fault Harper Lake-Camp Rock fault ?			
	↓	1		8 small & mod. drainages, Mojave River		Q ; QPc		
	90	1	Railway (BNSF)					
Barstow to CA-NV state line (MP 90.0 to	90	1	Railway (BNSF)	1 small drainage	Calico fault Manix fault	Q	Q – Quaternary alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated mostly nonmarine, but includes marine deposits near the coast.; QPc – Pliocene and/or Pleistocene sandstone, shale, and gravel deposits, mostly loosely consolidated ; grMz – Mesozoic granite, quartz	[2]SB 2 degree sheet (continued)
	↓		Railway (BNSF)					

Table 3.2-2 Summary of Geologic Conditions Along the Pipeline ROW by Milepost (MP)

Route Segment	MP	Map Sheet (Number)	Major Crossings	Drainages [A]	Faults	Geology (see explanation for units)	Geology Description	Geologic Map [B] reference
195.0)		1 / 2		2 small & moderate drainages		Q	monzonite, granodiorite, and quartz diorite.	[3]California Geologic Map
		2	I-15	12 small , moderate & large drainages		Q ; QPc ; grMz		
	126 ↓	2		4 small & moderate Drainages		Q ; Tv	Q – Quaternary alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated mostly nonmarine, but includes marine deposits near the coast.; Tv – Tertiary volcanic flow rocks, minor pyroclastic deposits; grMz – Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite; Tc – undivided Tertiary sandstone, shale, conglomerate, breccia, and ancient lake deposits; Pm – Permian shale, conglomerate, limestone and dolomite, sandstone, slate, homfels, quartzite, minor pyroclastic rocks	
		2	Mojave River , Hwy 127	6 small , moderate & large drainages	Baker fault	Q ; grMz, Tc, Pm		
		2		1 moderate drainage		Q		
		2		6 small & moderate Drainages		Q ; grMz		[4]Kingman 2 degree sheet
	157 ↓	2 / 3		5 small & moderate Drainages		Q ; Ca ; D	Q – Quaternary alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated mostly nonmarine, but includes marine deposits near the coast.; Ca – Cambrian sandstone, shale, limestone, dolomite, chert quartzite, and phyllite, includes some rocks that are possible Precambrian; D – Devonian limestone and dolomite, sandstone and shale, in part tuffaceous; pC – Precambrian conglomerate, shale, sandstone, limestone, dolomite, marble, gneiss, homfels, and quartzite, may be Paleozoic in part.	
	195	3	I-15	4 small, moderate & large drainages		pC, Q		
		3	Ivanpah Lake (dry ?)			Q	Q – Quaternary alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated mostly nonmarine, but includes marine deposits near the coast	[5]Mesquite 30' x 60' quadrant
CA-NV state line to Las Vegas (MP 195.0 to 233.5)	195 ↓	4	East Primm Blvd			Qa	Qa – Latest Pleistocene to Holocene alluvium, undivided, flat, relatively undissecated fan, terrace, and basin deposits; Qp –Latest Pleistocene to Holocene playa, marsh, and alluvial-flat deposits, locally eroded; Tt3 – Tertiary welded and nonwelded silicic ash-flow tuffs, locally includes thin units of air-fall tuff and sedimentary rock	
		4		2 drainages (Ivanpah Valley Lake)		Qp ; Qa ; Tt3		
	211 ↓	4	Union Pacific Railway					
				3 small drainages		Qa ; Tt3	Qa – Latest Pleistocene to Holocene alluvium, undivided, flat, relatively undissecated fan, terrace, and basin deposits; Tt3 – Tertiary welded and nonwelded silicic ash-flow tuffs, locally includes thin units of air-fall tuff and sedimentary rock; Tba – Tertiary andesite and basalt flows, mostly in ~17 to ~6 million-year age range.	
	221	4		1 small drainage		Qa ; Tba		

Table 3.2-2 Summary of Geologic Conditions Along the Pipeline ROW by Milepost (MP)

Route Segment	MP	Map Sheet (Number)	Major Crossings	Drainages [A]	Faults	Geology (see explanation for units)	Geology Description	Geologic Map [B] reference
CA-NV state line to Las Vegas (MP 195.0 to 233.5) (Cont'd)	221 ↓	4	Highway 146			Mc ; Qa	Mc – Mississippian limestone and minor amounts of dolomite and shale; Qa – Latest Pleistocene to Holocene alluvium, undivided, flat, relatively undissecated fan, terrace, and basin deposits	[5]Mesquite 30' x 60' quadrant (continued)
			I-15	3 small drainages		Qa	Qa – Latest Pleistocene to Holocene alluvium, undivided, flat, relatively undissecated fan, terrace, and basin deposits	[6]Las Vegas 30' x 60' quadrant
					Las Vegas Valley faults and fissures	Qa		
	233	4	I-215; Union Pacific Railway			Qa		

Source: URS Corporation 2008.

Note: Drainages approximate width (feet): small- 25-50' ; moderate (mod.)- 50-75' ; large- 75-100' ; very large- ≥100' (e.g. Lytle Creek, Cajon Creek; Mojave River)

Just beyond Lytle Creek, at about MP 11.7, the Proposed route would diverge from the existing ROW and would traverse Quaternary alluvium (map unit Q), cross the Glen Helen Fault, and would then turn northwest and follow Historic Route 66 (Cajon Blvd.).

Cajon Pass. The Cajon Pass segment is from MP 16 to 30 and would encounter alluvium, some active drainage channels, some hard rock, and the San Andreas Fault Zone. As shown on Figure 3.2-3, Map 1, the route would cross quaternary alluvium deposits as it follows the eastern banks of Cajon Creek along Cajon Boulevard. Between MP 20.3 and MP 21.4, the route encounters schists of Paleozoic and Mesozoic age (map unit sch) in and around the main fault strand of the San Andreas Fault, near MP 21 (Figure 3.2-3, Map 1). The route would cross a narrow section of Precambrian igneous and metamorphic rock (map unit pCc) consisting of gneiss and schist intruded by igneous rocks between MP 21.4 and MP 22.0. The route would then cross a brief section of Miocene moderately to well consolidated, continental sedimentary rock including sandstone, shale, conglomerate, and fanglomerate (map unit Mc) from MP 22.0 to MP 22.4 following by a brief section of Precambrian igneous and metamorphic rock (map unit pCc) from MP 22.4 to MP 23.1. From MP 23.1 to MP 26.3, the route would then be within Miocene moderately to well consolidated, continental sedimentary rock including sandstone, shale, conglomerate, and fanglomerate (map unit Mc) around the crossing of California Highway-138 and I-15 near MP 25.

The Wagon Train Road horizontal directional drilling (HDD) Alternative would cross below and to the east side of I-15 at about MP 24.3 of the proposed route, and would then cross Highway 138. This route would be slightly shorter and would avoid an alluvial area along the eastern margin of Cajon Creek while crossing Miocene moderately to well consolidated, continental sedimentary rock including sandstone, shale, conglomerate, and fanglomerate (map unit Mc). This HDD could bore through the potentially active Cleghorn Fault Zone, into hard granitic rocks.

Along the BNSF railway, the proposed route traverses loosely consolidated alluvial fan deposits of Pliocene and/or Pleistocene age (map unit QPc) from MP 26.3 to MP 26.6 with a small section of Miocene sedimentary rock at MP 26.6 to MP 26.9. The route crosses northbound I-15 near MP 27 and then southbound I-15 near MP 28. It continues up the foothills of the Cajon Summit within loosely consolidated alluvial fan deposits of Pliocene and/or Pleistocene age (map unit QPc) from MP 26.9 to MP 30.7.

Cajon Pass to Barstow. The Cajon Pass to Barstow segment from MP 30 to 90 would encounter alluvium, weathered soft rock, some hard rock, three major fault zones and numerous drainage channels. After traversing down Baldy Mesa Road into the Mojave Desert, the pipeline traverses through old and young alluvial-fan deposits (map unit Q) that are dissected by recently active drainage (Figure 3.2-3, Map 1). The Phelan Road/Baldy Mesa Alternative route would diverge from the proposed route at MP 33.9 for 2.1 miles, crossing the same Quaternary alluvium. The route would cross the California Aqueduct near MP 36.3, Highway 18 near MP 42.3, and Highway 395 near MP 44.5 (Figure 3.2-3, Map 1).

Near MP 53.4, the proposed route would extend parallel to the western margin of the Mojave River channel within the alluvial bluffs sloping down to the river, and would then cross the river channel at about MP 54. The proposed Mojave River crossing would involve a more direct crossing of the river than following the existing ROW, and Quaternary alluvium (map unit Q) within the river channel.

Continuing east, the proposed route continues in Quaternary alluvium (map unit Q) where it crosses the historic Route 66 and BNSF railway (Figure 3.2-3, Map 1). The route would then encounter moderately-low terrain west of the Silver Mountains traversing within Quaternary alluvium (map unit Q). East of MP 58.8 (Figure 3.2-3, Map 1), the route would traverse through moderate terrain consisting of Mesozoic-aged volcanic/metavolcanic and igneous rocks (map units Mzv and grMz, respectively) bounded to the east by the Helendale Fault and Brisbane Valley. The pipeline would cross the Helendale Fault segment of the Helendale-South Lockhart Fault Zone near MP 62.5.

The route traverses Brisbane Valley, which is underlain by undifferentiated Quaternary alluvium (map unit Q). It then enters moderate to low terrain of Quaternary alluvial-fan deposits some localized zones of weathered granitic rock (map unit grMz) (Figure 3.2-3, Map 1). Just south of the Barstow retail store outlet center near MP 76, the route would cross I-15.

The route would cross the Lenwood Fault of the Lenwood-Lockhart Fault Zone near MP 78 (Figure 3.2-3, Map 1). The Lenwood Fault displaces anticlinal tilted beds of loosely consolidated alluvial fan deposits of Pliocene and/or Pleistocene age (map unit QPc). The route would continue to traverse the interspersed Pliocene and/or Pleistocene age alluvium (map unit QPc) and Quaternary alluvium (map unit Q) and crosses I-40 near MP 85.8, the BNSF railway near MP 86.7, and re-crosses the Mojave River beginning just south of MP 87 (Figure 3.2-3, Map 1).

The northwesterly projection of the Harper Lake Fault from the Camp Rock Fault into the Gravel Hills Fault crosses the route between MPs 85 and 87 (Figure 3.2-3, Map 1). The route would continue east along the north banks of the Mojave River traversing alluvium. At about MP 89, the route crosses mill tailings and associated mine waste from former historic mill sites. The route would cross the BNSF railway again near MP 90 in young alluvium and wash deposits (Figure 3.2-3, Map 1).

Barstow to CA-NV State Line. The Barstow to CA-NV state line segment starts at MP 90, east of downtown Barstow near the Yermo Marine Corps Supply Center, and extends northeasterly to the CA-NV state line at MP 195. This segment is mostly within Quaternary alluvium (map unit Q) with some localized areas of weathered hard and soft rock and lacustrine deposits.

At MP 90.2 (Figure 3.2-3, Map 1), the route would cross under the BNSF railroad tracks and generally parallels Yermo Road and the railroad ROW through the Mojave Valley. It runs along the north side of the Mojave River wash within Quaternary alluvium (map unit Q). At MP 96.6, the route would cross under the BNSF railroad tracks to the north side of the ROW, paralleling the shoulder of Yermo Road. The Calico Fault Zone is crossed near MP 96.2. A western segment of the Manix Fault is crossed near MP 99 and the approximated or concealed central segment of the Manix Fault is crossed between MPs 107 and 108 (Figure 3.2-3, Map 2). The Dolores Lake Fault is crossed near MP 101.5.

The route continues to parallel the railroad and Yermo Road, crossing Alvord Mountain Road at MP 107.3 near the town of Manix. It continues in Quaternary alluvium (map unit Q). Several southerly-draining tributary washes to the Mojave River are crossed between MP 112.7 and MP 122.5 (Figure 3.2-3, Map 2). The route would cross under I-15 at MP 117.8. The route parallels Arrowhead Trail Road along the north side of I-15 and gradually climbs out of the Mojave River Valley. The route would encounter loosely consolidated alluvial fan deposits of Pliocene and/or Pleistocene age (map unit QPc) between about MP 120.1 and MP 121.2, where it would encounter a zone of Mesozoic granitic rocks (map unit grMz) between MP 121.2 and MP 121.6.

The route continues parallel to the existing Calnev Pipeline System along the north side of I-15 through the Cronise Valley (Figure 3.2-3, Map 2) crossing washes at MP 125.1 and MP 127.7. Between MP 121.6 and MP 131.2, the route would cross Quaternary alluvium (map unit Q). From MP 131.2 to MP 132.8, the route climbs out of the valley across Tertiary volcanic flow rocks (map unit Tv), where several drainages are crossed. The summit of the Soda Mountains is at MP 132.4 where the route begins to descend across more of Tertiary volcanic flow rocks (map unit Tv) followed by Quaternary alluvium from MP 132.8 to MP 137.7. The route crosses a wash several times near Zzyzx Road between MP 135.5 and 138.5 (Figure 3.2-3, Map 2). The Zzyzx Alternative route would diverge from the existing pipeline ROW at MP 137.4 for 1.4 miles, crossing the same Quaternary alluvium. The route encounters additional Mesozoic granitic rocks (map unit grMz) at MP 137.7 to MP 138.1 before entering into Quaternary alluvium (map unit Q). At MP 138.7, the route would cross 0.6 miles of Tertiary sandstone, shale, conglomerate, breccia, and ancient lake deposits (map unit Tc). The Baker Fault Zone is crossed between MP 138.6 to MP 140.5; the fault itself is near MP 140.7 and several small washes. From MP 139.3 to MP 143.9, the route would cross Quaternary alluvium (map unit Q). The route would then cross a brief stretch of Permian marine sedimentary rock including shale, conglomerate, limestone and dolomite, sandstone, slate, homfels, and quartzite (map unit Pm) until MP 144.3.

The Proposed route and the Baker Alternative route would rejoin again at MP 145.5 at the town of Baker. Both routes cross the interspersed segments of Quaternary alluvium, Permian marine sedimentary rock, and Mesozoic granitic rock (map units Q, Pm, and grMz, respectively) between MP 144.3 and MP 145.2. California Highway 127 is crossed at MP 145.7 in Baker near the intersection with Silver Lake. The proposed Silver Lake Pump Station would be located in this area.

From the Highway 127 crossing, the route continues to parallel the existing Calnev Pipeline System and climbs a large Quaternary alluvial fan (Figure 3.2-3, Map 2, map unit Q). It crosses Halloran Springs Road at MP 158.2 and reaches Halloran Summit Road at MP 164.2, where it may encounter stretches of Mesozoic-aged granitic rock (map unit grMz) until about MP 165 (Figure 3.2-3, Maps 2 and 3). Several washes are crossed through Halloran grade between MP 156.5 and MP 162.5. The route descends slightly, crossing through Shadow Valley and two washes between MP 169 and MP 171 (Figure 3.2-3, Map 3). It crosses Cima Road at MP 171.1 within Quaternary alluvium (map unit Q) before climbing gradually to Mountain Pass. A wash is crossed between MP 175.7 and 176.7 before reaching Mountain Pass (MP 177.5) where the route may encounter some localized areas of Paleozoic (Cambrian) marine metasedimentary and limestone deposits (map units Ca). Bailey Road is crossed at Mountain Pass, where the route then parallels Wheaton Wash and the north side of I-15. The route would then cross alternating stretches of Cambrian and Devonian marine metasedimentary and limestone deposits (map units Ca and D, respectively) until crossing Precambrian marine metasedimentary rock (map unit pC) consisting of conglomerate, shale, sandstone, limestone, dolomite, marble, gneiss, and quartzite.

The existing pipeline ROW crosses under I-15 and Wheaton Wash near MP 182.5 where the route traverses Quaternary alluvium (map unit Q). The Proposed route in this area would traverse some Precambrian marine metasedimentary rock areas before it crosses under I-15 and rejoins the existing pipeline ROW at MP 185.9. From Nipton Road (MP 185.5), the proposed route descends a Quaternary alluvium (map unit Q) into the Ivanpah Valley and across Ivanpah Lake (dry). The route crosses the potentially active Stateline Fault at approximately MP 194.7 (Figure 3.2-3, Map 3), just before crossing the Nevada state-line.

CA-NV State Line to Las Vegas. The CA-NV state line to Las Vegas route segment starts at MP 195 near the California-Nevada state-line, and extends northward to near MP 233.5, just south of Las Vegas Nevada. The pipeline route from CA-NV state line to the end point in Las Vegas would encounter unconsolidated to semi-consolidated young to old Quaternary alluvial fan deposits, active wash deposits at drainage crossings, playa lake deposits, eolian sand deposits, welded and nonwelded silicic ash-flow tuffs, andesite and basalt flows, and limestone. The surrounding bedrock hills along the route consist of basalt, andesite, limestone and dolomite.

Northeast of the state-line the pipeline route traverses Ivanpah Valley along Quaternary alluvial deposits (Figure 3.2-3, Map 4, map unit Qa). The route is located about one mile east of I-15 and follows the west side of the Union Pacific railway starting at about MP 197. East Prim Boulevard is crossed at MP 195.7. From MPs 198.2 to 201.6 (Figure 3.2-3, Map 4), the route crosses a flat playa deposit (map unit Qp); it then crosses a tributary at MP 201.8 that drains into the playa. The route gradually climbs, following Quaternary alluvial deposits, crossing another small tributary drainage at MP 204.5 and continuing to parallel the railroad tracks. At MP 207.9 (Figure 3.2-3, Map 4), the route passes the town of Jean and crosses Prison Road leading to the Southern Nevada Correctional Center. At MP 210.9, the route would cross 0.3 miles of Tertiary ash-flow tuffs (map unit Tt3). At MP 211.5 the route would cross Union Pacific Railroad tracks and parallels the east side of South Las Vegas Boulevard, crossing tributary drainages at MP 212.7 and 213.3.

At about MP 215.5 (Figure 3.2-3, Map 4), the route reaches the drainage divide between Ivanpah Valley and Las Vegas Valley, where it begins a gradual descent into Las Vegas, still paralleling South Las Vegas Boulevard in Quaternary alluvial deposits. The route would cross a section of Tertiary ash-flow tuffs (map unit Tt3) between MP 211.8 and MP 212.3, before reentering Quaternary alluvial deposits. From MP 217.5 to MP 218.3, the route would cross Tertiary andesite and basalt flows (map unit Tba) and then cross back into Quaternary alluvial deposits. Small drainages are crossed at MPs 217.3 and 219.1. Scattered business and industrial developments start occurring along the route at about MP 222 (Figure 3.2-3, Map 4) as the route enters the outskirts of the Las Vegas metropolitan area. The route would cross a small sliver (less than 0.1 miles) of Mississippian limestone (map unit Mc) at 221.5. From MP 221.5 to the end of the proposed pipeline route, the route crosses Quaternary alluvial deposits (map unit Qa). Residential developments are located east of the route starting at MP 224. Saint Rose Parkway (State Highway 146) is crossed at MP 223.6. Just before MP 226 at East Cactus Avenue, the route turns west crossing under I-15 at MP 226.5 and then turns north, parallel to South Valley View Boulevard. The western route crosses the Duck Creek drainage on the east side of I-15 and a small tributary to Duck Creek at MP 228.2. There are several large road crossings between MP 229 and the termination at MP 233.4 (Figure 3.2-3, Map 4). Crossings include Blue Diamond Road, West Warm Springs Road, I-215 and West Sunset Road.

3.2.1.3 Faults/Seismicity

The pipeline route traverses terrain with a long history of complex Mesozoic and Cenozoic tectonics associated with mountain building and development of basins and linear valleys. Throughout the late Tertiary and Quaternary, extensive strike-slip faults, thrust faults, and normal faults developed in the wake of the San Andreas transform fault system becoming the boundary between the mobile North American Plate and Pacific Plate. As a result, many faults were abandoned as others newly formed to transfer or accommodate upper crustal movements throughout the Quaternary. The major Quaternary fault zones consist of right-lateral (dextral) strike-slip faults, with some en echelon left-lateral (sinistral) faults. The major fault zones near the route are shown on the Regional Fault Map, Figure 3.2-4.

The pipeline would cross several active and potentially active fault zones, including branches of the San Jacinto fault zone, San Andreas fault zone and several other faults in the Mojave Desert associated with the Eastern California Shear Zone (ECSZ). At least two faults associated with the Las Vegas Valley fault zone would also be crossed near the end of the route in Las Vegas. Fault traces within the Las Vegas Valley fault zone are normal type faults, fault traces within the ECSZ are oblique-slip, and other faults crossed (e.g. San Andreas and San Jacinto) are right lateral strike-slip faults. Faults crossed by the route are presented in Table 3.2-3 based on 1:24,000 scale or smaller geologic maps provided by the CGS and the United States Geological Survey (USGS). Fault characteristics and activity are also presented in Table 3.2-3.

Fault crossings could pose engineering and construction challenges. Where the pipeline crosses from unconsolidated sediments into bedrock units separated by faults, differential subsidence is possible. In mountainous areas, high groundwater is commonly encountered when boring through faults, resulting in releases that damage equipment and create safety hazards.

Additional detailed fault and seismicity information is included in the baseline geology and geohazards assessment prepared by Calnev (URS Corporation 2008).

Fault Rupture

Most of the faults identified in Table 3.2-3 are within California earthquake fault zones (EFZs) (formerly Alquist-Priolo Special Studies Zones) in California. EFZs have been designated by the State of California and are typically one-quarter of a mile wide or less, and are delineated along active faults. As defined by the State, active faults are faults that have resulted in ground rupture during the Holocene time period (approximately 10,000 years).

Potentially active faults, exhibiting surface movement or rupture during Quaternary time (documented movement within past 2 million years), also present fault rupture hazards. Typically, sufficient detailed studies for these faults may not exist. Potentially active faults that could cause surface rupture during the anticipated project lifetime. Faults in the Mojave Desert that are currently classified as potentially active, especially those near the ECSZ, may represent a moderate potential rupture hazard risk.

Active faults are considered to have the potential for renewed movement within the design life of typical engineered structures. A number of active faults near the route may pose seismic shaking hazards, but are not considered fault rupture hazards because they do not cross the ROW.

San Andreas System

The pipeline route traverses through the complex neotectonic structure of the active San Andreas Fault System between Colton and the Cajon Pass region. The dominant and most well known structures are the northwest-oriented right-lateral strike-slip fault zones of the San Andreas, San Jacinto, and Elsinore Fault Zones. Consequentially, the right-slip displacements of these fault zones have contemporaneous compressional and uncommon extensional faults, such as the Cucamonga Fault Zone and the left-slip Cleghorn Fault, respectively (Morton and Miller 2006). In the San Bernardino Valley area, the extensional San Bernardino basin, filled by Quaternary deposits occurs between the San Andreas and San Jacinto Fault Zones (Morton and Miller 2006).

Within the Transverse Ranges Province, the San Andreas Fault Zone is a well-expressed continuous fault zone with active and older abandoned fault strands. Older fault zones within the Transverse Ranges Province that are considered inactive by Morton and Miller (2006) are primarily the San Gabriel, Punchbowl, and the north branch of the San Bernardino segment. However, these fault zones may be still potentially active and/or active according to the EFZ maps in the Southern California region (California Department of Conservation 2003). In Figure 3.2-5, the faults mapped as EFZs are shown in bold red letters and drawn in black.

The Transverse Ranges are one of the more seismically active regions in the world. The segments identified as associated with the San Andreas Fault Zone of the Transverse Ranges include the Mojave, the San Bernardino (North) and Mill Creek faults. Some of these segments, as well as the San Jacinto Fault Zone, have produced major earthquakes in historical times. The Mojave segment earthquakes include the estimated M_w 7.5 Wrightwood earthquake in December 1812 and the January 1857 approximate M_w 7.9 Fort Tejon earthquake. The Wrightwood earthquake epicenter location is uncertain; however, evidence suggests that it was near the town of Wrightwood and possibly had 106 miles of surface ruptured within the Mojave segment through Tejon Pass and Cajon Pass (Southern California Earthquake Center [SCEC] 2008). The Fort Tejon earthquake epicenter location is uncertain, but is estimated to have been forty-five miles northeast of San Luis Obispo; it had 225 miles of surface rupture that terminated near Cajon Pass with a maximum displacement of 30 feet (SCEC 2008). The San Jacinto Fault Zone also had some notable historical earthquakes including the estimated M_L 5.7 July 1899 Cajon Pass earthquake, the local magnitude (M_L) 6.3 July 1923 North San Jacinto earthquake, and the M_L 5.2 September 1970 Lytle Creek earthquake (SCEC 2008). The Lytle Creek earthquake struck near Cajon Pass and induced numerous rockfalls and landslides in the San Gabriel and San Bernardino Mountains.

The San Bernardino (north and south) segments also referred as the south branch of the San Andreas Fault is considered the active section of the San Andreas between the Salton Sea and Cajon Pass. This area has not ruptured in historic times (i.e., the last two hundred years); The Working Group on California Earthquake Probabilities estimated that the southern San Andreas Fault had a 59 percent chance for at least a moment magnitude (M_w) ≥ 6.7 earthquake to occur during the 30 year period between 2007 and 2037.

Eastern California Shear Zone

The ECSZ extends northerly across the western half of the Mojave Desert Province, is bounded to the west by the Helendale-South Lockhart Fault Zone and to the east near the Calico-Hidalgo and Pisgah-Bullion fault zones (Figure 3.2-3). Faults include, from west to east, the northwest striking Helendale-South Lockhart Fault Zone, Lenwood-Lockhart Fault Zone, and Harper-Camp Rock Fault Zone (Figure 3.2-3).

Table 3.2-3 Significant Pipeline Fault Crossings and Faults in the Vicinity of the Pipeline

Approximate Mileposts [d]	Distance from Pipeline	Fault Name (segment)	Fault Zone	Type of Faulting [a]	Fault Length [a,b] (kilometers)	Slip Rate (millimeters per year)	Maximum Moment Magnitude [a, b] (M_w)	Age and Evidence of Latest Activity
MPs 11.0 – 12.5	0	San Gabriel FZ multiple strands (San Bernardino)	San Jacinto	Rl, ss	36	6 ±4	6.7	San Jacinto (north) FZ: Historic July 22, 1899 M_L 5,7; July 22, 1923 M_L 6.3; Sept. 12, 1970 M_L 5.2
MPs 13.0 – 14.0 (MP 13.5)	0	Glen Helen						Holocene
Glen Helen (MP 1.0)	0							
MPs 20.75 – 21.0	0	San Bernardino n (Punchbowl)	San Andreas	Rl, ss	103 [c]	22 ± 6	7.5	Holocene
MPs 21.0 – 22.0 (MP 21.4)	0	San Bernardino (North)						
3 miles northwest of MP 21.0	0	Mohave (South)	San Andreas	Rl, ss	103 [c]	29 ±	7.4	Historic; Jan 9, 1857 M_L 7.9 (approximately) 30-ft max surface displacement
MPs 23.75 – 25.0 (MPs: 24.0, 24.3, 24.5)	0	Cleghorn Southern	Cleghorn	Ll, ss	25	3 ±2	6.5	Late Quaternary
MPs 62.5 – 63.0 (MP 62.6)	0	Helendale	Helendale-South Lockhart	Rl, ss	97	0.6 ±0.4	7.3	Holocene; Late Quaternary
MPs 77.5 – 78.0 (MP 77.85)	0	Lenwood	Lenwood-Lockhart	Rl, ss	145	0.9 ±0.4	7.5	Holocene; Historic: SE end exhibited triggered slip during 1992, a result of the Landers quake
MPs 85.5 – 87.0	0	Harper Lake	Harper-Camp Rock	Rl, ss	21	0.7 ±0.4	6.0 – 7.1	Late Quaternary

Table 3.2-3 Significant Pipeline Fault Crossings and Faults in the Vicinity of the Pipeline

Approximate Mileposts [d]	Distance from Pipeline	Fault Name (segment)	Fault Zone	Type of Faulting [a]	Fault Length [a,b] (kilometers)	Slip Rate (millimeters per year)	Maximum Moment Magnitude [a, b] (M_w)	Age and Evidence of Latest Activity
MPs 96.0 – 96.6 (MP 96.3)	0	Calico	Calico-Hidalgo	Rl, ss	95	1.8 ±0.4	7.3	Holocene; exhibited triggered slip during 1992 as a result of the Landers quake
MPs 99.0 – 100.0 (MP 99.1- western segment) center third segment is about 1.3-mi SE of MP 109	0	Manix (3 segments)	Manix	Ll, ss (oblique)-r	~35	<0.1	6.0 – 7.0	Historic; April 10, 1947, M_w6.5 and Holocene along center third, Late Quat. along eastern third, & Quat along western third (~ 2-iches of surface displacement)
MPs 141.0 – 142.0	0	Baker	Baker	uncertain	~45	NA	NA	Late Quaternary far south end/ undifferentiated Quaternary
(MPs 231.5 – 231.8) (MPs 233.4 – 233.5)	0	Decatur and Valley View	Las Vegas Valley	n	NA	NA	NA	Holocene activity, uncertain Historic – groundwater subsidence related faults and fissures

Source: URS 2008

Notes:

[a] Rl = right-lateral; Ll = left-lateral; ss = strike-slip; n = normal; r = reverse; NA

[b] Moment magnitudes (denoted M_w), for earthquakes above magnitude 6, and local magnitudes (denoted M_L), for most earthquakes below magnitude 6 and for earthquakes which occurred before accurate instrumental measurements of magnitude were possible (*i.e.*, before 1933)

[c] San Andreas fault length includes south and north segments.

[d] Fault crossing preferred route. Approximately located using 1:24,000 map scale.

Other faults: Peters fault, Dolores Lake fault, and CA-NV Stateline Fault (late Quaternary age and might be considered active but is concealed near route crossing).

The ECSZ is a highly seismically active region. The north and northwest striking oblique ruptures of the M_w 7.3 1992 Landers earthquake also ruptured several nearby faults, including sections of Johnson Valley, Homestead, Emerson, and Camp Rock Faults (these faults were classified as potentially active). The Calico and Calico West Faults experienced triggered slip during the 1992 Landers earthquake.

The 1997 M_w 5.3 Calico earthquake along the northern end of the Calico Fault was interpreted as one of the last major aftershocks of the 1992 Landers earthquake (SCEC 2008).The 1999 M_w 7.1 Hector Mine earthquake also ruptured of the Lavic Lake Fault and the central section of the Bullion Fault (SCEC 2008). The sinistral Manix Faults are approaching the eastern margin of ECSZ. In 1947, the Manix Fault experienced an M_w 6.5 earthquake, with a surface rupture length of about three miles and a maximum of two inches of left lateral displacement (SCEC 2008).

Las Vegas Valley

The Eastern Mojave Desert province merges with the Basin and Range province in the southwestern U.S. Late Tertiary extension resulted in pull-apart basins of regional strike-slip and normal faulting and includes the LVVSZ, the Las Vegas intra-valley related faults, and the CA-NV Stateline Fault Zone (Figure 3.2-3) (Page et al. 2005). Las Vegas Valley was formed as a basin filled graben ranging from two to five kilometers deep during the Late Cenozoic period of extension. Geophysical studies suggest that the LVVSZ is a northwest-striking, right-lateral strike-slip fault zone that extends 150 kilometers from Mercury, Nevada, southeast to south of the Frenchman Mountains near the Lake Mead area. The LVVSZ is a 20 kilometer wide zone of clockwise rotation that experienced its principal movement between 14 and 8.5 million years ago (Page et al. 2005).

A series of normal and strike-slip faults cut across Quaternary deposits in the Las Vegas Valley region and developed high angle fault scarps. According to Slemmons et al. (2001), there are seven Quaternary fault zones, including the Frenchman Mountain, Whitney Mesa, Cashman, Valley View, Decatur, Eglington, and West Charleston Fault Zones. According to Bell et al. (2002), the Las Vegas Valley intra-valley faults developed four structurally controlled bowls.

Las Vegas Valley exhibits a prominent set of fault scarps in fine-grained sediments as a result of ground-water withdrawal-related subsidence. These faults are mapped as the Eglington Fault in the northwest area of the valley, Windsor Park Faults in the central valley, Decatur Fault and Valley View Fault in the west and southwest, Cashman Fault field in the east, and Whitney Mesa Fault in the southeast margin of the valley.

As shown in Figure 3.2-3, Map 4, the north- and northwest-trending Decatur and Valley View Faults appears to cross the pipeline route. These faults form discontinuities and barriers to the stratigraphically controlled basinward ground-water flow. The Valley View Fault creates the historically active artesian springs. There are no significant historic seismic events related to the Las Vegas intra-valley faults however, movements do occur along these fault traces and are believed to be related to groundwater withdrawal and regional tectonics (Page et al. 2005).

Regional Historic Earthquake Events and Historic Displacement Events Along the Existing Calnev Pipeline System

Project construction would primarily take place in an existing ROW. According to Project records, no displacement events have occurred along the existing Calnev system.

Historic regional earthquake activity is presented in Table 3.2-4. This table includes earthquakes with a magnitude of 5.0 or higher on the Richter scale that have occurred within 100 miles of the proposed route since 1900. Figure 3.2-6 shows regional distribution of these data.

Table 3.2-4 Earthquake History 5.0 Magnitude or Greater Within 100 Miles of the Pipeline

Year	Magnitude	Latitude	Longitude	Distance from Pipeline in Miles
2008	5.10	34.813	-116.419	14.84
2008	5.06	34.813	-116.419	14.84
2008	5.40	33.953	-117.761	22.11
2008	5.39	33.953	-117.761	22.11
2005	5.60	33.500	-116.600	58.67
2005	5.20	33.529	-116.573	58.56
2004	5.03	35.390	-118.624	86.90
2002	5.30	34.796	-118.455	61.07
2001	5.50	34.657	-115.791	40.87
2001	5.02	33.508	-116.514	62.11
2001	5.17	36.016	-117.874	91.84
1999	7.10	34.594	-116.271	32.04
1999	6.67	33.787	-116.640	45.74
1999	5.77	34.678	-116.290	26.30
1999	5.37	34.441	-116.252	42.09
1998	5.04	36.076	-117.618	89.70
1998	5.23	36.067	-117.638	89.50
1997	5.07	34.369	-118.670	67.99
1997	5.26	34.971	-116.819	4.38
1996	5.30	36.075	-117.650	90.25
1996	5.17	35.761	-117.646	70.32
1995	5.52	35.756	-117.630	69.61
1995	5.75	35.761	-117.638	70.12
1995	5.36	35.776	-117.662	71.65
1995	5.02	34.394	-118.669	68.00
1994	5.24	34.231	-118.475	57.21
1994	5.06	34.306	-118.579	62.80
1994	5.06	34.379	-118.712	70.41
1994	5.07	34.378	-118.619	65.10
1994	5.24	34.377	-118.698	69.61
1994	6.70	34.213	-118.537	60.89
1994	6.70	34.216	-118.538	60.92
1994	5.89	34.275	-118.493	57.97
1994	5.20	34.340	-118.614	64.77
1994	5.58	34.326	-118.698	69.58
1993	5.00	34.029	-116.321	59.83
1992	5.26	34.369	-116.898	29.49
1992	5.29	34.340	-116.900	29.71
1992	5.26	34.064	-116.361	57.48
1992	5.23	34.195	-116.863	29.88
1992	5.67	35.210	-118.067	55.01
1992	5.42	34.583	-116.322	31.57
1992	5.34	34.330	-116.464	43.66
1992	5.40	36.698	-116.289	74.06

Table 3.2-4 Earthquake History 5.0 Magnitude or Greater Within 100 Miles of the Pipeline

Year	Magnitude	Latitude	Longitude	Distance from Pipeline in Miles
1992	5.69	34.105	-116.403	55.12
1992	5.08	34.105	-116.390	55.87
1992	7.30	34.200	-116.437	52.63
1992	5.77	34.131	-116.408	54.95
1992	5.70	34.120	-116.323	59.76
1992	5.00	34.060	-116.473	51.06
1992	5.00	34.103	-116.425	53.86
1992	5.49	34.115	-116.426	53.84
1992	5.41	34.341	-116.511	42.09
1992	5.53	34.162	-116.852	30.06
1992	6.30	34.203	-116.827	31.97
1992	5.26	34.255	-116.912	27.56
1992	6.10	33.960	-116.317	60.47
1991	5.80	34.270	-117.993	29.51
1990	5.51	34.144	-117.697	15.38
1988	5.03	33.979	-116.681	39.59
1988	5.02	34.151	-118.130	38.65
1988	5.34	37.089	-116.049	83.59
1988	5.37	34.943	-118.743	79.30
1987	5.25	34.074	-118.098	38.31
1987	5.90	34.061	-118.079	37.61
1987	5.35	37.061	-116.045	81.89
1986	5.20	37.100	-116.048	84.18
1986	5.45	32.971	-117.874	80.08
1986	5.65	33.999	-116.608	43.57
1985	5.16	37.053	-116.045	81.44
1985	5.26	37.095	-116.032	83.39
1984	5.38	37.127	-115.973	83.47
1984	5.21	37.066	-116.046	82.20
1983	5.22	37.073	-116.046	82.59
1982	5.12	35.743	-117.756	72.25
1982	5.31	37.105	-115.930	80.94
1982	5.15	37.069	-116.046	82.37
1982	5.06	37.091	-116.051	83.76
1981	5.08	37.108	-116.049	84.66
1981	5.26	37.087	-116.045	83.35
1980	5.13	37.101	-116.031	83.70
1980	5.34	33.475	-116.500	64.17
1979	5.32	37.088	-116.053	83.66
1979	5.23	34.326	-116.416	44.91
1979	5.20	37.102	-116.055	84.51
1979	5.21	33.916	-118.687	73.81
1978	5.31	37.074	-116.020	81.83
1978	5.18	37.079	-116.044	82.87
1978	5.17	37.102	-116.051	84.39
1978	5.17	37.124	-116.064	86.04
1977	5.29	37.136	-116.086	87.41
1977	5.34	37.072	-116.050	82.66
1977	5.34	37.110	-116.055	84.97
1977	5.02	37.094	-116.045	83.74
1977	5.05	37.095	-116.028	83.27

Table 3.2-4 Earthquake History 5.0 Magnitude or Greater Within 100 Miles of the Pipeline

Year	Magnitude	Latitude	Longitude	Distance from Pipeline in Miles
1977	5.13	37.120	-116.062	85.75
1976	5.13	37.100	-116.037	83.83
1976	5.39	37.107	-116.052	84.70
1976	5.11	37.069	-116.030	81.86
1976	5.14	37.107	-116.037	84.23
1975	5.18	37.128	-116.062	86.21
1975	5.29	37.095	-116.036	83.52
1975	5.28	34.512	-116.488	31.53
1975	5.09	37.134	-116.084	87.24
1975	5.21	37.106	-116.056	84.77
1974	5.28	37.153	-116.083	88.28
1974	5.08	37.068	-116.032	81.86
1972	5.10	37.082	-116.038	82.84
1971	5.01	37.110	-116.051	84.84
1971	6.60	34.416	-118.370	51.09
1971	5.80	34.416	-118.370	51.09
1971	5.80	34.416	-118.370	51.09
1971	5.30	34.416	-118.370	51.09
1970	5.19	37.143	-116.034	86.21
1970	5.22	34.255	-117.534	3.80
1970	5.00	37.086	-116.021	82.54
1970	5.10	37.098	-116.026	83.38
1969	5.09	37.143	-116.064	87.12
1969	5.46	33.259	-116.361	80.10
1968	6.60	33.180	-116.103	94.82
1967	5.21	37.116	-116.058	85.40
1965	5.03	37.165	-116.052	88.02
1965	5.14	34.714	-116.432	20.67
1963	5.29	33.704	-116.938	34.85
1963	5.39	37.060	-116.022	81.10
1961	5.13	35.864	-117.795	80.54
1961	5.05	35.758	-118.041	82.59
1957	5.05	33.223	-116.028	96.35
1954	6.40	33.298	-116.081	90.80
1954	5.48	33.209	-116.098	93.77
1952	5.64	35.249	-118.497	75.42
1952	5.72	35.357	-118.895	98.44
1952	5.19	35.403	-118.820	96.50
1952	5.55	35.332	-118.463	77.26
1952	5.62	35.304	-118.468	76.30
1952	5.43	35.372	-118.565	83.50
1952	5.07	35.378	-118.628	86.59
1952	5.55	34.988	-118.803	83.43
1952	5.51	35.166	-118.799	87.56
1952	5.13	34.996	-118.930	90.50
1952	7.50	34.958	-118.998	93.58
1952	5.40	35.000	-119.000	94.40
1952	5.18	35.000	-119.000	94.40
1952	5.20	35.020	-118.830	85.55
1952	5.19	35.115	-118.792	85.79
1951	5.75	32.916	-118.305	94.77

Table 3.2-4 Earthquake History 5.0 Magnitude or Greater Within 100 Miles of the Pipeline

Year	Magnitude	Latitude	Longitude	Distance from Pipeline in Miles
1949	5.69	34.000	-115.696	83.02
1948	6.00	33.983	-116.331	59.49
1947	5.24	34.030	-116.406	54.96
1947	5.30	33.994	-116.481	50.85
1947	6.50	34.983	-116.531	1.70
1947	5.00	35.017	-116.719	5.42
1946	5.51	34.502	-115.915	46.47
1946	5.24	35.779	-117.778	75.01
1946	5.43	35.723	-117.941	77.14
1946	6.30	35.702	-117.944	76.12
1946	5.19	35.691	-117.750	69.04
1946	5.43	35.678	-117.820	70.53
1946	5.04	35.697	-118.052	79.88
1944	5.06	33.989	-116.731	36.65
1944	5.24	34.002	-116.699	38.35
1943	5.11	34.370	-115.819	57.07
1943	5.28	34.268	-116.968	24.62
1941	5.12	33.791	-118.264	53.10
1941	5.10	34.838	-118.933	88.11
1940	5.03	32.966	-116.315	96.89
1940	5.31	34.089	-116.282	62.02
1940	5.20	34.037	-116.306	60.67
1938	5.23	33.699	-117.511	25.90
1937	6.00	33.400	-116.250	78.77
1933	6.40	33.631	-117.999	45.57
1933	5.02	33.767	-117.985	39.36
1933	5.29	33.624	-118.001	45.97

3.2.1.4 Seismic Shaking

Figure 3.2-9 presents estimated peak ground acceleration (PGA) along the route with a 10 percent probability of being exceeded during a 50 year period. Values represented by map patterns represent the anticipated force as a percentage of gravity, i.e., the acceleration of gravity (g). The map is derived from seismic hazard curves calculated on a grid of sites across the southwestern U.S. that describe the frequency of exceeding a set of ground motions. The ground motions relate the source characteristics of the earthquake and propagation path of the seismic waves to the ground motion at a site. The predicted ground motion is typically quantified in terms of a median value (a function of magnitude, distance, style of faulting, and other factors) and a probability density function of peak horizontal ground acceleration (USGS 2008).

The values depicted on Figure 3.2-9 are not adjusted for underlying rock type (e.g., loose sand vs. bedrock) and do not include ground acceleration variations associated with short or long frequency seismic energy releases. These values are presented for impact assessment only, and should not be used for engineering design. Actual peak ground accelerations generated by historic earthquakes along the pipeline route (e.g., Landers Earthquake) far exceeded the 10-year probability values shown on Figure 3.2-9 for that region.

The seismic shaking potential for the pipeline route is greatest in the vicinity of Cajon Pass. The map indicates a PGA of 0.8 to 1.0 g in this area, associated with the San Jacinto and San

Andreas Fault Zones. In other words, there is a 10-percent probability for seismic induced ground motions to exceed 0.8 to 1.0 g during a 50-year period. Local ground motions exceeding 0.8 to 1.0 g cause extensive damage to above ground structures and some buried facilities.

The seismic shaking potential decreases from 0.8 g to about 0.5 g south of Cajon Pass toward Colton. North from highway 138 in Cajon Pass, the seismic shaking potential decreases from 0.8 g to about 0.4 g near the California aqueduct crossing. The PGA further decreases to about 0.2 g to near the eastern margin of the ECSZ. As the pipeline traverses across the eastern Mojave Desert to the CA-NV state line, there is a gradual decrease in seismic shaking potential from 0.2 to 0.07 g. From CA-NV state line to Las Vegas, there is a very slight increase in PGA to 0.08 g due to the strain accumulation within the LVSZ. Thus, the shaking potential gradually decreases as the pipeline traverses across the Mojave Desert from west to east.

3.2.1.5 Landslides

A landslide is the movement of soil, rock, or other earth material downhill in response to gravity (USGS 2004). Several natural events can precipitate landslides, including earthquakes (discussed in Section 3.2-3), volcanic eruptions, and most commonly, rainfall. In addition, human activity can also cause landslides.

The USGS National Landslide Hazards Program prepared an overview map of landslide incidence and susceptibility by evaluating the geologic map of the United States and classifying the geologic units according to high, medium, or low landslide incidence (number of landslides) and high, medium, or low susceptibility to landslides. Table 3.2-5 provides a summary of MP crossings and number of acres involved in each of the segments. The one area that has moderate susceptibility and/or incidence of landslides is discussed further below.

The areas of landslide incidence and/or susceptibility are based on data from the USGS Landslide Hazards Program and shown on the Landslide Incidence Overview Map (Figure 3.2-7).

Colton to Cajon Pass

The pipeline route does not extend across mapped landslides between Colton and Cajon Pass. However, between MPs 13.6 and 13.7, the route traverses steep terrain. The Pelona Schist in this area is highly fractured and may be prone to seismic induced landslides (Figure 3.2-7).

Table 3.2-5 Summary of Preliminary Landslide Susceptibility and Incidence Evaluation Results

Route Segment (MP)	Milepost Interval	Geographic Feature	Geologic Formations [1]	Incidence/Susceptibility [2]
Colton to Cajon Pass (0 to 16.0)	11 to 16	Cajon Wash	Young alluvium	Low to Moderate
Cajon Pass (16.0 to 30.0)	16 to 19.	Cajon Wash	Wash deposits and young alluvium	Low to Moderate
	20 to 25			
Cajon Pass to Barstow (30.0 to 90.0)	36 to 37	California Aqueduct	Young fan deposits	Low
	53 to 56	Mojave River	Wash deposits Young alluvium	Low
	86 to 90	Mojave River	Young to old alluvium	Low
Barstow to CA-NV state line (90.0 to 195.0)	90 to 109	Mojave River Valley	Young to old alluvium	Low
	145 to 146	Mojave River (Baker)	Wash and lake bed deposits	Low
	190.5 to 194.0	Ivanpah Lake	Playa deposits	Low

Table 3.2-5 Summary of Preliminary Landslide Susceptibility and Incidence Evaluation Results

Route Segment (MP)	Milepost Interval	Geographic Feature	Geologic Formations[1]	Incidence/Susceptibility[2]
CA-NV state line to Las Vegas (195.0 to 233.5)	228.0 to 233.5	Las Vegas Valley	Young to old alluvium	• Low
	226.5 to end			

Source: URS Corporation 2008

According to the USGS (2009), Moderate landslide incidence is indicated between mileposts 13.92 to 16 where the Pelona Schist outcrops and where there are areas of steep slopes.

Cajon Pass

Young and old landslides (Qyls and Qols, respectively) have been mapped along the steep western and eastern slopes of Cajon Pass (Figure 3.2-3, Map 1). However, the pipeline route is not within the toe of mapped landslide slopes. Within the San Andreas Fault Zone near the Punchbowl Fault between MPs 20.6 and 20.9, the route traverses the toe of steep slopes composed of Pelona Schist. Pelona Schist is highly fractured and is prone to seismic induced landslides. Moderate landslide incidence is indicated between MPs 16 to 25.64 (USGS 2009). The majority of the topography through Cajon Pass is relatively gentle with some moderate relief that has a low potential for landslides.

The analysis presented in the baseline geology and geohazards assessment (URS Corporation 2008) considered more detailed published geological maps, as well as terrain analysis using Google Earth. A limited geologic reconnaissance along the pipeline route to field check suspected landslides also occurred. Based on the preliminary study, there are no areas where landslides are anticipated to present a significant geological hazard. This would be re-confirmed during detailed design.

3.2.1.6 Liquefaction

Strong ground motions can cause various types of ground failures, including liquefaction. Liquefaction occurs during extended periods of ground shaking, when pore water pressures increase and water-saturated sediments are temporarily altered from a solid to a liquid state. Pipeline buoyancy effects may cause pipeline damage. Liquefaction is most likely to occur in unconsolidated, granular sediments, which are water saturated to less than 30 feet below the ground surface (Tinsley et al., 1985).

The secondary effects of liquefaction can include the loss of load bearing capacity below foundations, settlement in level ground, and instability in areas of sloping ground (also known as lateral spreading). Typically, liquefaction occurs over a high water table (within 32 feet of the ground surface) (Dennen et al. 1986). Lateral spreading causing horizontal displacements that may damage pipelines and surface facilities.

The most susceptible liquefiable soils across the project are generally found along rivers, streams, and lake shorelines, as well as in some ancient river and lake deposits. The liquefaction hazard within the geologic setting of the Mojave Desert and Basin and Range can be intermittent inasmuch as many desert valleys have interior drainages, with local rainfall flowing towards an ephemeral lake in the lowest part of the basin. Although these dry lakes typically hold water for only a few weeks of the year, groundwater can be near the surface within the lakebeds and surrounding alluvium. Similarly, the Mojave River normally flows underground unless a severe flood event occurs and the local groundwater levels are raised.

The first portion of the alignment from Colton to Cajon Pass lies partially within a zone of high liquefaction susceptibility (Matti and Carson 1991). Liquefaction features have been noted in the Deep Springs Valley where they are expressed as accurate, steps and ridges (resembling fault scarps) along the margins of alluvial fans (Wills 1996). The pipeline route would traverse alluvial fans in similar geologic settings, wherein there could be some potential for liquefaction if strong seismic shaking were to accompany rainy periods.

URS (2008) concluded that, with the exception of the route segment between Colton and Cajon Pass, the overall liquefaction hazard is anticipated to be low based on the relatively deep occurrence of groundwater (Table 3.2-6). URS 2008 also concluded that a low to moderate liquefaction potential exists between MP 53 to 56 where the alignment parallels and crosses the Mojave River. The potential for liquefaction is anticipated to be relatively localized to drainage crossings that contain shallow groundwater or where the alignment crosses active channels of the Mojave River.

Liquefaction hazards at the Mojave River crossing near MP 54 may be substantially higher than indicated by URS. Flowing surface water indicates saturated sediments. It is anticipated that the fine loose saturated sand in the river bed would represent a high to very high liquefaction hazard.

Shallow groundwater may be present at times near the "dry lakes" along the pipeline route. If present, the liquefaction hazard at these locations could range from moderate to high based on depth to groundwater. If these sediments are moderately well cemented (e.g. caliche), then liquefaction potential might be low to moderate, depending on the degree of cementation present.

Table 3.2-6 Summary of Preliminary Liquefaction Evaluation Results

Route Segment	Milepost Interval	Geographic Feature	Geologic Formations ¹	Potential for Liquefaction
Colton to Cajon Pass (MP 0 to 16.0)	11 to 16	Cajon Wash	Young alluvium	High
Cajon Pass (MP 16.0 to 30.0)	16 to 19.	Cajon Wash	Wash deposits and young alluvium	Low
	20 to 25			
Cajon Pass to Barstow (MP 30.0 to 90.0)	36 to 37	California Aqueduct	Young fan deposits	Low
	53 to 56	Mojave River	Wash deposits Young alluvium	Moderate to Very High
	86 to 90	Mojave River	Young to old alluvium	Low
Barstow to CA-NV state line (MP 90.0 to 195.0)	90 to 109	Mojave River Valley	Young to old alluvium	Low
	145 to 146	Mojave River (Baker)	Wash and lake bed deposits	Low to Moderate
	190.5 to 194.0	Ivanpah Lake	Playa deposits	Low to Moderate

Table 3.2-6 Summary of Preliminary Liquefaction Evaluation Results

Route Segment	Milepost Interval	Geographic Feature	Geologic Formations 1	Potential for Liquefaction
CA-NV state line to Las Vegas (MP 195.0 to 233.5)	228.0 to 233.5	Las Vegas Valley	Young to old alluvium	Low
	226.5 to end			

Source: URS Corporation 2008.

Notes:

1. Depth to shallow groundwater is typically below at least 50 feet from the ground surface when there is no flow in any of the geographical features listed in the table that causes recharge of groundwater. The potential for liquefaction is estimated only based on significant flow in the rivers/washes/lakes.

3.2.1.7 Subsidence and Settlement

Several groundwater basins along and near the pipeline route have experienced subsidence primarily due to groundwater extraction. Land subsidence is caused by a variety of agricultural, municipal or mining practices that contribute to the loss of support materials within a geologic formation. Agricultural and municipal practices can result in the overdraft of a groundwater aquifer thereby causing aquifer settlement. Groundwater overdraft occurs when groundwater pumping from a subsurface water-bearing zone (aquifer) exceeds the rate of aquifer replenishment. The extraction of mineral or oil resources can also result in subsidence from removal of supporting layers in the geologic formation.

Differential settlement results from a variety of geologic causes, including groundwater extraction and differences between geologic units (especially units separated by faults). Differential settlement across broad areas (e.g. within the Las Vegas Valley) causes stress on buried linear structures, such as pipelines. Pipeline crossing faults, especially going from unconsolidated sediments into hard bedrock, may also be subject to differential settlement and associated stress.

Between Colton to Cajon Pass, USGS predicted land-surface subsidence of about 4 feet between 1965 and 2015, based on postulated water level declines and assuming imported water was not used to stop the lowering of groundwater levels (URS Corporation 2008). The digital hydraulic model used in this study indicated the decrease of groundwater storage in the area of maximum extraction would result in water level declines of as much as 380 feet, which could cause land-surface subsidence of about 26 feet.

Located between Cajon Pass and Barstow, the surface water in Mojave River and Morongo groundwater basins is minimal and normally limited to ephemeral flow during winter and spring storms and continuous flow from active springs. Because of the lack of significant surface water resources in these basins, groundwater has been the primary source of domestic, agricultural, and municipal water consumption since the early 1900s. Increased demand on local water supplies has resulted in overdraft conditions in some areas of the Mojave River and Morongo groundwater basins (USGS 2003a; as reported in URS Corporation 2008), which may lead to land subsidence.

Between Barstow and CA-NV state line, Interferometric Synthetic Aperture Radar and Global Positioning System techniques were used to detect and measure land subsidence in the Mojave Desert of San Bernardino County, California (USGS 2003b; as reported in URS Corporation 2008). The Newberry Springs Area of the land subsidence study, which is east of Barstow, coincides with a portion of the pipeline route (between MPs 88 and 135). The interferograms have indicated less than one foot of subsidence in this region between 1993 and 1996.

Subsidence and differential settlement due to groundwater extraction has been documented in the Las Vegas Valley area (Bell et al. 1992, 2002; Varnum 1987; as reported in URS Corporation 2008) with as much as 5 feet of subsidence since 1963. The subsidence and differential settlement are generally coincidental with existing mapped faults of the Las Vegas Valley Fault System, where fissures often form parallel to the mapped fault scarps along tension related cracks and are enhanced by surface water piping and erosion. These fissures have been reported to be up to 9 feet in width and 16 feet in depth (Bell et al. 1992; as reported in URS Corporation 2008). One of these mapped fissures coincident with the Decatur Fault is crossed by the route at MP 231.6 near the intersection of Sunset Road and Valley View Boulevard (Figure 3.2-3, Map 4). A leveling line survey completed by Varnum (1987) that crosses this mapped fault showed about 0.2 feet of subsidence over a 5,000-foot length between 1981 and 1987 with a gradual warping of the ground surface dropping down on the northeast side of the fault. No subsidence areas have been identified elsewhere along the route between CA-NV state line and the Las Vegas Valley.

Within Cajon Pass, the pipeline may traverse from alluvial sediments into granitic bedrock at fault contacts. Potential differential settlement hazards may be present at these fault crossings, especially with the Wagon Trail Road Alternative location near MP 24.

Potentially collapsible soils have been identified along a short segment of the route between about MP 232 and the end at MP 233.5 (Fini et al. 1991; as reported in URS Corporation 2008).

Based on the literature research for the baseline geology and geohazards assessment (URS Corporation 2008), subsidence has been documented only as a result of groundwater extraction within the study area. The potential for subsidence due to karst, pseudo karst, or mining features is considered very low considering the geologic setting and absence of large or commercial subsurface mining in the Project area.

3.2.1.8 Blasting

Potential blast areas may occur within hard rock areas, which are summarized by milepost. Any blasting would be conducted in accordance with blasting permits required by the various jurisdictions. Blasting would be required for pipeline trench excavation in areas where hard, non-rippable bedrock occurs and possibly to fracture surface rock as part of the initial grade work Specifications would include a blasting contract to control adverse impacts, including measures to minimize vibrations and flyrock, and measures for safe blasting practices near active pipeline, as needed. Blasting inspectors would be present to ensure that all specifications were met and to perform pre- and post-blast inspections of nearby structures and wells.

For the anticipated blasting needed along the Project route for rock excavation, structural impacts would be restricted to distances ranging from 5 to 20 feet from the blast. In most cases, blasting along the Project route would not be in areas where vibrations are critical. The same blast would produce effects that are unpleasant to humans at distances ranging from 80 to 250 feet, and effects that are perceptible to humans at distances ranging from 1,000 to 3,500 feet.

3.2.1.9 Additional Geotechnical Reports/Investigations to be Prepared by the Applicant

Geotechnical Investigation Program

A geotechnical investigation program would be developed and conducted to support Project design. Test borings are proposed at planned HDD (and possibly some jack-and-bore) crossings, including the Mojave River (northeast of Adelanto). Test borings proposed at the Mojave River would include Standard Penetration Tests (SPT) to support evaluations of liquefaction. The test borings are also planned to include obtaining relatively continuous core samples for laboratory testing of material strength.

The design level geotechnical investigation would include geologic evaluations to further evaluate the various geologic formations relative to their excavation characteristics. The mapping would include gathering field data including particle size, weathering, fracturing, and cementation. The geotechnical test borings planned at the HDD/pipe-jacking locations would also provide subsurface data to further assess anticipated trenching conditions.

Subsurface Explorations to Investigate Suspected Landslides

Subsurface explorations do not appear to be warranted to investigate suspected landslides, inasmuch as landslides have not been mapped as underlying the Project area.

Engineering Field Reconnaissance

An engineering geologic field reconnaissance and air photo interpretations would be performed as part of the design level geotechnical investigation to confirm the absence of landslides.

Exploratory Trenching

The need for exploratory trenching at pipeline-fault crossings is being assessed by the Applicant based on preliminary analyses of pipeline performance for anticipated fault displacements.

3.2.2 Applicable Regulations, Plans, and Policies

The Project would comply with all applicable laws, ordinances, regulations, and standards related to geologic hazards and resources during and following construction of the Project.

At the federal level, hazards analysis in the Code of Federal Regulations apply to the Project (30 CFR 250.204 (b)(1)(viii); 30 CFR 250.1007 (a)(5); 30 CFR 250.204(a)(17); and 30 CFR 250.909). The California Seismic Hazards Act of 1990 (California Public Resources Code Section 2690 and following as Division 2, Chapter 7.8); California Seismic Hazards Mapping Regulations (California Code of Regulations [CCR] Title 14, Division 2, Chapter 8, Article 10); and Alquist-Priolo Special Studies Zone Act of 1972 (California Public Resource Code Section 2621-2630) also apply to the Project. At a local level, the County of San Bernardino General Plan (URS Corporation 2007, Conservation Element) and Clark County Comprehensive Plan (2004, Conservation Element: Land Resources, Geology) apply to the Project.

3.2.3 Environmental Consequences

3.2.3.1 Requirements and Focus of NEPA versus CEQA Impact Analyses

Potential Impacts to be Evaluated under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential topography, geology, and geologic hazards impacts have been identified for evaluation:

- The potential for rupture of the pipeline due to unstable soils or a geologic movement such as rupture of a fault, seismic shaking, liquefaction, or landslides (addressed as GEO-1 below).
- The potential for blasting activities to impact adjacent facilities or resources due to vibration (addressed as GEO-2 below).

CEQA Significance Criteria

Under CEQA, the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to topographic and geologic hazards, the relevant CEQA significance criterion provided in Section VI of the checklist is:

- Would the project expose people or structures to potential adverse effects, including the risk of loss, injury, or death involving:
  - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42).
  - ii) Strong seismic ground shaking?
  - iii) Seismic-related ground failure, including liquefaction?
  - iv) Landslides?

This CEQA significance criterion is included within the scope of GEO-1 below.

3.2.3.2 Impact Analysis

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under NEPA and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Mitigation measures (MMs) are compiled in Section 3.2.4, Summary of Mitigation.

Proposed Project/Proposed Action (Alternative 1)

Impact GEO-1: Severe damage to the pipeline from unstable soils or a geologic event.

Potential for Rupture at Pipeline-Fault Crossings

Fault rupture resulting from earthquakes, as well as fault creep and associated tectonic deformation, may pose a hazard to the pipeline. Should fault rupture or other geologic hazards result in a rupture to the pipeline, petroleum product could be released to the surrounding environment, providing a risk of fire and/or environmental contamination, resulting in an adverse effect under NEPA and a significant impact under CEQA.

For pipeline fault-crossing evaluations, the Applicant has used published fault information (e.g., California Geological Survey, and empirical data; Wells and Coppersmith 1994, as outlined on Table 4-1 in a report by URS [URS Corporation 2008]). Conservative fault rupture analyses have been conducted on the larger faults assuming multiple fault ruptures to identify whether or not pipeline rupture would be likely at various faults. The results are provided in Table 3.2-7. Based on preliminary review, valves at the following fault locations are considered reasonable due to crossing orientation, the anticipated fault displacement, and fault activity: San Jacinto/Glen Helen, San Andreas, Lenwood-Lockhart, and Calico-Hidalgo. The fault rupture analyses used conservative fault displacement estimates. Because this analysis indicates that the pipeline would have a medium to high probability of rupture at these specific locations, shut off valves at all active fault zones are proposed to minimize the volume of petroleum product that would be released.

Table 3.2-7 Potential Release Volumes Associated with Faulting

Milepost Location	Fault/Fault Zone	Approximate Displacement (feet)	Probability of Seismic Event	Probability of Pipeline Rupture during Seismic Event	Potential Volume Released
10.5-12.5 and 13.0-14.0	San Gabriel, Lytle Creek, and Glen Helen (San Jacinto Fault Zone)	3.6	High	Medium to High	3,100 barrels (130,200 gals)
20.75-21.0 and 21.0-22.0	San Bernardino North (San Andreas Fault Zone)	16.1	High	High	1,300 barrels (54,600 gals)
77.5-78.0	Lenwood (Lenwood-Lockhart Fault Zone)	16.1	Moderate	Medium	1,300 barrels (54,600 gals)
96.0-96.6	Calico (Calico-Hidalgo Fault Zone)	11.0	Moderate	Medium	5,000 barrels (210,000 gals)

Source: URS Corporation 2011

The URS 2008 study provides estimates of potential fault displacement along the ROW based on empirical relationships by Wells and Coppersmith (1994) using a worldwide database from historical earthquakes. The same table also includes estimates of the relative angle of the pipeline-centerline to the fault for the significant pipeline-fault crossings. The angle from the pipeline-centerline to the fault is measured in the counter-clockwise direction for all right-lateral strike-slip faults and is measured clockwise for all left-later strike-slip faults. This method is used to evaluate the potential kinematics (i.e., pipe compression versus extension) that would accompany fault displacement at the pipeline-fault crossing. Angles of intersection less than about 90 degrees at a strike slip fault crossing would result in compression of the pipe (if fault rupture were to occur) and are considered unfavorable. Pipeline-fault crossings at an angle greater than 90 degrees would involve extension of the pipeline, which is more favorable in the event of fault surface rupture.

Additional site-specific information is needed to adequately characterize the fault crossings so that the pipeline can be designed to best fit the sites. Additional investigations of the San Andreas and San Jacinto Faults would not likely be required because there appears to be adequate geologic information to characterize the pipeline-fault crossing. Geologic assessment of the other fault crossings (that are not as well documented) would initially involve detailed geologic field reconnaissance, and interpretations of available remote sensing imagery and project-specific aerial photographs. If necessary, exploratory fault trenching would be performed at some pipeline fault crossings to further investigate the nature of past surface faulting.

These additional geologic studies would help confirm fault locations and width in the immediate area of the pipeline fault crossing and would be completed and the results incorporated into the final design phase of the Project prior to construction. A specialist experienced in the design of pipeline fault crossings would assess the preliminary pipeline fault crossing information developed for each fault crossing that has the potential to rupture the pipeline.

The initial pipeline analyses would be aimed at (1) providing a basis for resolving whether or not a particular crossing is a candidate for site-specific design and analysis and (2) ascertaining which crossings can be constructed with minimal special requirements (e.g., limited depth of soil cover, select backfill, increased wall thickness). Variables to be investigated with these analyses are expected to be primarily focused on fault crossing angle, fault displacement, pipe material and wall thickness, pipe coating, and backfill strength characteristics. Following these analyses, the fault crossings would be categorized into one of three conditions:

1. Crossings where practical design recommendations would not mitigate pipeline damage from fault displacement.
2. Crossings where there is sufficient information to incorporate the maximum displacement into the design, and to provide design recommendations to mitigate pipeline damage from fault displacement.
3. Crossings where there is insufficient information, including geologic characterization, to determine whether or not it is possible to provide design recommendations to mitigate pipeline damage from maximum anticipated fault displacement (see URS, 2008, Appendix B-9 and B-10).

For the third condition above, site-specific geologic and geotechnical studies may be warranted to provide the required information for pipeline design. The need for this level of investigation would be further evaluated following preliminary analysis of the design of pipeline fault crossings, as outlined above. Also, Appendix B provides a discussion of the placement of shut-off valves to minimize the amount of loss in these areas.

Liquefaction

The hazards posed by seismically-induced ground failures of liquefaction and lateral spreading could result in a temporary loss of foundation support for above-ground structures and for the pipeline itself. Strong ground shaking has the potential to cause densification or compaction of loose granular soils resulting in local differential settlement that could damage foundations or the pipeline. The intensity and duration of ground shaking and the relative density of the soils subject to liquefaction affect the potential for seismically induced settlement to occur.

Geologic and geotechnical investigations would be completed in areas that have a potential for liquefaction, including where the alignment crosses the Mojave River, areas between Colton and Cajon Pass, and other areas with potential for shallow groundwater. These would include subsurface investigations and sampling, laboratory testing and engineering analysis to estimate the lateral limits and amount of liquefaction-induced settlement, and potential for lateral spreading.

Based on this preliminary assessment, liquefaction evaluations would be performed at the pipeline crossings of the Mojave River where the potential appears to exist for liquefaction and lateral spreading, as well as Cajon Wash and other areas with potential for shallow groundwater. By incorporating appropriate design measures, potential impacts associated with seismically induced ground failures would not result in adverse effects under NEPA and potential impacts would be less than significant under CEQA.

Unstable Soils

Based on initial geologic study and pending confirmation from a detailed geologic investigation, there appears to be the potential for damage to the pipeline at a few locations due to collapse from locating the pipeline on unstable soil units. An example would be the steep bank at the Mojave River crossing on the route proposed in Alternative 1. It is anticipated that unstable soils would not result in an adverse effect under NEPA and would be less than significant under CEQA. Unstable soils are discussed further under Section 3.3, Soils.

Landslides

Landslides may range from young, actively moving slopes to ancient, relatively stable landslides with a low potential for movement. Damage to a pipeline as a result of slope movement can occur when the pipeline is within the area of ground failure and the slope movement involves a sufficient depth and displacement to disrupt the pipeline. Other slope hazards include steep slopes and hillside erosion. In addition, construction activities in steep slope areas can also induce new slope instability or reactivate marginally-stable slopes or old existing landslides. Based on this preliminary study, landslides are not anticipated to represent significant geologic hazards that would warrant mitigation measures. This would be confirmed based on an engineering geologic field reconnaissance and interpretations of air photos during the design level geotechnical investigation. It is anticipated that landslides would not result in an adverse effect under NEPA and would be less than significant under CEQA. Landslides are also discussed further under Section 3.3, Soils.

Subsidence and Settlement

Subsidence and settlement can be caused by natural phenomena during tectonic movement, consolidation, hydrocompaction, liquefaction-induced settlement or rapid sedimentation. Subsidence can also occur as a result of underground mining and fluid withdrawal and as a result of the development of sinkholes in karst topography. Areas of known subsidence occur in the Las Vegas Valley as a result of groundwater extraction, the resulting hydrocompaction, and ground fissures.

Areas of regional subsidence cannot generally be avoided by the pipeline route and thus mitigations measures, if needed, include increasing the performance of the pipeline through special designs. These can include strengthening the pipeline by increasing the wall thickness or grade of steel and by specialized trench and backfill designs. These alternative methods were previously discussed for fault crossings and liquefaction. Based on existing information and leveling surveys, the amount of subsidence that has occurred in Las Vegas Valley where the pipeline route crosses is relatively small, with about 0.2 feet of subsidence over a 5,000 foot length between the period of 1981 and 1987 and a gradual warping of the ground surface. Due to groundwater recharge efforts over the past several years and more water being imported, the amount of subsidence has been gradually decreasing over the last several years. Therefore, design mitigation for subsidence does not appear to be necessary.

Fault rupture resulting from earthquakes, fault creep, and associated tectonic deformation may cause damage to pipeline or related structure and cause a release of hazardous materials into the environment. Such a release could potentially expose people or structures to potential adverse effects, including the risk of loss, injury, or death, thus resulting in an impact that would be a direct, adverse impact under NEPA, and that would be significant under CEQA.

Though the implementation of the following measures would not fully alleviate the potential for impacts from a geologic event, mitigation is necessary to minimize potential impacts.

- **MM GEO-1a: Complete geotechnical studies.** Complete site-specific geotechnical studies to ensure that active fault crossings and potential liquefaction areas are accurately characterized and that the pipeline is designed to site-specific conditions. The Applicant would be required to design and construct the pipeline and facilities in accordance with all applicable standards and regulations. Where the results of the site-specific geotechnical reports dictate that special requirements are necessary, construct pipeline crossings of faults and liquefaction areas according to best management practices such as limited depth of soil cover, select backfill, and increased wall thickness. In addition, site specific geotechnical studies would evaluate the differential settlement potential where the pipeline route traverses from unconsolidated sediments into bedrock units. Appropriate design measures would be implemented to reduce pipeline stress, if applicable, at these locations. Studies shall be submitted to and approved by the BLM and San Bernardino County.
- **MM GEO-1b: Design pipeline for ground shaking.** Where the results of the site-specific geotechnical reports dictate that special requirements are necessary construct pipeline and associated facilities (e.g., pump stations) to withstand anticipated ground motion, including peak ground accelerations and spectral ground accelerations adjusted for site-specific conditions (e.g., underlying rock or sediment type).
- **MM GEO-1c: Shutoff valves.** Install automated shutoff valves outside the fault zone to reduce potential impacts associated with hazards from fault displacements.
- **MM GEO-1d: Follow design and operational procedures.** Meet all required design and operational procedures.

The Applicant or its designated representative would implement the following measures to reduce potential for damage to pipeline from liquefaction and unstable soils.

- **MM GEO-1e: Strengthen the buried pipeline.** Increase the capacity of the buried pipeline to withstand ground displacements through the use of loose granular trench backfill material, low-friction pipe coatings, geosynthetic lining of sloped trench walls, or similar acceptable technique.
- **MM GEO-1f: Maximize distance from deformation zone.** Increase the capacity of the buried pipeline to withstand ground displacement components by maximizing the distance from the deformation zone.
- **MM GEO-1g: Space around buried pipeline.** Provide sufficient space around the buried pipeline to reduce or eliminate potential soil loads from ground failure.
- **MM GEO-1h: Avoid soils susceptible to movement.** Where possible avoid installing pipeline and new roads where soil is susceptible to mass movement and/or steep slopes are present. Additional information regarding how MM GEO-1h would avoid or reduce impacts to soil resources is discussed in Section 3.3.4.

Implementation of these mitigation measures would reduce the potential for releases, and would reduce the magnitude of potential releases, due to geologic events. There would be a medium to high probability of pipeline rupture at four specific fault locations, if a geologic event were to occur on those faults. Although shut off valves at all active fault zones would minimize the volume of petroleum product that would be released, they would not eliminate the potential for releases, so a residual risk of releases would still exist. The mitigation measures would reduce the impacts under CEQA to a level that is less than significant.

Impact GEO-2: Impact to adjacent facilities or resources through blasting vibrations.

Water Wells and Springs

In general, vibration effects to wells would be expected to be limited to the immediate proximity of the blasting. A common measurement unit for vibration is the peak particle velocity (PPV) of blasting-induced ground motion in inches per second. Studies show that there were no physical vibration effects on the wells as close as 300 feet even when the maximum velocities exceeded two inches per second (Siskind 2000). It also indicated that wells outside the blast pattern were exposed to as much as 8.7 inches per second at a distance of 31 feet and no damage occurred. Applicant limits maximum velocity to four inches per second measured adjacent to an underground pipeline and for any aboveground structure regardless of distance. Potential impacts to wells and springs are discussed further in Section 3.5, Water Resources. Kinder Morgan would work with the landowner to ensure a temporary supply of water, and if determined necessary, Applicant would replace a permanent water supply. Mitigation measures would be coordinated with the individual landowner in order to meet the landowner's specific needs. Mitigation measures for groundwater wells, springs, and seeps would be specific to each property and would be determined during landowner negotiations.

Yields from perennial springs could decrease if blasting vibrations damaged the related aquifer. Applicant would request authorization from landowners to test and document the baseline condition, yield, and water quality of any private wells or springs, and wells or springs on federal or State lands, being used as permitted water supplies within 200 feet of the pipeline construction ROW. This testing would occur before the pipeline construction started in the nearby area, and the testing results would be shared with the property owner, if requested. Data collected during the dry season may prove most useful in determining potential effects. Testing of non-permitted wells and springs may be necessary to determine whether these would be affected. Similar information would be gathered for any public water wells or municipal water supply springs located within 400 feet of the pipeline construction ROW.

The number and location of the relief boreholes would be determined on a site-specific basis. Any turbidity in wells or springs caused by the blasting vibrations would be expected to be temporary and would likely dissipate shortly after blasting or after the well was pumped several times. Water quality impacts to groundwater or springs from blasting agents, if any, would be expected to be temporary and localized because only small amounts of these agents generally would be needed for trench excavation.

Wetlands

Blasting could potentially redirect surface water and groundwater flows to and from wetlands. In addition, turbidity and blasting agent by-products could possibly temporarily degrade surface water and groundwater quality. Any turbidity resulting from blasting would be expected to be temporary and to dissipate shortly after blasting. Water quality impacts to wetlands from blasting agents, if any, would be expected to be temporary and localized because only small amounts of blasting agents generally would be needed for trenching.

Slopes

Unstable rock and soil slopes could locally fail as a result of blasting vibrations. Applicant would complete a reconnaissance of slopes in the vicinity of the blasting, including measuring slope inclinations and observing areas adjacent to planned blasting locations for potential indicators of unstable slopes. Identified slope areas that could be impacted by blasting would be monitored and evaluated for hazards to people and property during the blasting operations.

Structures

Blasting vibrations and flying debris could potentially damage aboveground structures. If structures were present in areas where blasting was necessary, Applicant would request authorization from landowners to inspect structures located within 200 feet of the pipeline construction ROW before and after blasting. Blasting mats or padding also would be used when blasting near structures to limit potential damage from flying rocks.

Adjacent Pipelines and Buried Utilities

Blasting vibrations could potentially damage adjacent underground pipelines and utilities. In general, blasting would not be allowed within 10 feet of an existing pipeline or buried utility. In cases where blasting near an existing utility was necessary, the pipeline or utility owner would be notified in advance of the blasting, and measures would be taken to minimize the potential for utility damage.

Paleontological and Archeological Resources

Blasting vibrations could potentially damage adjacent undetected paleontological and archeological resources. However, field reconnaissance would be conducted in those areas deemed significant prior to disturbing the ground surface.

Summary

Should blasting be necessary for the construction of the pipeline, potential effects associated with blasting could include temporary and localized impacts to wells and springs and to water quality in wetlands. Blasting could potentially redirect surface water and groundwater flows to and from wetlands. These impacts would be direct and adverse, but would be temporary in nature. Through the use of Applicant's proposed monitoring and mitigation, the Applicant would avoid or reduce the likelihood of local failures of unstable rock and soil, and damage to structures or utilities from blasting vibrations.

MM GEO-2: Implement Blasting Plan. The Applicant would finalize and implement a Blasting Plan that provides typical blasting procedures and addresses, among other things, proximity to existing structures. The Applicant would work with landowners to compensate for any inadvertent damage to property. Additional information on how MM GEO-2 would avoid or reduce impacts associated with soils is discussed in Section 3.3.4.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the

Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts associated with topographic and geologic hazards along the seven route variations are described below:

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to topography or geologic hazards. Neither segment crosses faults or areas susceptible to landslides or liquefaction. Therefore, the potential impacts from topographic and geologic hazards associated with the Bloomington route would be the same as those identified for the Proposed Project.

Rialto Alternative

The Rialto Alternative route variation, and the segment of the Proposed Project that it would replace within the City of Rialto, do not have any differences with respect to topography or geologic hazards. Neither segment crosses faults or areas susceptible to landslides or liquefaction. Therefore, the potential impacts from topographic and geologic hazards associated with the Rialto route would be the same as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route would use the HDD construction method under Interstate 15 instead of the open cut method through the unnamed riparian area. By avoiding construction of the pipeline within the riparian area, the route would avoid soils that are potentially subject to liquefaction due to water saturation. However, construction of the pipeline in the subsurface by the HDD method also presents potential geologic risks. The length of the HDD, its angle under the Interstate highway, and the type of rock involved may create difficulties for the installation. Although Calnev has investigated the alternative route and obtained information from potential construction contractors for this alternative in order to avoid the riparian area, successful installation is not a certainty. Even if installation can be successfully completed, the precise geological and geotechnical conditions in this location under the highway would remain unknown, and could present unknown hazards to the pipeline. This could present the potential for a release of pipeline contents, which would be a direct, adverse impact, and would be significant under CEQA. As discussed for impact GEO-1, implementation of mitigation measures GEO-1a through GEO-1d would not fully alleviate the potential for impacts from a geologic event, but such mitigation would be necessary to minimize potential impacts.

Overall, the Wagon Train Road route would avoid one potential geologic hazard, which would be the potential for liquefaction within the riparian area. However, it could potentially expose the pipeline to other hazards, include geotechnical conditions that preclude installation, or possible unknown hazards. These hazards include boring through a fault plane (fault gauge) into fractured bedrock with potential high groundwater levels. Both routes in this area present the potential for geologic hazards to damage the pipeline and release hazardous materials. In the unnamed riparian area, the pipeline would be constructed in an area of potentially saturated soils, which could present the potential for liquefaction. Within the Wagon Train Road HDD area, the pipeline would be installed near the Cleghorn Fault. The risk of either hazard creating an actual impact is speculative, so it is impossible to suggest that one route would have higher or lower levels of impacts than another. A release of material from either scenario would likely flow, by gravity, to the same place (the unnamed riparian area), so the potentially impacted resources would be the same for both alternatives.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa route, and the segment of the Proposed Project that it would replace along Baldy Mesa Road, do not have any differences with respect to topography or geologic hazards. Neither segment crosses faults or areas susceptible to landslides or liquefaction. Therefore, the potential impacts from topographic and geologic hazards associated with the Phelan Road/Baldy Mesa route would be the same as those identified for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, are very similar with respect to topographic and geologic hazards. The Proposed Route diverges from the route of the existing pipelines in order to avoid constructability issues associated with placing the proposed pipeline within an active wash. However, neither segment crosses faults or areas susceptible to landslides or liquefaction. Therefore, the potential impacts from topographic and geologic hazards associated with the Zzyzx route would be the same as those identified for the Proposed Project.

Baker Alternative

The Baker Alternative route, and the segment of the Proposed Project that it would replace on the west and north side of Baker, do not have any differences with respect to topography or geologic hazards. Neither segment crosses faults or areas susceptible to landslides or liquefaction. Therefore, the potential impacts from topographic and geologic hazards associated with the Baker route would be the same as those identified for the Proposed Project.

Silver Lake Pump Station Alternative

The alternative and Proposed Action locations for the proposed Silver Lake Pump Station do not have any differences with respect to topography or geologic hazards. Neither location is situated near faults or areas susceptible to landslides or liquefaction. Therefore, the potential impacts from topographic and geologic hazards associated with the_alternative location for the Silver Lake Pump Station would be the same as those identified for the Proposed Project.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation, and the segment of the Proposed Project that it would replace that passes through Bracken Junction, do not have any differences with respect to topography or geologic hazards. Neither route crosses faults or areas susceptible to landslides or liquefaction. Therefore, the potential impacts from topographic and geologic hazards associated with the_alternative location for the Sunset Lateral route would be the same as those identified for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset

Junction and modification of the existing Bracken Junction would not have any differences with respect to topography and geologic hazards.

Summary

Overall, Alternative 2 would have a very similar level of impacts as compared to the Proposed Project. The primary difference would be a reduction in the potential for liquefaction associated with the unnamed riparian area near the Wagon Train Road HDD location. However, the Alternative 2 route is slightly longer, so there would be a minimal increase in potential for damage by geologic hazards along the route. Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. As discussed for impact GEO-1, implementation of mitigation measures GEO-1a through GEO-1d would not fully alleviate the potential for impacts from a geologic event, but such mitigation would be necessary to minimize potential impacts.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. With respect to topography and geologic hazards, Alternative 3 would incorporate the reduced potential for liquefaction associated with avoidance of the unnamed riparian area at the Wagon Train Road HDD area. All other soil resources impacts under both NEPA and CEQA would remain the same as Alternatives 1 and 2.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure will be installed. No ground-disturbing activities would take place and potential impacts associated with topography and geologic hazards resulting from current activities on the existing pipelines would remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems would be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines would remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, CA to Las Vegas, NV. The topography and geologic hazards associated with the existing pipelines, which include the potential damage resulting from seismic events, would continue to exist at the same level as current conditions.

For the purposes of CEQA, no significant impacts to topography and geologic hazards would result if the No Project Alternative is adopted.

3.2.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.2-8, there are differences in impacts based on the route variations.

Table 3.2-8 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
Potential damage to existing and new pipelines from unstable soils or geologic events, resulting in petroleum release.	Slightly longer route than Alternative 1, but has reduced potential for damage by unstable soils by avoiding riparian area.	Slightly longer route than Alternative 1, but has reduced potential for damage by unstable soils by avoiding riparian area. Potential impacts the same as Alternative 2.	Continued potential for damage to existing pipelines resulting from seismic events. No potential petroleum release from new pipeline.

3.2.4 Summary of Mitigation

A complete list of mitigation measures proposed is presented by impact in Table 3.2-9. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.2-9 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Impact Geo-1: Severe damage to the pipeline from unstable soils or a geologic event	**MM Geo-1a:** Complete geotechnical studies. **MM Geo-1b:** Design pipeline for ground shaking. **MM Geo-1c:** Shutoff valves. **MM Geo-1d:** Follow design and operational procedures. **MM Geo-1e:** Strengthen the buried pipeline. **MM Geo-1f:** Maximize distance from deformation zone. **MM Geo-1g:** Space around buried pipeline. **MM Geo-1h:** Avoid soils susceptible to movement.	Throughout pipeline ROW at or near fault crossings, Cajon Wash and Mojave River Crossing (Liquefaction and unstable soils), Las Vegas Valley (Subsidence and Differential Settlement)	BLM/County of San Bernardino	Pre- and Post-Construction
Impact Geo-2: Impact to adjacent facilities or resources through blasting vibrations	**MM Geo-2:** Implement Blasting Plan.	At locations where blasting is necessary	BLM/County of San Bernardino	Pre-Construction

References

Bell, J.W., F. Amelung, A.R. Ramelli, and G. Blewitt. 2002. Land subsidence in Las Vegas, Nevada, 1935-2000: New geodetic data show evolution, revised spatial patterns, and reduced rates. *Environmental and Engineering Geoscience*, v. III, no. 3, p. 155–174.

Bell, J.W., J.G. Price, and M.D. Mifflin. 1992. *Subsidence-induced fissuring along preexisting faults in Las Vegas Valley, Nevada*. Association of Engineering Geologists, Proceedings of the 35th annual meeting, p. 66–75.

California Department of Conservation. 2003. California Geological Survey Alquist-Priolo Earthquake Fault Evaluation and Zoning Program.

Clark County Comprehensive Plan. 2004. http://www.clarkcountynv.gov/Depts/comprehensive_planning/advanced_planning/Pages/ComprehensivePlan.aspx. Accessed May 21, 2009.

Dennen, W. H. and B.R. Moore. 1986. *Geology and Engineering*. William C. Brown, Publishers. Dubuque, Iowa.

Fini, E.L., Linnert, L. Urzerdowski, and J. Bell. 1991. *Las Vegas Valley Subsidence Project, Collapsible Soil Potential*. Nevada Bureau of Mines and Geology.

Jennings, C.W. 1977. The Geologic Map of California, Geologic Data Map No. 2. Division of Mines and Geology, State of California.

Matti, Jonathan C. and Carson, Scott E. 1991. Liquefaction susceptibility in the San Bernardino Valley and vicinity, Southern California; a regional evaluation: U.S. Geological Survey Bulletin 1898, 57 p.

Morton M.D. and F.K. Miller. 2006. Geologic Map of the San Bernardino and Santa Ana 30' x 60' Quadrangles, California. USGS OFR 2006-1217 v.1. Open-File Report 2007-1437. CGS Special Report 203.

Page, W.R., S.C. Lundstrom, A.G. Harris, V.E. Langenheim, J.B. Workman, S.A. Mahan, J.B. Paces, G.L. Dixon, P.D. Rowley, B.C. Burchfiel, J.W. Bell, and E.I. Smith. 2005. Geologic and geophysical maps of the Las Vegas 30′ X 60′ quadrangle, Clark and Nye Counties, Nevada, and Inyo County, California. USGS Map 2814.

Siskind, D.E. 2000. *Vibration from Blasting*. International Society of Explosives Engineers. Cleveland, Ohio.

Southern California Earthquake Center (SCEC). 2008. http://www.data.scec.org/sitemap.html. Accessed May 21, 2009.

Slemmons, B. D., J.W. Bell, C.M. dePolo, A.R. Ramelli, G.S. Ramussen, V.E. Langenheim, R.C. Jackens, K. Smith, and J. O'Donnell. 2001. *Earthquake Hazards in Las Vegas, Nevada*, in B. Luke, E. Jacobson, and J. Werle, Proceedings: 36th Annual Symposium on Engineering Geology and Geotechnical Engineering, University of Nevada, Las Vegas, pp. 447-457.

Stewart, J. H. and Carlson, J. E. 1978. Geologic Map of Nevada. U.S. Geological Survey.

Tinsley, J. C., Youd, T. L., Perkins, D. M., and Chen, A. T. F., 1985. "Evaluating liquefaction potential," in Evaluating Earthquake Hazards in the Los Angeles Region, U. S. Geological Survey Professional Paper 1360, p. 263-315.

United States Geological Survey (USGS). 1971. *Subsidence in the Bunker Hill-San Timoteo Area Southern California, Open File Report No. 56.*

URS Corporation. 2007. San Bernardino County General Plan.

URS Corporation. 2008. *Baseline Geology and GeoHazards Assessment*. Calnev Expansion Project. URS Project No. 27656034.340200.

URS Corporation. 2011. *Valve Locations and Estimated Release from a Pipeline Rupture*. Response to agency request in August 25, 2011 conference call. Calnev Expansion Project. URS Project No. 27656034.340200.

USGS. 2003a. *Detection and Measurement of Land Subsidence Using Interferometric Synthetic Aperture Radar and Global Positioning System, San Bernardino County, Mojave Desert, California*. Water-Resources Investigations Report 03-4015.

USGS. 2003b. *Geologic Setting, Geohydrology and Groundwater Quality near the Helendale Fault in the Mojave River Basin, San Bernardino County, California*. Mojave Water Resources Investigations Report 03-4069.

USGS. 2004. *USGS Factsheet 002-97*, 2004. http://pubs.usgs.gov/fs/fs001-97. Accessed April 9, 2004.

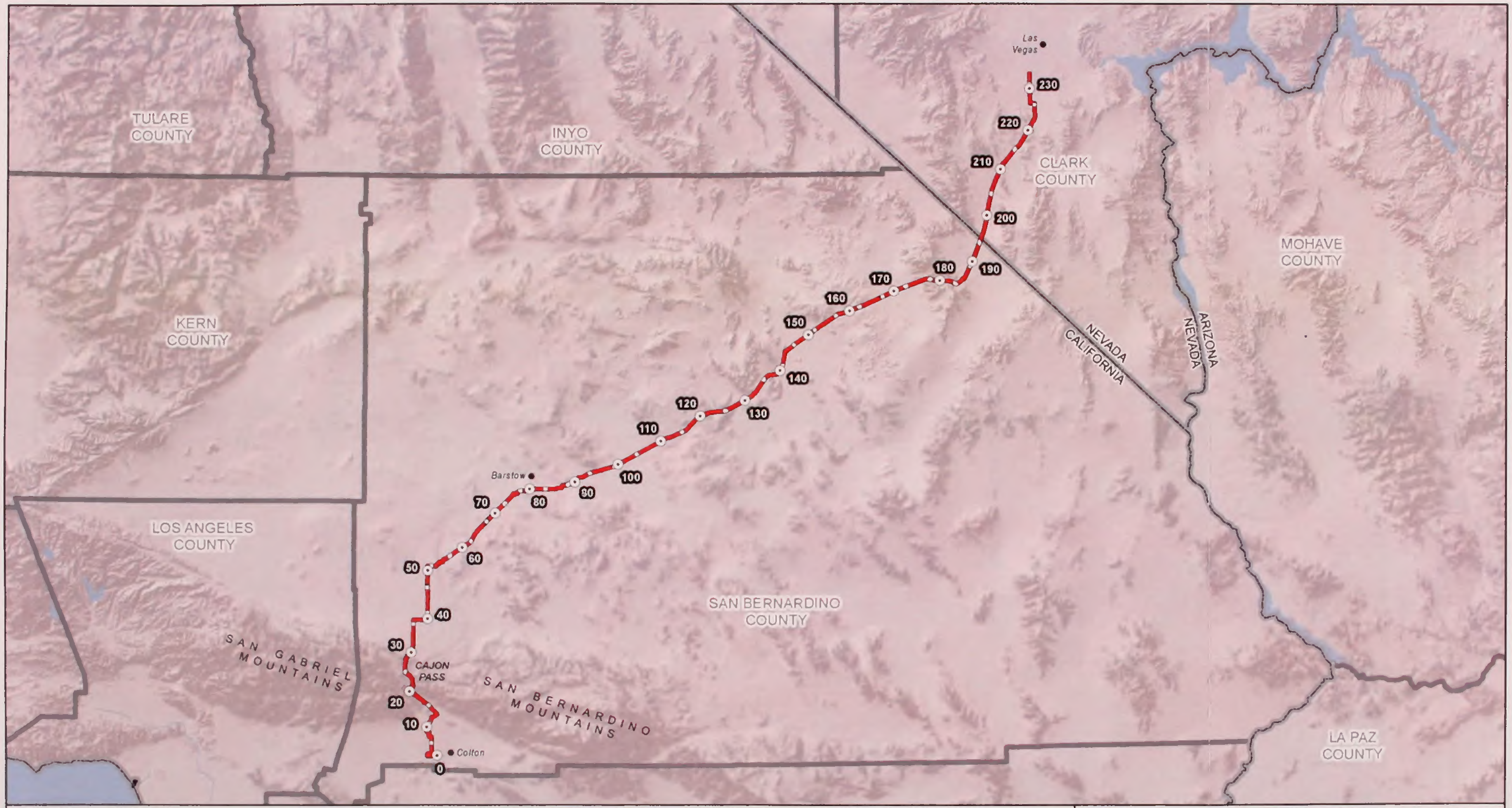
USGS. 2008. Earthquakes Hazards Program / Quaternary Fault and Fold Database.

USGS. 2009. Landslides Hazards Mapping. http://www.usgs.gov/hazards/landslides. Accessed April 9, 2009.

Wells, D.L. and K.J. Coppersmith. 1994. New empirical relationships among magnitude, rupture length, rupture width, and surface displacements. *Bulletin of the Seismological Society of America*, v. 84, p. 974 1002.

Wills, C.J. 1996. Liquefaction in the California Desert. *California Geology*, March/April, pp. 31-35.

Varnum, N. C., 1987. *Results of leveling across fault scarps in Las Vegas Valley, Nevada*. April 1978 to April 1987, Nevada Bureau of Mines and Geology, Open File Report 87-7, p. 25.



⊙ Milepost

▬ Proposed Route

FIGURE 3.2-1
SHADED-RELIEF TOPOGRAPHIC MAP OF PROJECT AREA

Locations of project components are approximate
Mile Post 54 has been removed due to route change

SOURCE
ESRI 2008

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June 28, 2011

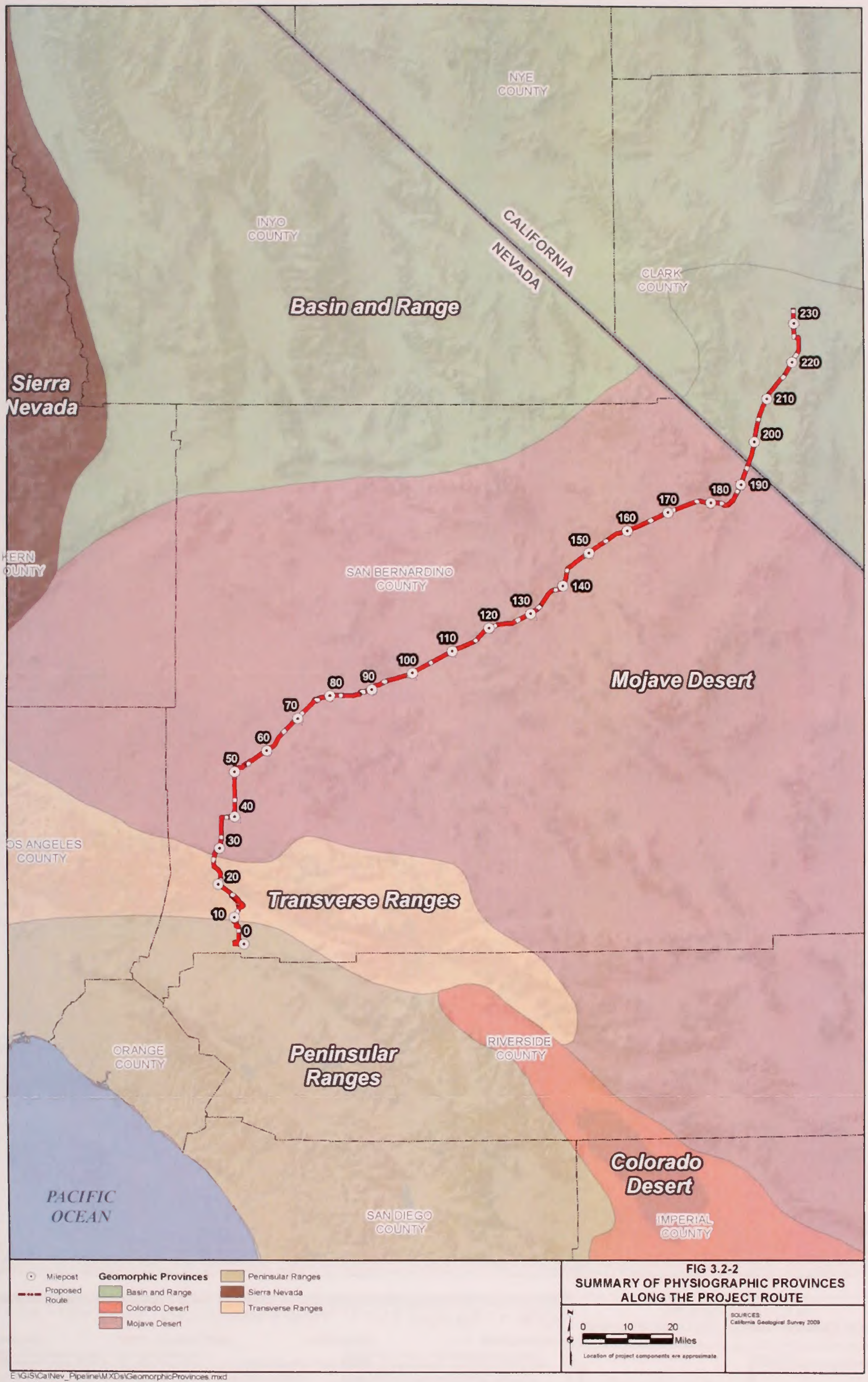

FIG 3.2-2
SUMMARY OF PHYSIOGRAPHIC PROVINCES ALONG THE PROJECT ROUTE

SOURCES:
California Geological Survey 2009

E:\GIS\CalNev_Pipeline\MXDs\GeomorphicProvinces.mxd
June 28, 2011

FIG 3.2-3 (MAP 1 OF 4)
SURFACE GEOLOGY ALONG PROJECT ROUTE

Location of project components are approximate.

SOURCES:
California Geological Survey 2009; USGS 2003

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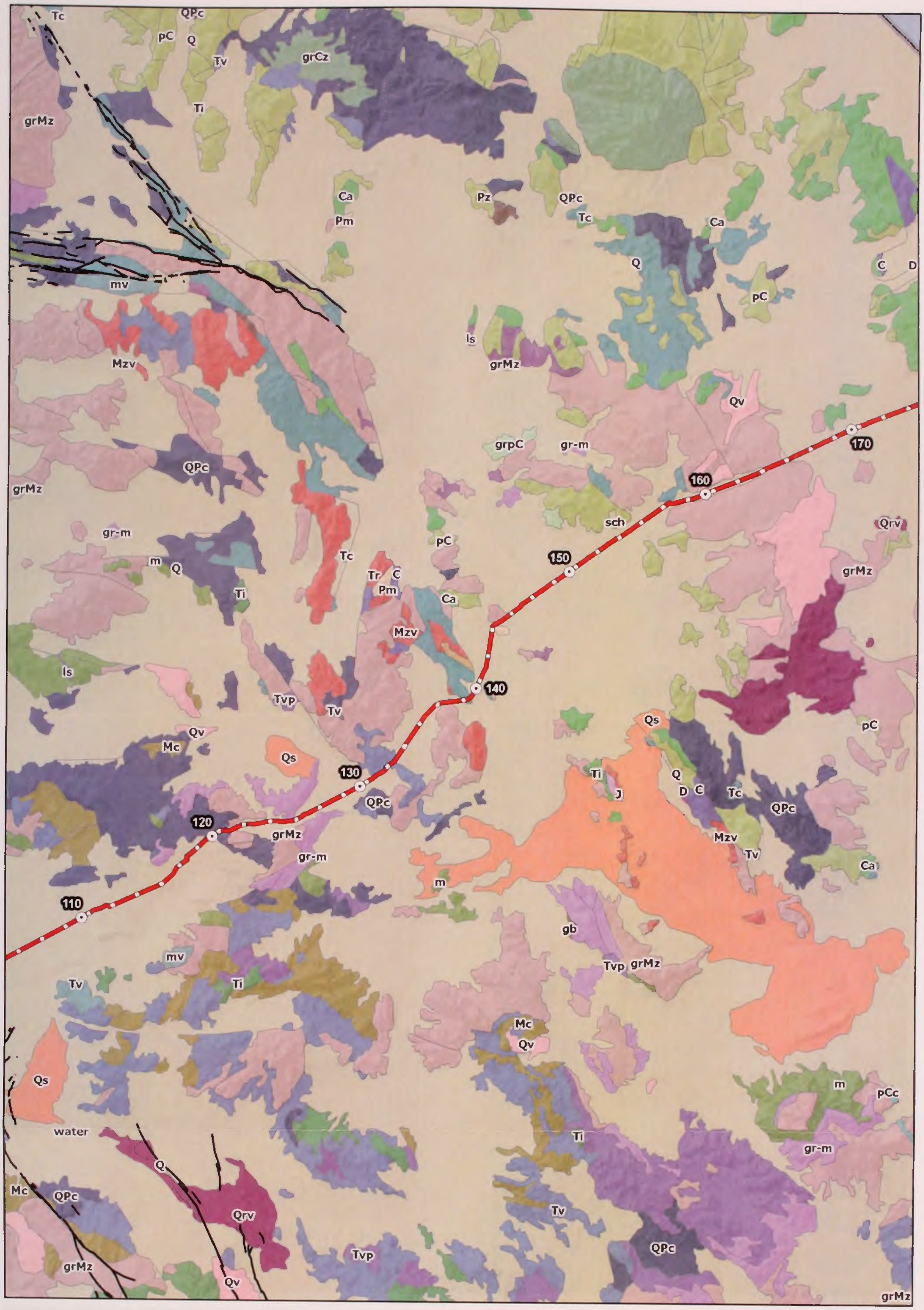
Date: June 29, 2011



C Ca O E EP J K KJf Ku M Mc Mzv Oc P Pm Pz Pzv Q QPc Qg Qls Qrv Qs Qv Qvp SO Tc Ti Tr Tv Tvp gb gr gr-m grCz grMz grPz grpC ls mv pC pCc sch water

● Mileposts

Proposed Route

Faults

Inferred Faults

Q	Alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated. Mostly nonmarine, but includes marine deposits near the coast
D	Limestone and dolomite, sandstone and shale; in part tuffaceous
Tc	Undivided Tertiary sandstone, shale, conglomerate, breccia, and ancient lake deposits
gr-m	Granitic and metamorphic rocks, mostly gneiss and other metamorphic rocks injected by granitic rocks. Mesozoic to Precambrian
QPc	Pliocene and/or Pleistocene sandstone shale, and gravel deposits; mostly loosely consolidated
Tv	Tertiary volcanic flow rocks; minor pyroclastic deposits
Pm	Shale, conglomerate, limestone and dolomite, sandstone, slate, hornfels, quartzite; minor pyroclastic rocks
grMz	Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite

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Date: June 29, 2011

FIG 3.2-3 (MAP 2 OF 4)
SURFACE GEOLOGY ALONG PROJECT ROUTE

N

0 3 6 Miles

Location of project components are approximate.

SOURCES:
California Geological Survey 2009; USGS 2003

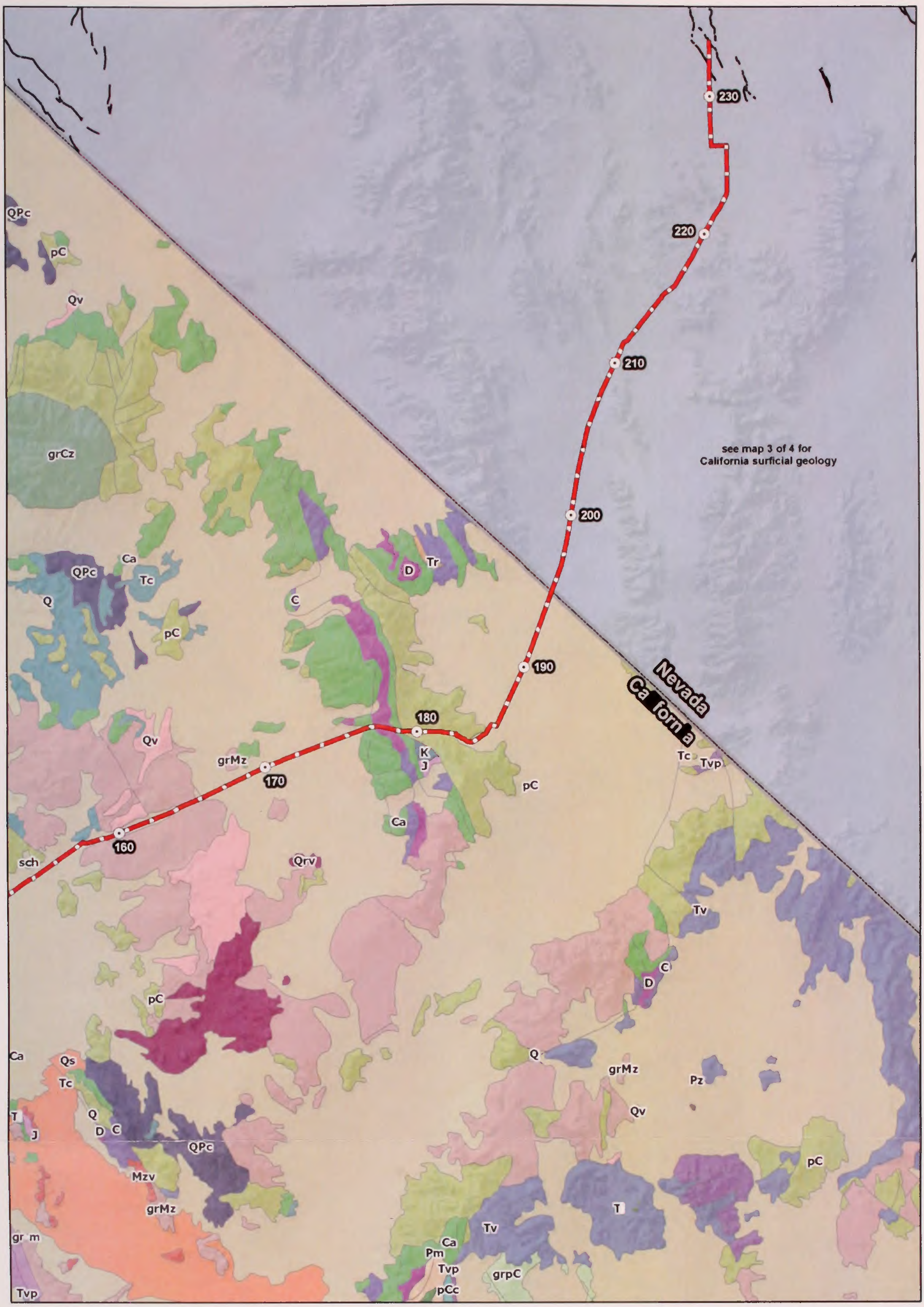

FIG 3.2-3 (MAP 3 OF 4)
SURFACE GEOLOGY ALONG PROJECT ROUTE

Location of project components are approximate.

SOURCES:
California Geological Survey 2009; USGS 2003

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Date: June 29, 2011

C Ca D E Ep J K KJf Ku M Mc Mzv Oc P Pm Pz Pzv Q QPc Qg Qls Qrv Qs Qv Qvp SO Tc Ti Tr Tv Tvp gb gr gr-m grCz grMz grPz grpC ls mv pC pCc sch water

- ● Mileposts
- Proposed Route
- Faults
- Inferred Faults

Qa	Latest Pleistocene to Holocene alluvium, undivided. flat, relatively undissected fan, terrace, and basin deposits
Tba	Andesite and basalt flows, basaltic andesite (Pliocene)
Tt3	Schists of various types; mostly Paleozoic or Mesozoic age; some Precambrian
Mc	Sandstone, shale, conglomerate, and fanglomerate; moderately to well consolidated
Qp	Latest Pleistocene to Holocene alluvium, undivided. Flat, relatively undissected fan, terrace, and basin deposits

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Date: June 29, 2011

FIG 3.2-3 (MAP 4 OF 4)
SURFACE GEOLOGY ALONG PROJECT ROUTE

N
0 3 6 Miles

Location of project components are approximate

SOURCES: USGS 2003

Map references: Preliminary Geologic Map of the San Bernardino 30' x 60' Quadrangle – Faults, California, U.S. Geological Survey, Version 1.0, compiled 2003; Map 5 – Clark County Known Geologic Faults, Clark County, Nevada, Sept. 13, 2001; Geologic Map of the Hidden Hills Ranch Quadrangle, Clark County, Nevada, U.S. Geological Survey, 2008;

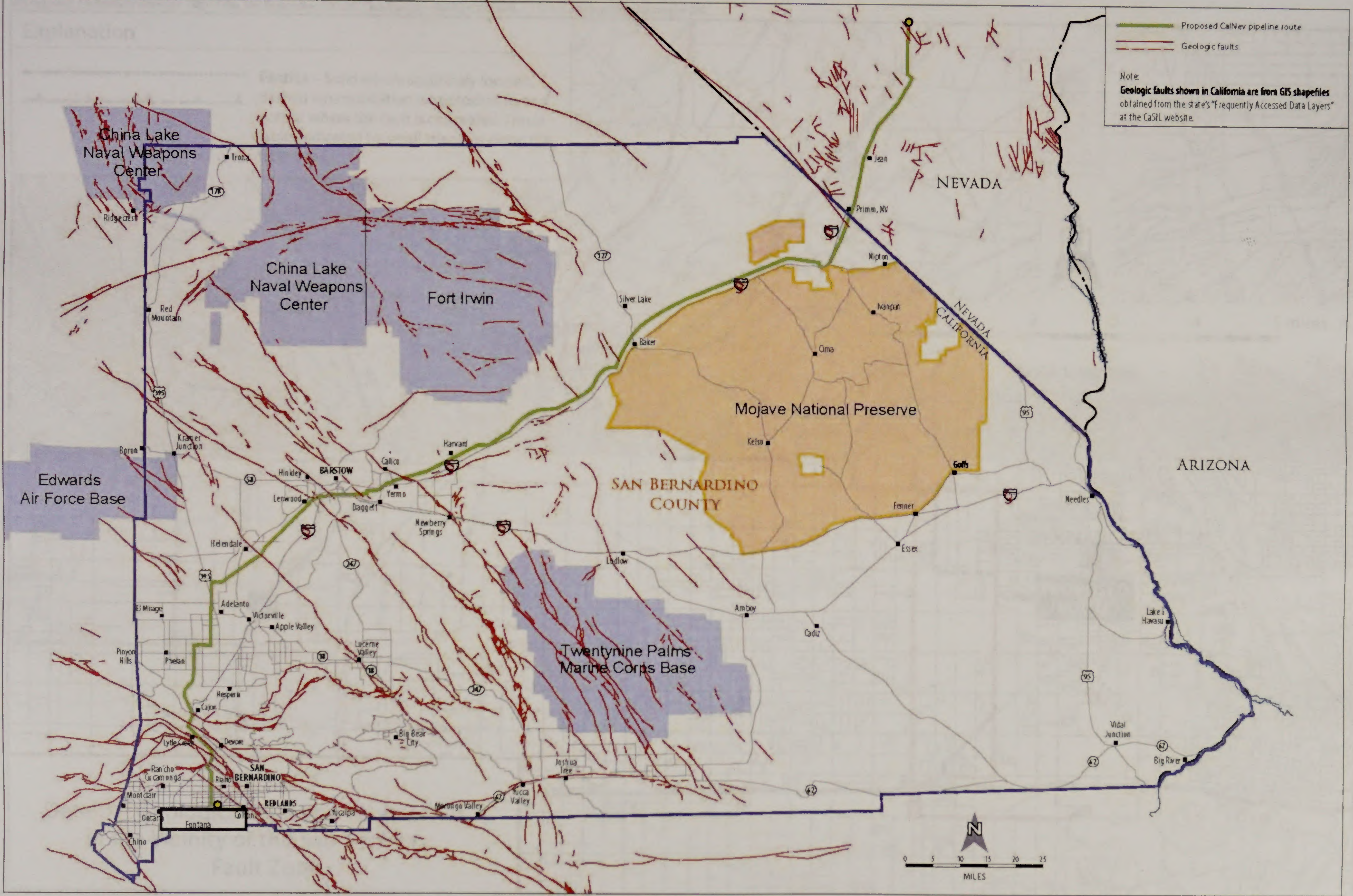

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Figure 3.2-4
Generalized Geologic Fault Map of the Project Area

Base map source: Preliminary Geologic Map of the San Bernardino 30' x 60' Quadrangle – Faults, California. U.S. Geological Survey, Version 1.0, compiled 2003

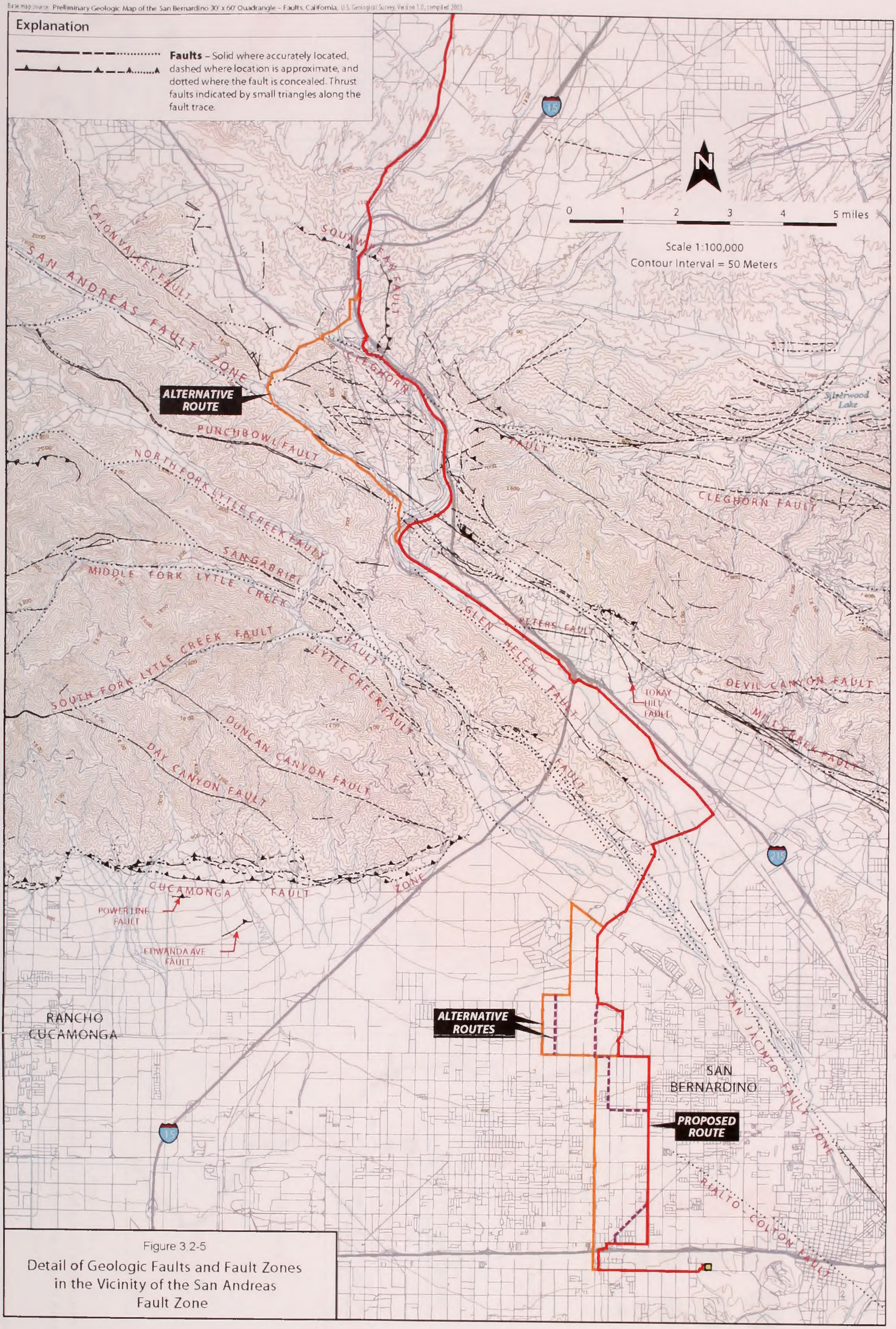
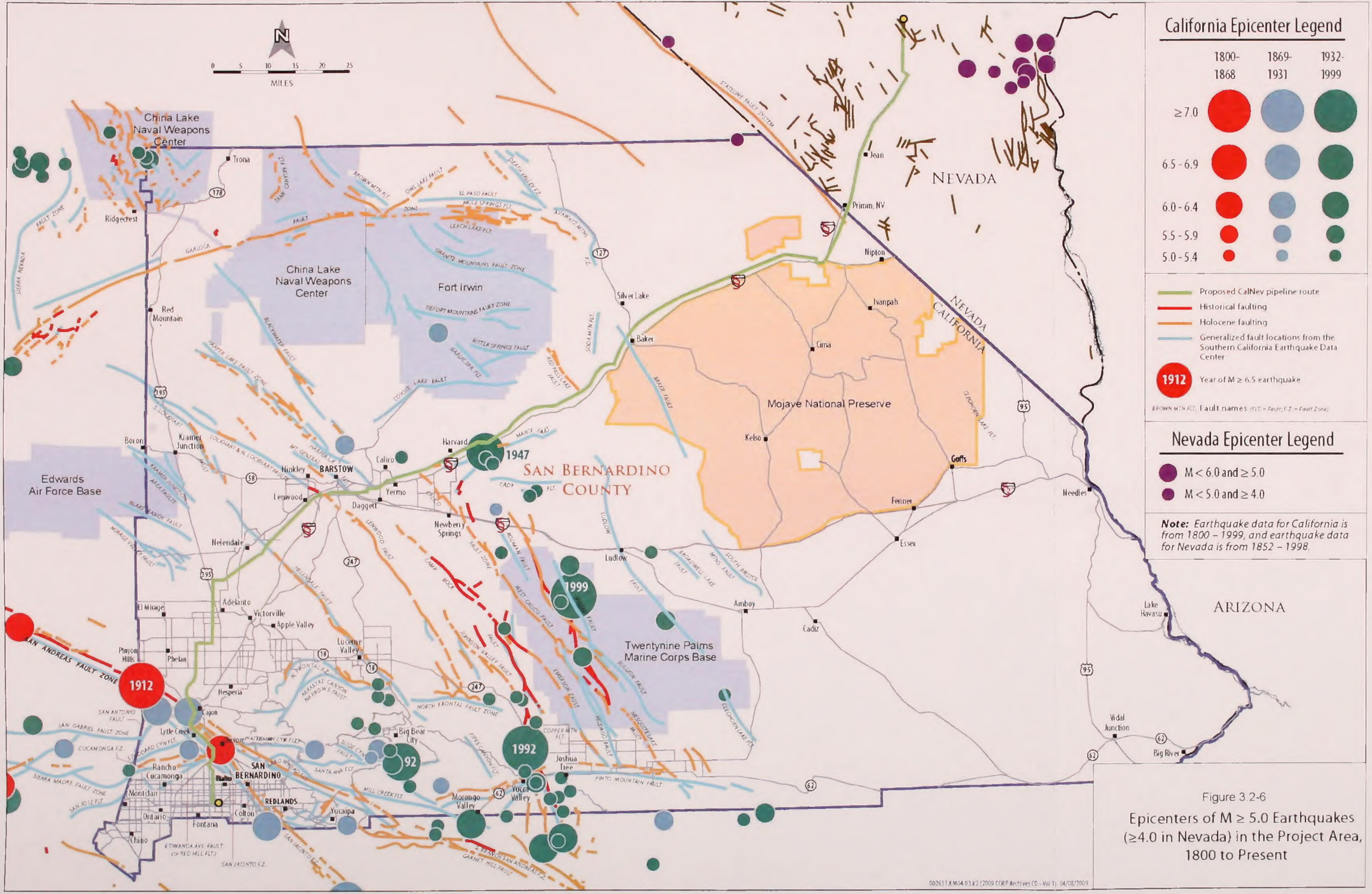


Figure 3.2-5

Detail of Geologic Faults and Fault Zones in the Vicinity of the San Andreas Fault Zone

Map references: Epicenters of and Areas Damaged by M ≥ 5 California Earthquakes, 1800 – 1999, California Dept. of Conservation, 2000; and, Earthquakes in Nevada, 1852 – 1998, University of Nevada, Reno Seismological Laboratory; Geologic Map Of The Hidden Hills Ranch Quadrangle, Clark County, Nevada, USGS, 2008; Map 5 - Clark County Known Geologic Faults Clark County, Nevada, Sept. 13, 2001; and, Southern California Earthquake Data Center at http://www.data.scec.org/faults/mojfault.html



Note: *Earthquake data for California is from 1800 – 1999, and earthquake data for Nevada is from 1852 – 1998.*

Figure 3.2-6

Epicenters of M ≥ 5.0 Earthquakes (≥4.0 in Nevada) in the Project Area, 1800 to Present

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3.3 Soils

This section describes the soils that may be affected by the Proposed Project and its alternatives.

During the scoping period, government agencies and members of the public identified the following concerns related to soils: address soil contamination that may result from Proposed Project activities. This issue is also included within the scope of impacts resulting from hazardous materials and is addressed in this Environmental Impact Statement (EIS) /Environmental Impact Report (EIR) in Section 3.17 (Public Safety and Hazardous Materials).

3.3.1 Affected Environment

The pipeline right-of-way (ROW) primarily traverses undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the San Bernardino National Forest and the U.S. Department of Defense (DoD). Lands under the jurisdiction of the State of California, the State of Nevada, San Bernardino County and Clark County are also crossed by the pipeline ROW. Incorporated communities crossed by the pipeline ROW include among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California, as well as Henderson and Las Vegas in Nevada. Access to the ROW would occur on roads that are publicly maintained by the city, county, or state road system and are open routes on public land, which are designated by BLM.

3.3.1.1 Description of Major Soil Associations

Soils in the Proposed Project area were identified using the following three sources: (1) Natural Resources Conservation Service county soil survey maps; (2) the State Soil Geographic Database (STATSGO); and (3) the soil survey of the Mojave River area (USDA 1984). STATSGO is a general soil association map developed by the National Cooperative Soil Survey and distributed by the Natural Resources Conservation Service (NRCS, formerly Soil Conservation Service) of the U.S. Department of Agriculture. Soil maps for STATSGO are compiled by generalizing from more detailed soil survey maps where they are available, and then extrapolating, based on geology, topography, vegetation, climate, and Land Remote Sensing Satellite (LANDSAT) images, across areas where no detailed survey data are available. Although STATSGO data have limitations, and are not meant to be used for project-specific siting decisions, they are the only data source for most of the Proposed Project area.

Greater than 80 percent (182 miles) of the soils traversed by the pipeline are classified as sandy loam, loamy sand, loamy fine sand, or fine sand. These soil types are well drained with slopes of less than 10 percent. Greater than 90 percent of the soils encountered have severe to extremely severe soil limitations that make them unsuitable for agricultural use. Nearly 85 percent of the soils encountered are classified as not hydric. The pipeline would not pass through "prime farmland" or "farmland of statewide importance" as defined under the Farmland Protection Policy Act.

Major soil associations in the Proposed Project area are: Wasco-Rosamond-Cajon, Cajon-Arizo, Urban land-Tujunga-Soboba-Hanford, Nebona-Mirage-Joshua-Cajon, Rositas-Carrizo, Typic Torriorthents-Gypill-Cave-Badland, and Skyhaven-Rillito-Mead-McCullough-Ireteba-Bluepoint. Soil associations in the Proposed Project area are listed in Table 3.3-1 by percent total area.

This section describes soils that occur on five percent or more of the Proposed Project area. A complete list of soil associations by milepost is provided in Table 3.3-2 and illustrated in Figures 3.3-1, 3.3-2, and 3.3-3 (Maps 1 to 3).

Wasco-Rosamond-Cajon soils occur along 17.2 percent (39.1 miles) of the pipeline (see Table 3.3-1). The association consists of very deep, nearly-level to slightly sloping, well-drained, sandy-loam soils. Wasco soils are found on recent alluvial fans and flood plains. Rosamond soils are found on the lower margin of the alluvial fans between the sloping fans and the playas. Cajon soils are found on alluvial fans, fan aprons, fan skirts, inset fans, and river terraces. The soils of this association are classified as very severely limited, making them unsuitable for cultivation. Erosion may also be an issue unless low-growing plant cover is maintained.

Cajon-Arizo soils are encountered along 9.6 percent (21.8 miles) of the pipeline. This association consists of very deep, nearly level to moderately sloping, somewhat-excessively-drained, loamy-fine-sand soils. Cajon soils are found as explained above under the description of the Wasco-Rosamond-Cajon soil association. Arizo soils are found on recent alluvial fans, inset fans, fan aprons, fan skirts, stream terraces, floodplains of intermittent streams, and channels. The soils of this association are classified as very severely limited, making them unsuitable for cultivation. Erosion may also be an issue unless low-growing plant cover is maintained.

Urban land-Tujunga-Soboba-Hanford soils are encountered along 8.1 percent (18.3 miles) of the ROW. The association consists of deep to very deep, nearly level to moderately sloping, well-drained, loam soils. Tujunga soils are found on alluvial fans and flood plains. Soboba soils are found on alluvial fans and flood plains. Hanford soils are found on stream bottoms, floodplains, and alluvial fans. The soils of this association are classified as less severely limited than the other soil associations traversed by the pipeline, but special conservation practices, reduced plant choices, or both are required. Erosion may be an issue unless low-growing plant cover is maintained. These soils are mainly used as wildlife habitat and for grazing. They can also be used for homesite development (USDA 1984). The uses of this soil type are limited due to low precipitation and the low to moderate risk of water erosion due to flash flooding.

Nebona-Mirage-Joshua-Cajon soils are encountered along 7.9 percent (17.9 miles) of the pipeline. This association consists of shallow to very deep, slightly to moderately sloping, somewhat-excessively-drained, fine-sand soils. Nebona soils are found on terraces. Mirage soils are found on old terraces with well developed erosion pavement. Joshua soils are found on old terraces with a well-developed erosion pavement that consists of pebbles and cobbles. Cajon soils are found as explained above under the description of the Wasco-Rosamond-Cajon soil association. The soils of this association are classified as very severely limited, making them unsuitable for cultivation. Erosion may also be an issue unless low-growing plant cover is maintained.

Table 3.3-1 Summary of Soil Types and Limitations by Percent of Total Pipeline Length

% Total Pipeline Length	Miles Along Pipeline	Soil Association	Texture Class	Capability Class (Non-Irrigated)[a, b]	Capability Subclass (Non-Irrigated)[c]	Drainage Class	Hydric Class	Slope Percent (%)
17.2	39.1	Wasco-Rosamond-Cajon	Sandy loam	7	e	Well drained	Not hydric	2 to 5
9.6	21.8	Cajon-Arizo	Loamy fine sand	7	e	Somewhat excessively drained	Not hydric	2 to 8
8.1	18.3	Urban land-Tujunga-Soboba-Hanford	Loam	3	e	Well drained	Not hydric	2 to 9
7.9	17.9	Nebona-Mirage-Joshua-Cajon	Fine sand	7	e	Somewhat excessively drained	Not hydric	5 to 9
7.8	17.8	Rositas-Carrizo	Sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
7.1	16.0	Typic Torriorthents-Gypill-Cave-Badland	Sandy loam	7	s	Well drained	Unknown	2 to 7
5.8	13.1	Skyhaven-Rillito-Mead-McCullough-Ireteba-Bluepoint	Loamy sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
4.4	9.9	Wasco-Helendale-Bryman	Sandy clay loam	7	e	Well drained	Not hydric	0 to 2
4.2	9.6	Nickel-Blackmount-Arizo	Sandy loam	7	s	Well drained	Not hydric	2 to 8
3.8	8.6	Rillito-Gunsight	Sandy loam	7	s	Somewhat excessively drained	Not hydric	1 to 40
3.5	7.9	Wilshire-Soboba-Oak Glen-Avawatz	Sandy loam	6	e	Somewhat excessively drained	Partially hydric	2 to 9
2.8	6.3	Weiser-Tencee-Naye-Mormon Mesa-Caliza-Arizo	Loamy sand	7	s	Well drained	Not hydric	2 to 8
2.6	5.9	Trigger-Rock outcrop-Calvista	Coarse sandy loam	7	e	Well drained	Not hydric	2 to 15
2.0	4.5	Villa-Victorville-Riverwash-Cajon	Loamy sand	7	e	Somewhat excessively drained	Partially hydric	2 to 9
1.9	4.4	Glencar-Cave-Bluepoint	Fine sandy loam	7	w	Excessively drained	Not hydric	2 to 4
1.6	3.6	Rock outcrop-Gullied land-Garlock-Bull Trail	Fine sand	7	s	Excessively drained	Partially hydric	2 to 9
1.5	3.5	Bluepoint-Arizo	Sandy loam	7	w	Excessively drained	Not hydric	2 to 8
1.3	2.9	Tecopa-Rock outcrop-Lithic Torriorthents	Sandy loam	7	s	Well drained	Not hydric	30 to 50
1.2	2.8	Playas	Clay	8	w	No data	Partially hydric	0 to 1
1.0	2.3	Rock outcrop-Pacifico-Etsel family-Cieneba	Sandy loam	7	s	Excessively drained	Not hydric	30 to 50
1.0	2.3	McCarran-Grapevine-Bracken-Bluepoint	Fine sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
1.0	2.3	Cajon-Bitterwater-Bitter-Badland	No data	8	e	No data	Not hydric	9 to 50

Table 3.3-1 Summary of Soil Types and Limitations by Percent of Total Pipeline Length

% Total Pipeline Length	Miles Along Pipeline	Soil Association	Texture Class	Capability Class (Non-Irrigated)[a, b]	Capability Subclass (Non-Irrigated)[c]	Drainage Class	Hydric Class	Slope Percent (%)
0.7	1.7	Rock outcrop-Hindu-Gypill-Badland	No data	8	e	Well drained	Unknown	10 to 70
0.7	1.7	Rock outcrop	Fine sandy loam	7	s	Somewhat excessively drained	Not hydric	15 to 50
0.7	1.6	Ramona-Hanford-Greenfield	Sandy loam	6	s	Well drained	Not hydric	0 to 2
0.4	0.8	Weiser-Las Vegas-Jean-Dalian-Cave	Sandy loam	7	w	Excessively drained	Not hydric	2 to 8
0.1	0.3	St. Thomas-Rock outcrop	Fine sandy loam	7	s	Well drained	Not hydric	30 to 50
0.1	0.1	Norob-Halloran-Cajon-Bryman	Coarse sandy loam	7	e	Well drained	Partially hydric	0 to 2
100.0	**227.0**							

Source: STATSGO 2006a; STATSGO 2006b

Notes:

a Irrigated capability-class and subclass data were available but were not included in this table because none of the Proposed Project area is classified as prime farmland.

b Capability class definitions:

1 Soils have few limitations that restrict their use.
2 Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.
3 Soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.
4 Soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.
5 Soils are not likely to erode but have other limitations, impractical to remove, that limit their use.
6 Soils have severe limitations that make them generally unsuitable for cultivation.
7 Soils have very severe limitations that make them unsuitable for cultivation.
8 Soils and landforms have limitations that nearly preclude their use for commercial crop production.

c Capability subclass definitions:

e Limitation due to erosion unless low-growing plant cover is maintained.
w Water in or on the soil interferes with plant growth or cultivation (corrected by artificial drainage).
s Soil is limited mainly because it is shallow, droughty, or stony.

Table 3.3-2 Soil Types and Limitations by Milepost

Milepost	Distance (Miles)	Soil Association and Map Unit	Texture Class	Capability Class (Non-Irrigated)[a, b]	Capability Subclass (Non-Irrigated)[c]	Drainage Class	Hydric Class	Slope (%)
San Bernardino County, California								
0.00	15.37	Urban land-Tujunga-Soboba-Hanford (s1027)	Loam	3	e	Well drained	Not hydric	2 to 9
15.37	0.16	Rock outcrop-Pacifico-Etsel family-Cieneba (s1052)	Sandy loam	7	s	Excessively drained	Not hydric	30 to 50
15.53	2.97	Urban land-Tujunga-Soboba-Hanford (s1027)	Loam	3	e	Well drained	Not hydric	2 to 9
18.50	1.02	Rock outcrop-Pacifico-Etsel family-Cieneba (s1052)	Sandy loam	7	s	Excessively drained	Not hydric	30 to 50
19.52	1.40	Wilshire-Soboba-Oak Glen-Avawatz (s1047)	Sandy loam	6	e	Somewhat excessively drained	Partially hydric	2 to 9
20.92	0.88	Rock outcrop-Pacifico-Etsel family-Cieneba (s1052)	Sandy loam	7	s	Excessively drained	Not hydric	30 to 50
21.80	1.78	Wilshire-Soboba-Oak Glen-Avawatz (s1047)	Sandy loam	6	e	Somewhat excessively drained	Partially hydric	2 to 9
23.58	0.25	Rock outcrop-Pacifico-Etsel family-Cieneba (s1052)	Sandy loam	7	s	Excessively drained	Not hydric	30 to 50
23.83	4.67	Wilshire-Soboba-Oak Glen-Avawatz (s1047)	Sandy loam	6	e	Somewhat excessively drained	Partially hydric	2 to 9
28.51	3.60	Rock outcrop-Gullied land-Garlock-Bull Trail (s1023)	Fine sand	7	s	Excessively drained	Partially hydric	2 to 9
32.11	1.63	Ramona-Hanford-Greenfield (s1009)	Sandy loam	6	s	Well drained	Not hydric	0 to 2
33.74	1.75	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
35.48	1.39	Wasco-Helendale-Bryman (s1032)	Sandy clay loam	7	e	Well drained	Not hydric	0 to 2
36.88	6.96	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
43.84	1.37	Wasco-Helendale-Bryman (s1032)	Sandy clay loam	7	e	Well drained	Not hydric	0 to 2
45.21	1.06	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
46.27	7.15	Wasco-Helendale-Bryman (s1032)	Sandy clay loam	7	e	Well drained	Not hydric	0 to 2
53.42	0.94	Villa-Victorville-Riverwash-Cajon (s1008)	Loamy sand	7	e	Somewhat excessively drained	Partially hydric	2 to 9

Table 3.3-2 Soil Types and Limitations by Milepost

Milepost	Distance (Miles)	Soil Association and Map Unit	Texture Class	Capability Class (Non-Irrigated)[a, b]	Capability Subclass (Non-Irrigated)[c]	Drainage Class	Hydric Class	Slope (%)
54.36	4.52	Nebona-Mirage-Joshua-Cajon (s1007)	Fine sand	7	e	Somewhat excessively drained	Not hydric	5 to 9
58.88	3.53	Trigger-Rock outcrop-Calvista (s1134)	Coarse sandy loam	7	e	Well drained	Not hydric	2 to 15
62.41	2.92	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
65.33	6.60	Nebona-Mirage-Joshua-Cajon (s1007)	Fine sand	7	e	Somewhat excessively drained	Not hydric	5 to 9
71.93	0.44	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
72.36	2.12	Nebona-Mirage-Joshua-Cajon (s1007)	Fine sand	7	e	Somewhat excessively drained	Not hydric	5 to 9
74.48	3.39	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
77.88	2.72	Nebona-Mirage-Joshua-Cajon (s1007)	Fine sand	7	e	Somewhat excessively drained	Not hydric	5 to 9
80.60	1.92	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
82.52	1.01	Nebona-Mirage-Joshua-Cajon (s1007)	Fine sand	7	e	Somewhat excessively drained	Not hydric	5 to 9
83.53	0.41	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
83.94	0.61	Nebona-Mirage-Joshua-Cajon (s1007)	Fine sand	7	e	Somewhat excessively drained	Not hydric	5 to 9
84.55	0.62	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
85.17	0.34	Nebona-Mirage-Joshua-Cajon (s1007)	Fine sand	7	e	Somewhat excessively drained	Not hydric	5 to 9
85.51	1.68	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
87.20	3.52	Villa-Victorville-Riverwash-Cajon (s1008)	Loamy sand	7	e	Somewhat excessively drained	Partially hydric	2 to 9
90.72	11.77	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
102.49	0.11	Norob-Halloran-Cajon-Bryman (s1039)	Coarse sandy loam	7	e	Well drained	Partially hydric	0 to 2
109.08	6.21	Wasco-Rosamond-Cajon (s1024)	Sandy loam	7	e	Well drained	Not hydric	2 to 5
115.29	4.54	Cajon-Arizo (s1143)	Loamy fine sand	7	e	Somewhat excessively drained	Not hydric	2 to 8

Table 3.3-2 Soil Types and Limitations by Milepost

Milepost	Distance (Miles)	Soil Association and Map Unit	Texture Class	Capability Class (Non-Irrigated)$^{a, b}$	Capability Subclass (Non-Irrigated)^{c}	Drainage Class	Hydric Class	Slope (%)
119.83	1.50	Cajon-Bitterwater-Bitter-Badland (s1128)	No data	8	e	No data	Not hydric	9 to 50
121.32	3.44	Rositas-Carrizo (s1137)	Sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
124.76	0.31	Tecopa-Rock outcrop-Lithic Torriorthents (s1126)	Sandy loam	7	s	Well drained	Not hydric	30 to 50
125.07	6.06	Rositas-Carrizo (s1137)	Sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
131.13	1.65	Rock outcrop (s1131)	Fine sandy loam	7	s	Somewhat excessively drained	Not hydric	15 to 50
132.79	2.44	Rillito-Gunsight (s1140)	Sandy loam	7	s	Somewhat excessively drained	Not hydric	1 to 40
135.22	2.42	Rositas-Carrizo (s1137)	Sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
137.64	0.40	Tecopa-Rock outcrop-Lithic Torriorthents (s1126)	Sandy loam	7	s	Well drained	Not hydric	30 to 50
138.04	0.53	Rillito-Gunsight (s1140)	Sandy loam	7	s	Somewhat excessively drained	Not hydric	1 to 40
138.57	0.77	Cajon-Bitterwater-Bitter-Badland (s1128)	No data	8	e	No data	Not hydric	9 to 50
139.35	5.66	Rillito-Gunsight (s1140)	Sandy loam	7	s	Somewhat excessively drained	Not hydric	1 to 40
145.01	0.25	Playas (s1138)	Clay	8	w	No data	Partially hydric	0 to 1
145.26	5.86	Rositas-Carrizo (s1137)	Sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
151.12	6.35	Cajon-Arizo (s1143)	Loamy fine sand	7	e	Somewhat excessively drained	Not hydric	2 to 8
157.47	1.09	Trigger-Rock outcrop-Calvista (s1134)	Coarse sandy loam	7	e	Well drained	Not hydric	2 to 15
158.55	5.44	Cajon-Arizo (s1143)	Loamy fine sand	7	e	Somewhat excessively drained	Not hydric	2 to 8
163.99	1.32	Trigger-Rock outcrop-Calvista (s1134)	Coarse sandy loam	7	e	Well drained	Not hydric	2 to 15
165.31	5.43	Cajon-Arizo (s1143)	Loamy fine sand	7	e	Somewhat excessively drained	Not hydric	2 to 8

Table 3.3-2 Soil Types and Limitations by Milepost

Milepost	Distance (Miles)	Soil Association and Map Unit	Texture Class	Capability Class (Non-Irrigated)[a, b]	Capability Subclass (Non-Irrigated)[c]	Drainage Class	Hydric Class	Slope (%)
170.74	3.49	Bluepoint-Arizo (s1123)	Sandy loam	7	w	Excessively drained	Not hydric	2 to 8
174.23	3.11	Nickel-Blackmount-Arizo (s1124)	Sandy loam	7	s	Well drained	Not hydric	2 to 8
177.34	0.30	St. Thomas-Rock outcrop (s1125)	Fine sandy loam	7	s	Well drained	Not hydric	30 to 50
177.64	2.91	Nickel-Blackmount-Arizo (s1124)	Sandy loam	7	s	Well drained	Not hydric	2 to 8
180.55	1.95	Tecopa-Rock outcrop-Lithic Torriorthents (s1126)	Sandy loam	7	s	Well drained	Not hydric	30 to 50
182.50	0.27	Skyhaven-Rillito-Mead-McCullough-Ireteba-Bluepoint (s1144)	Loamy sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
182.77	0.28	Tecopa-Rock outcrop-Lithic Torriorthents (s1126)	Sandy loam	7	s	Well drained	Not hydric	30 to 50
183.04	7.52	Skyhaven-Rillito-Mead-McCullough-Ireteba-Bluepoint (s1144)	Loamy sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
190.57	2.58	Playas (s1038)	Silty clay	8	w	No data	Partially hydric	0 to 1
193.14	1.91	Skyhaven-Rillito-Mead-McCullough-Ireteba-Bluepoint (s1144)	Loamy sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
Clark County, Nevada								
195.05	3.37	Skyhaven-Rillito-Mead-McCullough-Ireteba-Bluepoint (s1144)	Loamy sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
198.41	3.23	Nickel-Blackmount-Arizo (s1124)	Sandy loam	7	s	Well drained	Not hydric	2 to 8
201.64	2.50	Glencarb-Cave-Bluepoint (s1145)	Fine sandy loam	7	w	Excessively drained	Not hydric	2 to 4
204.13	0.34	Nickel-Blackmount-Arizo (s1124)	Sandy loam	7	s	Well drained	Not hydric	2 to 8
204.47	1.86	Glencarb-Cave-Bluepoint (s1145)	Fine sandy loam	7	w	Excessively drained	Not hydric	2 to 4
206.33	10.57	Typic Torriorthents-Gypill-Cave-Badland (s5742)	Sandy loam	7	s	Well drained	Unknown	2 to 7
216.91	1.66	Rock outcrop-Hindu-Gypill-Badland (s5590)	No data	8	e	Well drained	Unknown	10 to 70
218.57	3.28	Typic Torriorthents-Gypill-Cave-Badland (s5742)	Sandy loam	7	s	Well drained	Unknown	2 to 7
221.85	6.34	Weiser-Tencee-Naye-Mormon Mesa-Caliza-Arizo (s5597)	Loamy sand	7	s	Well drained	Not hydric	2 to 8
228.19	1.39	Typic Torriorthents-Gypill-Cave-Badland (s5742)	Sandy loam	7	s	Well drained	Unknown	2 to 7

Table 3.3-2 Soil Types and Limitations by Milepost

Milepost	Distance (Miles)	Soil Association and Map Unit	Texture Class	Capability Class (Non-Irrigated)[a, b]	Capability Subclass (Non-Irrigated)[c]	Drainage Class	Hydric Class	Slope (%)
229.58	0.82	Weiser-Las Vegas-Jean-Dalian-Cave (s5582)	Sandy loam	7	w	Excessively drained	Not hydric	2 to 8
230.40	2.28	McCarran-Grapevine-Bracken-Bluepoint (s5585)	Fine sand	7	s	Somewhat excessively drained	Not hydric	0 to 2
232.68	0.78	Typic Torriorthents-Gypill-Cave-Badland (s5742)	Sandy loam	7	s	Well drained	Unknown	2 to 7

Source: STATSGO 2006a; STATSGO 2006b

Notes:

a Irrigated capability-class and subclass data were available but were not included in this table because none of the proposed Project area is classified as prime farmland.

b Capability class definitions:
1 Soils have few limitations that restrict their use.
2 Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.
3 Soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.
4 Soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.
5 Soils are not likely to erode but have other limitations, impractical to remove, that limit their use.
6 Soils have severe limitations that make them generally unsuitable for cultivation.
7 Soils have very severe limitations that make them unsuitable for cultivation.
8 Soils and landforms have limitations that nearly preclude their use for commercial crop production.

c Capability subclass definitions:
e Limitation due to erosion unless low-growing plant cover is maintained.
w Water in or on the soil interferes with plant growth or cultivation (corrected by artificial drainage).
s Soil is limited mainly because it is shallow, droughty, or stony.

Rositas-Carrizo soils are encountered along 7.8 percent (17.8 miles) of the pipeline. The association consists of very deep, level to slightly sloped, somewhat-excessively-drained, sandy soils. Rositas soils are found on dunes and sand sheets. Carrizo soils are found on flood plains, alluvial fans, fan piedmonts and bolson floors. The soils of this association are classified as very severely limited, making them unsuitable for cultivation. Erosion may also be an issue unless low-growing plant cover is maintained.

Typic Torriorthents-Gypill-Cave-Badland soils are encountered along 7.1 percent (16.0 miles) of the pipeline. This association consists of shallow, slightly to moderately sloping, well-drained, sandy-loam soils. The soils are found on eroding hills and escarpments as well as on fan terraces, fan piedmonts, and stream terraces. The soils of this association are classified as severely limited, making them unsuitable for cultivation. The soils are limited mainly because they are shallow, droughty, or stony.

Skyhaven-Rillito-Mead-McCullough-Ireteba-Bluepoint soils are encountered along 5.8 percent (13.1 miles) of the pipeline. This association consists of deep, level to slightly sloped, somewhat-excessively-drained, loamy-sand soils. Bluepoint soils are found on dunes and sand sheets. The soils of this association are classified as severely limited, making them unsuitable for cultivation. The soils are limited mainly because they are droughty or stony.

3.3.2 Applicable Regulations, Plans, and Policies

Federal and State Regulations pertaining to agricultural land and soils include the Farmland Protection Policy Act, the California Land Conservation (Williamson) Act, and the California Department of Conservation Farmland Mapping and Monitoring Program. This program identifies and designates lands according to categories defined in the Farmland Protection Policy Act (7 United States Code 4201, et. seq.).

Agricultural regulations, however, do not pertain to the Proposed Project because the pipeline would not pass through "prime farmland" areas. Greater than 90 percent of the area is classified as very severely limited (Table 3.3-1). Furthermore the Proposed Project is an upgrade to the existing Calnev system, and hence, it is not anticipated that agricultural regulations would impose restrictions.

3.3.3 Environmental Consequences

3.3.3.1 Requirements and Focus of National Environment Policy Act (NEPA) versus California Environmental Quality Act (CEQA) Analyses

<u>Potential Impacts to be Evaluated Under NEPA</u>

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential impacts to soil resources have been identified for evaluation:

- The potential for the Proposed Project to result in an increase of erosion or loss of topsoil (addressed as SOIL-1 below).
- The potential for the Proposed Project, if located on unstable soils, to create a geologic hazard to onsite or offsite resources such as landslides or subsidence (addressed as SOIL-2 below).

In addition to potential impacts associated with soil resources, issues associated with soil erosion could affect air quality and/or water quality. These potential impacts are addressed in Section 3.5 (Water Resources/Hydrology and Water Quality) and Section 3.6, Air Quality and Climate.

CEQA Significance Criteria

Under CEQA, the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to soils, the relevant CEQA significance criteria provided in Section VI of the checklist are based on whether the proposed project would:

- Result in substantial soil erosion or loss of topsoil (addressed as SOIL-1 below);
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Proposed Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse (addressed as SOIL-2 below);
- Be located on expansive soil as defined in Table 18 1 B of the Uniform Building Code (1994), creating substantial risks to life or property (included as part of Soil-2 below); or
- Have soils incapable of adequately supporting septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

The criteria associated with wastewater disposal is not applicable to the Proposed Project because it would not involve the disposal of wastewater. Therefore no impacts with respect to this criterion would be significant with respect to CEQA.

3.3.3.2 Impact Analysis

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under NEPA and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Mitigation measures (MMs) are compiled in Section 3.3.4, Summary of Mitigation.

The only reasonably expected impacts in the Proposed Project area would be due to erosion and the loss of topsoil. The construction and maintenance activities outlined in Chapter 2.2 could lead to increased erosion from wind or water or the loss of topsoil. Hence, the impacts and associated mitigation measures discussed in this section relate to erosion control and topsoil management. Prevention and response plans for spills and releases are also discussed in this section.

Proposed Project/Proposed Action (Alternative 1)

Impact SOIL-1: Soil Removal and Loss of Topsoil.

Short-term increases in erosion can occur as a result of the removal of vegetation during clearing and grading activities and the subsequent exposure of topsoil to wind action and precipitation as well as changes in slope. In addition, in areas where vegetation is slow to become re-established, such as use of the open-cut construction method through sandy or water-saturated soils, increased erosion can occur.

Several factors affect the potential for soil to be eroded by water or wind including soil texture, the length and percent of slope, vegetative cover, and intensity of rainfall or wind. Soils in the Proposed Project area were evaluated for susceptibility to erosion by water and wind, and some have the potential for increased erosion due to Proposed Project activities. Such erosion would result in an impact that would be a direct, adverse impact under NEPA, and that would be significant under CEQA.

The implementation of MM SOIL-1a and MM SOIL-1b would reduce or avoid potential impacts from erosion and topsoil removal, and would reduce these impacts to less than significant levels under CEQA. Residual impacts under NEPA would remain after mitigation because, although the mitigation measures would minimize erosion, some erosion would likely still occur.

- **MM SOIL-1a: Use of Erosion Control Devices and Topsoil Best Management Practices.** To minimize or avoid potential impacts from erosion, the Applicant would use Best Management Practices (BMPs) to control erosion as required by the BLM and the USFS Management Area Agreement with the State Water Resources Control Board to maintain compliance with the Clean Water Act. Temporary erosion controls, including slope breakers, interceptor diversions and sediment filter devices (e.g., hay bales and silt fences), would be installed prior to initial ground disturbance. As required, temporary trench breakers would be installed immediately following ditch excavation or mulching. Erosion control fabrics or netting may be used on critical slopes (greater than 5 percent). Soil and brush removed would be *windrowed*—piled in a manner that minimizes loss to wind erosion. The effectiveness of temporary erosion control devices would be monitored by Calnev Environmental Inspectors.

  BMPs for topsoil segregation would be followed to help ensure post-construction revegetation success. This means that topsoil removed from the Proposed Project area would be segregated from subsoil removed to prevent mixing.

  The Applicant would develop a site-specific erosion control plan for BLM and USFS lands that would include monitoring requirements, timelines, communication protocols and other BMP measures that would be followed until the disturbed area is deemed stable. Temporary erosion control structures would be maintained until the Proposed Project area is revegetated successfully or, in the case of the desert areas where revegetation is a process extending over a number of years, until the disturbed area is deemed stable. Following successful revegetation of construction areas, temporary erosion control devices would be removed. The effectiveness of revegetation and permanent erosion control devices would be monitored by the Calnev operating personnel during the long-term operation and maintenance of the pipeline system.

  Additionally, the Applicant would consult with the BLM, USFS, or other jurisdictional agency regarding existing restoration and dust control plans for the Proposed Project area. Such plans would be supported and implemented by the Applicant. Further information about erosion control and revegetation plans is provided in Chapter 2.

The activities required under this mitigation measures will be incorporated into the Restoration Plan.

- **MM SOIL-1b: Storm Water Pollution Prevention Plan.** Increased soil erosion is of particular concern at waterbodies where it can result in increased sedimentation. A sedimentation control plan would be incorporated into the Storm Water Pollution Prevention Plan (SWPPP). Flash flooding would also be addressed in the SWPPP.
- **MM SOIL-1c: Blasting Plan.** Also included as MM GEO-2, a detailed Blasting Plan would be developed after final project design has been completed and further geotechnical studies have been conducted. The plan would outline measures to control dust and erosion as well as impacts to topsoil.
- **MM SOIL-1d: Suspend Heavy Equipment Use in Saturated Conditions.** Heavy equipment use will be suspended in conditions where saturated soils exceed a depth of 12 inches. Heavy equipment will not be used on dry lakebeds unless the lakebed surface is dry.

Impact SOIL-2: Potential Impacts from Unstable Soils.

This potential impact was partially evaluated as part of impact GEO-1 in Section 3.2.3.2. In that section, the potential for a pipeline rupture due to placement of the pipeline in unstable materials was evaluated. Although related, this potential impact addresses whether the placement of the Proposed Project on unstable materials could potentially result in creating on- or off-site landslide, or exposing the pipeline to lateral spreading, subsidence, differential settlement, liquefaction, or collapse hazards.

The existence and operation of the pipeline within subsurface soils is not expected to have any potential for creating instability in the soils or geologic units in which it is placed. However, it is possible that the excavation of trenches required for installation of the pipeline could create instability if not conducted properly. This could occur if the trenching were to occur at the base of an unstable slope, thus removing the support for the slope and creating conditions in which slope failure could occur. If slope failure were to occur, there would be no risk from a release of hazardous materials, because the pipeline would not yet be operational. However, there could potentially be a risk to construction workers, public, and/or resources located downhill of the potential slide area. If such a slide were to occur, its impacts would be direct and adverse, and would be significant under CEQA. Once the pipeline is in place and buried, the existence of the pipeline would actually help to secure unstable slopes.

As discussed in Section 3.2.4, mitigation measure MM GEO-1h was identified to minimize the potential for pipeline rupture, as follows:

MM GEO-1h: Avoid soils susceptible to movement. Where possible avoid installing pipeline and new roads where soil is susceptible to mass movement and/or steep slopes are present. In addition to minimizing the potential for pipeline rupture during operation, MM GEO-1h would minimize the potential for construction of the pipeline to cause slope failure. Implementation of this mitigation measure would reduce the impacts under CEQA to a level that is less than significant.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to soil resources associated with the seven route variations are described below:

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to soil resources. Neither segment crosses unstable soils, and because both routes occur within an urban area, neither segment would present the potential for soil erosion or loss of topsoil. Therefore, the potential soil resource impacts associated with the Bloomington route would be the same as those identified for the Proposed Project.

Rialto Alternative

The Rialto Alternative route variation, and the segment of the Proposed Project that it would replace within the City of Rialto, do not have any differences with respect to soil resources. Neither segment crosses unstable soils, and because both routes occur within an urban area, neither segment would present the potential for soil erosion or loss of topsoil. Therefore, the potential soil resource impacts associated with the Rialto route would be the same as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route would shorten the length of the pipeline by 0.2 miles. By using the HDD construction method under Interstate 15 instead of the open cut method through the unnamed riparian area, the Wagon Train Road route would substantially reduce any potential for soil erosion or loss of topsoil within the unnamed riparian area. Also, by avoiding use of the open cut method within the riparian area, the route would avoid soils that are potentially unstable due to water saturation. Therefore, the Wagon Train Road route would avoid the potentially adverse impact to the unnamed riparian area, and would therefore have a lower level of impacts to soil resources than the Proposed Project.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa route would increase the length of the pipeline by approximately 0.8 miles. The longer length of the pipeline would slightly increase the amount of potential soil disturbance, and therefore may have a slightly increased risk of soil erosion during construction. However, neither segment crosses unstable soils, and because the pipeline on both routes occurs within a residential area, any increase in soil erosion potential would be temporary. Therefore, the potential soil resource impacts associated with the Phelan Road/Baldy Mesa route would be the same as those identified for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, are very similar with respect to soil resources. The Proposed Route diverges from the route of the existing pipelines in order to avoid constructability issues associated with placing the proposed pipeline within an active wash. The Proposed Project route would have a reduced potential for soil erosion in this area, and would avoid any potential instability associated with loose soils in the wash. Therefore, the potential soil resource impacts associated with the Zzyzx route would be slightly higher than those identified for the Proposed Project. If selected, these impacts associated with the Zzyzx Alternative route would be adequately addressed by mitigation measures, especially MM SOIL-1a, discussed for the Proposed Project.

Baker Alternative

The Baker Alternative route would shorten the length of the pipeline by approximately 1 mile. The shorter length of the pipeline would slightly reduce the potential for soil erosion during construction. However, neither segment crosses unstable soils, and any increase in soil erosion potential associated with the Proposed Route would be temporary. Therefore, the potential soil resource impacts associated with the Baker route would be the same as those identified for the Proposed Project.

Silver Lake Pump Station Alternative

The alternative and Proposed Action locations for the proposed Silver Lake Pump Station do not have any differences with respect to soil resources. Because the Proposed location occurs adjacent to a switchyard and school, and the alternative location occurs in an undeveloped area, any potential disturbance of topsoil would be slightly higher at the alternative location than the Proposed location. However, neither location is located on unstable soils, and any increase in soil erosion potential associated with locating the pump station in an undisturbed area would be temporary. Therefore, the potential soil resource impacts associated with the alternative location for the Silver Lake Pump Station would be the same as those identified for the Proposed Project.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation, and the segment of the Proposed Project that it would replace that passes through Bracken Junction, do not have any differences with respect to soil resources. Neither segment crosses unstable soils, and because both routes occur within an urban area, neither segment would present the potential for soil erosion or loss of topsoil. Therefore, the potential soil resource impacts associated with the Sunset Lateral route route would be the same as those identified for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, modification of Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to soil resources.

Summary

Overall, Alternative 2 would have a slightly reduced level of impacts as compared to the Proposed Project. The primary difference would be a reduction of potential soil erosion impacts (SOIL-1) and avoidance of the placement of the pipeline within saturated soils (SOIL-2) by using the Wagon Train Road HDD. In addition, the route for Alternative 2 is slightly longer, so would have a slightly increased potential for soil erosion during construction. Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. These mitigation measures would reduce the level of impacts under CEQA to less than significant.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative location, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. With respect to soil resources, Alternative 3 would incorporate the reduced impacts to soil resources associated with avoidance of the unnamed riparian area at the Wagon Train Road HDD area. All other soil resources impacts under both NEPA and CEQA would remain the same as Alternatives 1 and 2.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure would be installed. No ground-disturbing activities would take place and potential impacts to soil resources resulting from current activities on the existing pipelines would remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems would be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines would remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, CA to Las Vegas, NV. No soil resource impacts are associated with the current operations.

For the purposes of CEQA, no significant impacts to soils would result if the No Project Alternative is adopted.

3.3.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.3-3, there are differences in impacts based on the route variations.

Table 3.3-3 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/ Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
Potential erosion and loss of topsoil.	Slightly longer route than Alternative 1, but has reduced potential for damage by unstable soils by avoiding active wash and riparian area.	Slightly longer route than Alternative 1, but has reduced potential for damage by unstable soils by avoiding active wash and riparian area. Potential impacts the same as Alternative 2.	No impacts.

3.3.4 Summary of Mitigation

A complete list of mitigation measures is presented by impact in Table 3.3-4. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.3-4 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Impact SOIL-1: Soil Removal and Loss of Topsoil	**MM SOIL-1a:** Use of Erosion Control Devices and Topsoil Best Management Practices **MM SOIL-1b**: Storm Water Pollution Prevention Plan **MM SOIL-1c:** Blasting Plan (also MM GEO-2) **MM SOIL-1d:** Suspend Heavy Equipment Use in Saturated Conditions	Throughout pipeline ROW and at waterbody crossings	BLM, USFS, /San Bernardino County	Pre- and Post-Construction
Impact SOIL-2: Potential Impacts from Unstable Soils	**MM GEO-1h**: Avoid Soils Susceptible to Movement	Throughout pipeline ROW at or near fault crossings, Mojave River Crossing (Liquefaction and unstable soils), Las Vegas Valley and Cajon Wash (Subsidence)	BLM, USFS, San Bernardino County	Pre- and Post-Construction

References

State Soil Geographic Database (STATSGO). 2006a. *Soil Survey of San Bernardino County, California*. http://soildatamart.nrcs.usda.gov. Accessed March 20, 2009.

State Soil Geographic Database (STATSGO). 2006b. Soil Survey of Clark County, Nevada. http://soildatamart.nrcs.usda.gov. Accessed March 20, 2009.

Uniform Building Code. 1994. *Table 18 1 B*.

United States Department of Agriculture (USDA), Soils Conservation Service, 1984. *Soil Survey of San Bernardino County, California, Mojave River Area*.

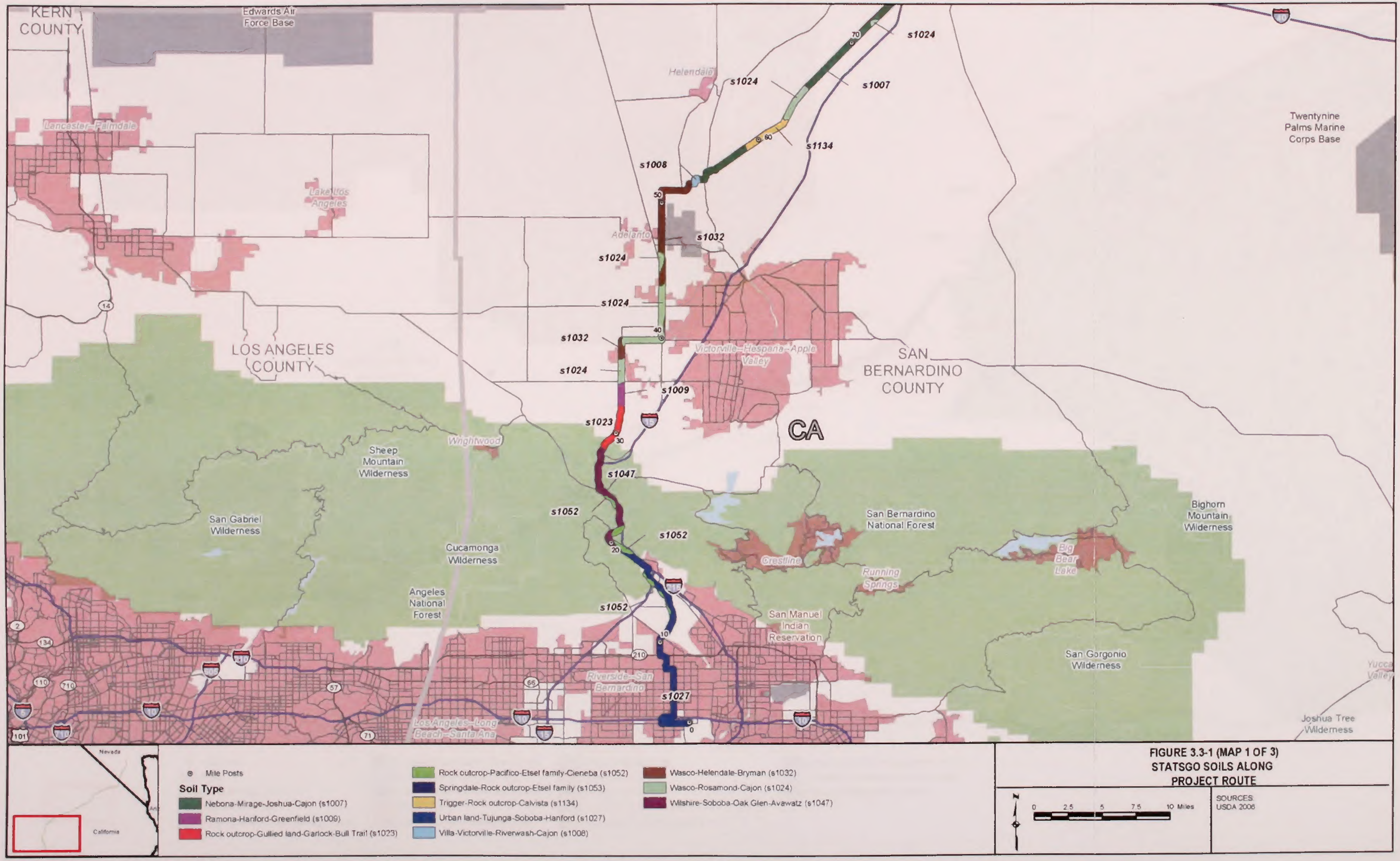

FIGURE 3.3-1 (MAP 1 OF 3)
STATSGO SOILS ALONG
PROJECT ROUTE

SOURCES:
USDA 2006

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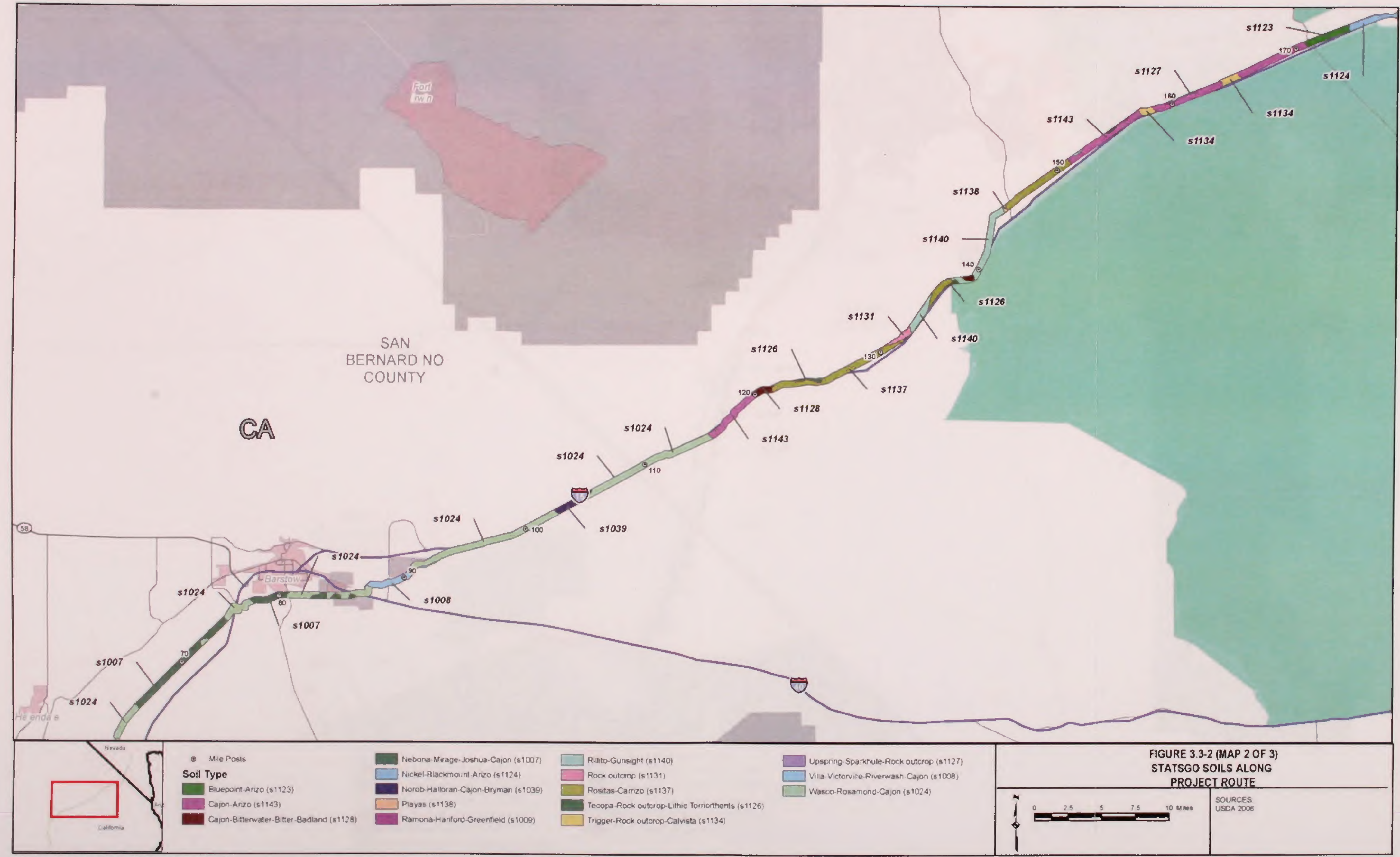

FIGURE 3.3-2 (MAP 2 OF 3)
STATSGO SOILS ALONG
PROJECT ROUTE

SOURCES
USDA 2006

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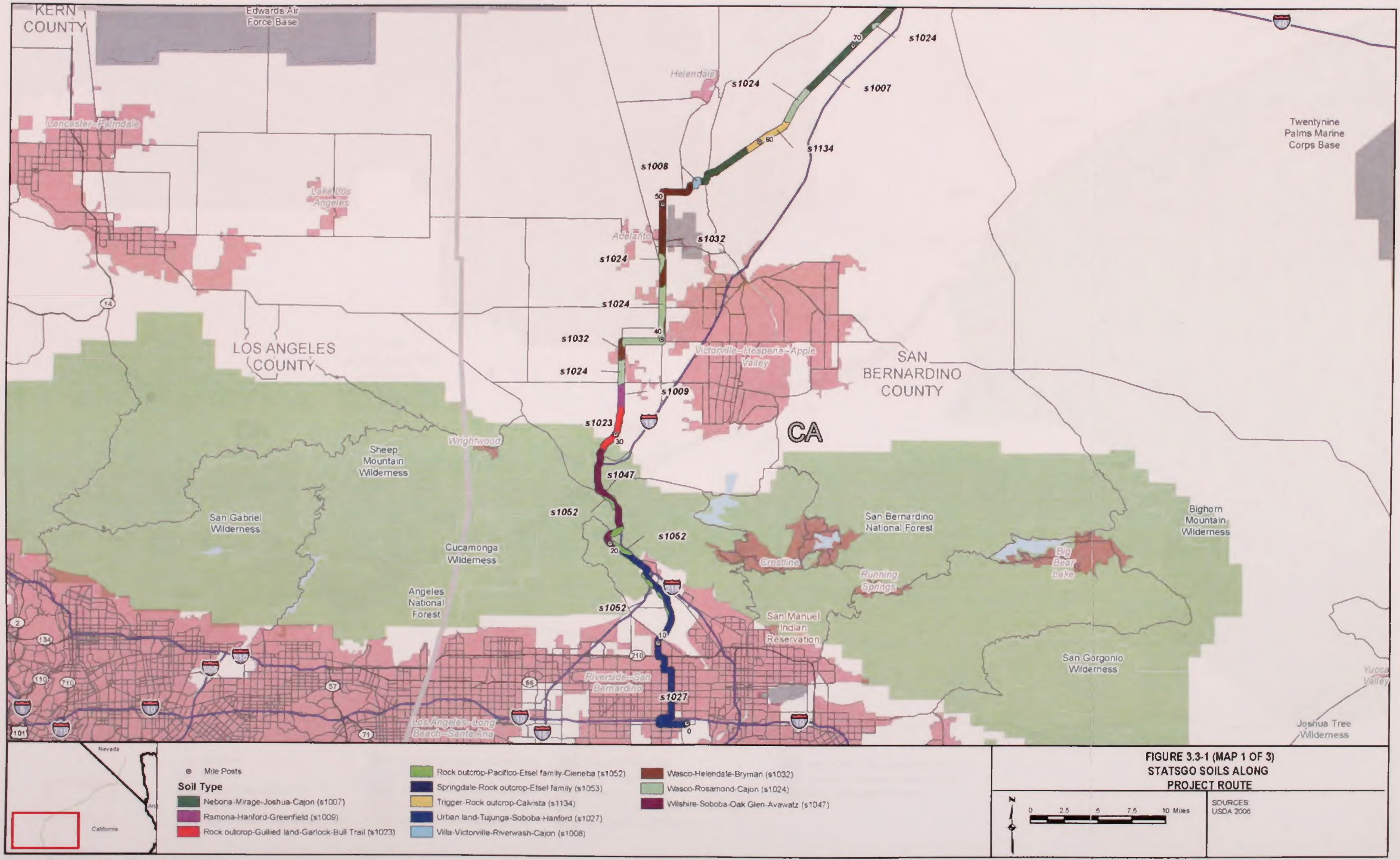

⊙ Mile Posts

Soil Type

- 🟩 Nebona-Mirage-Joshua-Cajon (s1007)
- 🟪 Ramona-Hanford-Greenfield (s1009)
- 🟥 Rock outcrop-Gullied land-Garlock-Bull Trail (s1023)
- 🟩 Rock outcrop-Pacifico-Etsel family-Cieneba (s1052)
- 🟦 Springdale-Rock outcrop-Etsel family (s1053)
- 🟨 Trigger-Rock outcrop-Calvista (s1134)
- 🟦 Urban land-Tujunga-Soboba-Hanford (s1027)
- 🟦 Villa-Victorville-Riverwash-Cajon (s1008)
- 🟫 Wasco-Helendale-Bryman (s1032)
- 🟩 Wasco-Rosamond-Cajon (s1024)
- 🟪 Wilshire-Soboba-Oak Glen-Avawatz (s1047)

FIGURE 3.3-1 (MAP 1 OF 3)
STATSGO SOILS ALONG
PROJECT ROUTE

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3.4 Energy and Minerals

This section describes the energy and mineral resources and mining activities that may be affected by the Proposed Project. Additionally, this section discusses applicable regulations and identifies potential impacts, both temporary and permanent, to energy and mineral resources.

During the scoping period, government agencies and members of the public did not identify any issues or concerns related to energy and mineral resources in the project area.

3.4.1 Affected Environment

The pipeline right-of-way (ROW) primarily traverses undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Project area crossed by the pipeline route include land under the jurisdiction of the United States (U.S.) Forest Service (USFS) and the U.S. Department of Defense (DoD). Lands under the jurisdiction of the State of California, the State of Nevada, San Bernardino County, and Clark County are also crossed by the pipeline ROW. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

Oil and gas resources available near the pipeline ROW were identified using a map produced by the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (1999) and Nevada Bureau of Mines and Geology (2007). There is no oil or gas production near the ROW. The USFS reported an exploratory well was attempted near Cajon Pass to a depth of 10,000 feet, but was dry (USFS comments). The nearest oil and gas seeps are located more than 30 miles from the ROW in San Bernardino County. In Clark County, eight to ten oil and gas seeps are located within five miles of the ROW and three seeps are located about two miles from the ROW.

Non-petroleum mineral resources available near the ROW were identified by compiling data from the United States Geological Survey ([USGS] 2005). Multiple mining operations are located in close proximity to the project area. A list of mining sites, both active and inactive, and the location of the mines in proximity to the ROW and alternatives is shown in Table 3.4-1 and Figure 3.4-1. Distance from the pipeline, site name, commodity and operation type, and operation status are outlined in Table 3.4-1.

Over one-third of mineral resources identified within one mile of the ROW (Table 3.4-1) have been labeled as past producers (37.8 percent). This means that they were once mined but that mining operations have ceased. Many of the mineral resources along the ROW are in the prospecting stage of development (36.0 percent). This indicates where mineral deposits were evaluated for possible commercial use. Other resources (15.9 percent) are in the occurrence stage of development. This means that a mineral resource has been reported but not evaluated for possible commercial use. Although included in the USGS data, USFS has confirmed that no energy or mineral resource development is occurring on USFS lands in the project area (USFS comments).

Table 3.4-1 Description of Mineral Resources and Mines Within One Mile (1,610 Meters) of the Project ROW

MP	Distance (Meters)	Deposit ID #	MRDS ID	Site Name	State	County	Commodity	Operation Type	Development Status
0.00	873.75	10238130		Colton Plant and Quarry	California	San Bernardino	Sand and Gravel, Construction	Surface	Producer
0.28	1474.40	10188822		Bloomington Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
4.42	604.02	10077248	W024759	Colton Pit and Mill	California	San Bernardino	Sand and Gravel, Construction	Unknown	Past Producer
6.23	719.66	10116137		Lytle Creek Plant	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
6.92	80.62	10140656		San Bernardino Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
7.43	105.52	10164760		San Bernardino Plant	California	San Bernardino	Sand and Gravel, Construction	Processing Plant	Producer
10.79	897.14	10238065		Lytle Creek Pit B	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
17.83	957.78	10117018		Deer Tick Nos. 1-8	California	San Bernardino	Talc-Soapstone, Asbestos, Mica	Surface	Unknown
17.83	957.78	10286638		St. Joseph	California	San Bernardino	Gold, Silver	Unknown	Prospect
19.14	1336.30	10188752		White Queen	California	San Bernardino	Limestone, Dimension	Unknown	Occurrence
22.56	1053.56	10140996		Salamander	California	San Bernardino	Rare Earth Elements	Unknown	Occurrence
33.68	605.22	10285542		Fontana Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
54.71	1463.64	10287054		Oro Grande Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Producer
55.75	836.98	10095226	M020676	Anaco	California	San Bernardino	Zinc, Lead, Silver	Unknown	Occurrence
59.97	1195.56	10165037		Three Buttes Deposit	California	San Bernardino	Clay	Surface	Past Producer
78.91	86.64	10212753		Unnamed Prospect	California	San Bernardino	Pumice	Surface	Prospect
79.54	134.99	10141129		Unnamed Prospect	California	San Bernardino	Calcium	Surface	Prospect
81.08	641.37	10304533	W017768	Calico Quarries and Mill	California	San Bernardino	Stone, Crushed/Broken	Surface	Past Producer
82.66	647.11	10023752	I001181	Potter Bentonite Prospect	California	San Bernardino	Bentonite	Unknown	Occurrence
83.32	136.59	10140919		Unnamed Gravel Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer

Table 3.4-1 Description of Mineral Resources and Mines Within One Mile (1,610 Meters) of the Project ROW

MP	Distance (Meters)	Deposit ID #	MRDS ID	Site Name	State	County	Commodity	Operation Type	Development Status
83.87	1601.43	10188531	W024756	Barstow Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
85.10	756.70	10212799		Unnamed Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
90.31	682.14	10262317		Mojave Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
93.11	202.44	10286169		Tom Woolsey Roofing Granule Plant	California	San Bernardino	Sand and Gravel, Construction	Processing Plant	Unknown
94.00	209.79	10213688		Daggett Borrow Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Producer
94.60	791.92	10023827	I003021	Palm Borate Mine	California	San Bernardino	Boron-Borates	Unknown	Past Producer
95.11	1535.89	10189009	I003021	Palm Borate	California	San Bernardino	Boron-Borates	Underground	Past Producer
95.16	287.87	10165371		Unnamed Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
96.45	205.85	10218517		Unnamed Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
97.51	1363.73	10262593		Unnamed Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
97.67	1391.81	10023748	I001176	Bentonite Mine	California	San Bernardino	Bentonite	Unknown	Past Producer
97.94	1100.34	10286925		Mineola Bentonite/Zeolite Deposit	California	San Bernardino	Bentonite, Zeolites	Surface-Underground	Prospect
98.15	892.21	10189987		Unnamed Prospect	California	San Bernardino	Magnesite	Surface	Prospect
98.64	537.59	10262541	I001176	Bentonite Mine	California	San Bernardino	Bentonite	Surface-Underground	Past Producer
99.31	203.88	10164981	I001172	Unnamed Bentonite Prospect	California	San Bernardino	Bentonite	Surface	Prospect
99.37	461.66	10141112	I001173	Unnamed Bentonite Prospect	California	San Bernardino	Bentonite	Surface	Prospect
101.26	1008.60	10023745	I001172	Unnamed Bentonite Prospect	California	San Bernardino	Bentonite	Unknown	Occurrence
102.19	1551.97	10262648		Harvard Hills	California	San Bernardino	Uranium	Surface	Prospect
102.25	283.62	10287075		Unnamed Prospect	California	San Bernardino	Clay	Surface	Prospect
117.41	628.57	10140916		Dunn Siding Mill	California	San Bernardino	Boron-Borates	Processing Plant	Past Producer
122.42	1435.76	10036205	M024270	Unnamed Deposit	California	San Bernardino	Iron	Unknown	Occurrence
123.09	386.41	10036204	M024269	Undetermined	California	San Bernardino	Iron	Unknown	Occurrence

Table 3.4-1 Description of Mineral Resources and Mines Within One Mile (1,610 Meters) of the Project ROW

MP	Distance (Meters)	Deposit ID #	MRDS ID	Site Name	State	County	Commodity	Operation Type	Development Status
123.09	385.97	10165161	M024269	Unnamed Prospect	California	San Bernardino	Iron	Surface	Prospect
123.15	932.94	10262384	M024271	Meir Group	California	San Bernardino	Iron	Surface	Prospect
123.16	960.08	10095281	M024271	Meir Group	California	San Bernardino	Iron	Unknown	Occurrence
123.27	587.62	10036206	M024272	Cronese	California	San Bernardino	Iron, Titanium, Metal, Copper	Unknown	Past Producer
123.44	327.93	10140733	M024272	Cronese	California	San Bernardino	Iron	Surface	Past Producer
125.18	22.41	10188935		Unnamed Quarry	California	San Bernardino	Stone, Crushed/Broken	Surface	Past Producer
125.63	1473.42	10115578	M024273	Cave Mountain Group	California	San Bernardino	Uranium	Unknown	Occurrence
127.46	405.62	10023734	I001155	Cronese Mud Mine	California	San Bernardino	Bentonite	Unknown	Occurrence
128.31	1109.17	10262112	I001155	Cronese Mud	California	San Bernardino	Clay	Surface	Past Producer
130.10	921.10	10237597		Desert Minerals Company, Dunn Mill	California	San Bernardino	Clay, Talc-Soapstone	Processing Plant	Past Producer
138.35	562.66	10286581	I001085	Pink Lady Prospect	California	San Bernardino	Bentonite	Surface-Underground	Past Producer
138.61	1552.35	10023679	I001085	Pink Lady Mine Soda Mtns.	California	San Bernardino	Bentonite	Unknown	Past Producer
144.16	798.16	10262126	M020671	Aga Mine	California	San Bernardino	Lead, Copper, Gold, Silver	Underground	Prospect
144.33	715.75	10237699		Baker	California	San Bernardino	Limestone, General	Unknown	Occurrence
144.55	571.82	10034001	M020671	Aga Prospect	California	San Bernardino	Silver, Copper, Gold, Lead	Unknown	Occurrence
157.03	982.28	10115932		Silver King Group	California	San Bernardino	Lead, Copper	Surface-Underground	Prospect
157.03	982.28	10189018		Hysters	California	San Bernardino	Gold, Silver	Unknown	Occurrence
157.51	779.76	10116528		Unnamed Prospect	California	San Bernardino	Lead, Gold, Zinc	Underground	Prospect
157.62	1074.50	10188482		Diamond G Group	California	San Bernardino	Gold, Copper	Surface	Prospect
157.62	1171.45	10188539	M023645	Utah Group of Claims	California	San Bernardino	Gold, Silver	Underground	Past Producer
157.62	1074.50	10213161		Last Chance Group	California	San Bernardino	Gold	Surface	Prospect
157.62	1258.12	10262024		Unnamed Prospect	California	San Bernardino	Barium-Barite	Underground	Prospect
157.97	1158.60	10164678		Gold Bug Group	California	San Bernardino	Gold	Underground	Prospect
158.28	696.13	10212835		Friday & Saturday Group	California	San Bernardino	Gold	Unknown	Occurrence
160.97	713.28	10212748	M023648	Coin Stock Group	California	San Bernardino	Gold	Underground	Prospect
161.02	578.25	10207914		Cion Block	California	San Bernardino	Copper, Lead	Unknown	Occurrence
161.38	1268.42	10103381	M023644	Yucca Palm Group	California	San Bernardino	Gold, Iron	Unknown	Past Producer
161.58	1106.84	10036252	M024330	Lost Lead	California	San Bernardino	Gold	Unknown	Past Producer

Table 3.4-1 Description of Mineral Resources and Mines Within One Mile (1,610 Meters) of the Project ROW

MP	Distance (Meters)	Deposit ID #	MRDS ID	Site Name	State	County	Commodity	Operation Type	Development Status
161.58	1106.84	10103382	M023647	Telegraph	California	San Bernardino	Gold, Copper	Unknown	Past Producer
161.61	1285.23	10035747	M023648	Coin Stock Group	California	San Bernardino	Gold	Unknown	Past Producer
161.65	1271.64	10164176	M023647	Telegraph Mine	California	San Bernardino	Gold, Silver	Surface-Underground	Plant
161.83	55.34	10286337		Unnamed Shaft	California	San Bernardino	Gold, Silver	Underground	Prospect
161.88	754.91	10035746	M023646	Chesterfield & Old Gold Group	California	San Bernardino	Gold, Copper	Unknown	Past Producer
162.15	359.27	10116830		Gods Mine Prospect	California	San Bernardino	Gold, Silver	Surface	Prospect
162.63	226.74	10188451	M023643	Prince Group	California	San Bernardino	Gold	Unknown	Occurrence
162.97	577.46	10035744	M023643	Prince Group	California	San Bernardino	Gold	Unknown	Past Producer
163.03	531.84	10286654		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
163.07	45.56	10212809		Gold Bar Group	California	San Bernardino	Gold	Underground	Prospect
163.36	332.01	10262701		Yucca Grove Mine	California	San Bernardino	Talc-Soapstone	Unknown	Prospect
163.47	33.30	10213346		Unnamed Mine Shaft	California	San Bernardino	Copper	Underground	Prospect
164.06	1514.80	10262143		Calmosil Mine	California	San Bernardino	Talc-Soapstone	Underground	Past Producer
165.15	769.33	10237598		Contact Claim	California	San Bernardino	Gold	Underground	Prospect
170.93	213.55	10262669		Mercury	California	San Bernardino	Boron-Borates	Surface	Prospect
174.89	27.94	10165349		Unnamed Gravel Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
174.89	1336.45	10237847		Mohawk Hill West	California	San Bernardino	Zinc, Lead, Copper, Gold	Surface-Underground	Prospect
175.24	1171.30	10213076	M020762	Mohawk Mine	California	San Bernardino	Lead, Copper, Gold, Silver, Zinc	Underground	Past Producer
175.40	1467.00	10116612		Wilshire Extension	California	San Bernardino	Zinc, Lead, Copper	Underground	Past Producer
175.47	105.08	10262737		Unnamed Gravel Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
175.53	1244.61	10116734		Alta	California	San Bernardino	Zinc, Silver, Tungsten, Copper, Lead	Underground	Past Producer
175.54	1132.11	10189790		Alta No. 2	California	San Bernardino	Zinc, Copper, Lead	Underground	Past Producer
175.66	728.87	10188766	M020796	Yucca Queen Mine	California	San Bernardino	Lead, Copper, Gold, Silver, Zinc	Underground	Past Producer
175.70	1201.01	10189446		Stifersnite	California	San Bernardino	Zinc, Copper, Lead	Underground	Past Producer
175.72	1348.52	10034068	M020762	Mohawk	California	San Bernardino	Lead, Silver, Zinc, Copper, Gold	Unknown	Past Producer

Table 3.4-1 Description of Mineral Resources and Mines Within One Mile (1,610 Meters) of the Project ROW

MP	Distance (Meters)	Deposit ID #	MRDS ID	Site Name	State	County	Commodity	Operation Type	Development Status
175.78	857.69	10189549		Mohawk Mine Annex	California	San Bernardino	Zinc, Silver, Antimony, Copper, Lead	Underground	Past Producer
175.81	1174.49	10304506		Mohawk Mine Annex	California	San Bernardino	Zinc, Copper, Gold, Lead	Underground	Past Producer
175.91	786.04	10141012		Mohawk Mine Annex	California	San Bernardino	Zinc, Copper, Gold, Lead, Silver	Underground	Past Producer
175.97	1010.20	10117007		Mohawk Mine Annex	California	San Bernardino	Zinc, Antimony, Copper, Lead, Silver	Underground	Prospect
175.98	390.70	10140792		Clark Mtn. Station	California	San Bernardino	Lead, Copper, Silver, Zinc, Gold	Underground	Past Producer
176.05	343.04	10102998	M020796	Yucca Queen	California	San Bernardino	Lead, Silver, Copper, Gold	Unknown	Past Producer
176.06	766.57	10134902		Mohawk Mine Annex	California	San Bernardino	Zinc, Lead, Copper, Gold	Underground	Past Producer
176.17	1004.82	10188584		Budget	California	San Bernardino	Copper, Silver, Gold, Lead	Underground	Past Producer
176.23	965.85	10189239	M020793	Wilshire	California	San Bernardino	Lead, Zinc, Copper, Silver	Unknown	Prospect
176.34	1161.75	10237603		Mohawk Mine Annex Extension	California	San Bernardino	Copper	Underground	Past Producer
177.04	120.90	10286530	D000041	Henry	California	San Bernardino	Lead, Antimony, Copper, Gold, Silver	Underground	Past Producer
177.83	1599.57	10237571		Lower Rathburn	California	San Bernardino	Zinc, Copper, Gold, Lead	Underground	Prospect
177.83	712.41	10110515	W017777	Ivanpah-Clark Mountain	California	San Bernardino	Silver	Unknown	Past Producer
178.20	632.88	10286459		Unnamed Limestone Quarry	California	San Bernardino	Stone, Crushed/Broken	Surface	Past Producer
178.93	1206.52	10262380		Mountain Pass Antimony	California	San Bernardino	Antimony	Unknown	Past Producer
179.53	1382.38	10305145		Candy & Cake No. 3	California	San Bernardino	Rare Earth Elements	Surface	Prospect
179.65	1269.76	10184283		Alice Prospect	California	San Bernardino	Rare Earth Elements	Surface	Prospect
179.91	513.44	10212814	M023680	Mountain Pass Mine and Mill	California	San Bernardino	Rare Earth Elements	Surface	Producer
179.93	581.16	10286351	M023680	Sulfide Queen Mine	California	San Bernardino	Gold, Lead, Silver	Underground	Past Producer
179.98	520.70	10035777	M023680	Sulfide Queen	California	San Bernardino	Gold, Silver, Lead	Unknown	Past Producer
180.05	1601.99	10188860	M020724	G. A. Fayle	California	San Bernardino	Lead, Copper, Gold, Silver	Unknown	Past Producer
180.07	1517.65	10109415	M020724	G. A. Fayle	California	San Bernardino	Lead, Silver, Gold, Copper	Unknown	Past Producer
180.19	1305.38	10165480		Unnamed Prospect	California	San Bernardino	Gold, Silver	Surface	Prospect
180.28	1400.88	10165522		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
180.50	933.14	10237465		Bullsnake Prospect	California	San Bernardino	Rare Earth Elements	Surface	Prospect
180.54	951.10	10141124		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
180.56	1383.28	10189772		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect

Table 3.4-1 Description of Mineral Resources and Mines Within One Mile (1,610 Meters) of the Project ROW

MP	Distance (Meters)	Deposit ID #	MRDS ID	Site Name	State	County	Commodity	Operation Type	Development Status
180.58	1193.96	10237521		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
180.70	1378.03	10164966		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
180.72	168.23	10237919		Reynolds Robbins Prospect A	California	San Bernardino	Rare Earth Elements	Surface	Prospect
180.72	1532.75	10213723		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
180.77	1375.66	10213512		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
180.78	631.63	10262006		Reynolds Robbins Prospect B	California	San Bernardino	Rare Earth Elements	Surface	Prospect
180.86	784.33	10238258		Reynolds Robbins Prospect C	California	San Bernardino	Rare Earth Elements	Surface	Prospect
180.87	972.34	10286735		Reynolds Robbins Prospect D	California	San Bernardino	Rare Earth Elements	Surface	Prospect
180.89	1523.86	10262235		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
180.90	1422.66	10165023		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
180.90	1300.65	10213788		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
181.00	469.30	10034016	M020691	Blue Moon	California	San Bernardino	Lead, Copper, Silver, Gold	Unknown	Past Producer
181.11	1138.64	10214075		Simon-Ray Mine	California	San Bernardino	Rare Earth Elements	Underground	Prospect
181.14	525.66	10164107		Horseshoe Group	California	San Bernardino	Rare Earth Elements	Unknown	Occurrence
181.17	216.60	10213233		Rathburn Group	California	San Bernardino	Rare Earth Elements	Unknown	Prospect
181.21	148.92	10286913	M020691	Blue Moon	California	San Bernardino	Silver, Copper, Gold, Lead	Unknown	Past Producer
181.52	1321.50	10034094	M020793	Wilshire	California	San Bernardino	Lead, Zinc, Silver, Copper, Gold	Unknown	Past Producer
181.63	1557.68	10213532		Horned Toad	California	San Bernardino	Copper	Surface-Underground	Prospect
181.70	1290.25	10165477		Blue Goose	California	San Bernardino	Barium-Barite	Surface	Prospect
181.78	117.08	10034028	M020706	Carbonate King Zinc Mine	California	San Bernardino	Zinc, Lead, Silver, Gold, Iron	Unknown	Past Producer
182.44	1334.67	10189770		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
182.83	1555.77	10164945		Blackjack Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
182.83	145.72	10237723		Black Olamonda	California	San Bernardino	Barium-Barite	Surface	Prospect
182.83	163.80	10238246		Riprap Quarry	California	San Bernardino	Stone, Crushed/Broken	Surface	Producer
182.95	73.90	10238179		Unnamed Prospect	California	San Bernardino	Barium-Barite	Surface	Prospect
183.63	343.86	10262688		Unnamed Adit	California	San Bernardino	Barium-Barite	Underground	Prospect
184.72	67.05	10165420		Wheaton Springs Borrow Pit	California	San Bernardino	Sand and Gravel, Construction	Surface	Past Producer
184.72	995.17	10140761		Unnamed Prospect	California	San Bernardino	Copper	Surface	Prospect
201.31	64.14	10197675		Stateline Pit	Nevada	Clark	Sand and Gravel, Construction	Surface	Plant
208.81	760.73	10246676		Jean Quarry	Nevada	Clark	Limestone, General	Surface	Past Producer

Table 3.4-1 Description of Mineral Resources and Mines Within One Mile (1,610 Meters) of the Project ROW

MP	Distance (Meters)	Deposit ID #	MRDS ID	Site Name	State	County	Commodity	Operation Type	Development Status
210.54	402.55	10221653		Jean Deposits	Nevada	Clark	Silica	Surface	Past Producer
210.65	1469.22	10124982		Jean-Sloan Area Uranium Loc. 17 and 18	Nevada	Clark	Uranium	Surface	Occurrence
212.01	1053.71	10221661		Willabelle Claim	Nevada	Clark	Uranium	Surface	Occurrence
212.02	570.43	10174182		Jean Carnotite Prospect	Nevada	Clark	Uranium	Surface	Occurrence
212.07	17.55	10124742		Jean-Sloan Area Uranium Locality 16	Nevada	Clark	Uranium	Surface	Occurrence
214.26	446.48	10221296		Nevada Pacific Minerals Co. Deposit	Nevada	Clark	Silica	Surface	Past Producer
214.42	240.11	10294441		Jean-Sloan Area Uranium Locality 15	Nevada	Clark	Uranium	Surface	Occurrence
214.50	872.20	10246721		Jean Pit	Nevada	Clark	Sand and Gravel, Construction	Surface	Producer
216.79	113.20	10149239		Jean-Sloan Area Uranium Locality 14	Nevada	Clark	Uranium	Surface	Occurrence
217.78	631.14	10149490		Jean-Sloan Uranium Localities 9-13	Nevada	Clark	Uranium	Surface	Occurrence
218.98	972.24	10197363		Jean-Sloan Area Uranium Locality 8	Nevada	Clark	Uranium	Surface	Occurrence
219.18	1353.53	10221965		Jean-Sloan Area Uranium Locality 7	Nevada	Clark	Uranium	Surface	Occurrence

Source: USGS 2005

Ten active mining sites and six processing plants were identified within one mile of the ROW (Table 3.4-1). The commodities produced or processed near the ROW include gold and silver; sand and gravel; boron; clay and talc-soapstone; rare earth elements; lead; copper; zinc; and stone. One plant, in Nevada, is located only 64.1 meters from the ROW near milepost 201 (Figure 3.4-1).

Almost half of mineral resources along the ROW are associated with surface mines (48.2 percent). About 19 percent must be accessed underground and four percent accessed by some combination of surface and underground mining. Data was not available regarding operation type or access means for greater than 25 percent of the mineral resources identified. Of the active mines currently in operation, only one requires underground access to minerals, though data was not available for several locations.

Gold, copper, silver, and lead have each been prospected, produced, or processed at more than 30 locations within one mile of the ROW. At present, silver is being produced or processed at five locations, gold at four locations, and copper and lead at three. Sand, gravel, and stone are currently being produced at seven locations and zinc, rare earth elements, clay, boron, and talc at a few locations near the ROW. Barium-barite has been prospected at 18 locations within one mile of the ROW, and there are 11 locations identified with an occurrence of uranium.

The Proposed pipeline route would go directly through the property of the active Molycorp Minerals, LLC rare earths mine at Mountain Pass, for a distance of approximately three miles from MP-178 to MP-181. In this area, the Proposed route follows the route for the existing pipelines, which were constructed through the active mine and millsite. The pipelines (existing and proposed) pass through the property in the southern portion, as follows:

- Below the base of the Molycorp waste rock piles on the western portion of the property;
- Between the main entrance and some administrative buildings (engineering building and training center) on the south side of the property and the pit, millsite, tailings, and main administration building on the north side of the property;
- Through an area of former waste disposal ponds; and
- Through an undeveloped portion of the facility until it exits on the east side of the property.

In the southeastern portion of the property, the Proposed route passes near the locations of several active and former ponds.

3.4.1.1 Mineral Resource Zones

Under the California State Surface Mining and Reclamation Act of 1975, Mineral Resource Zones (MRZs) are defined by the State Geologist to classify land according its level of significance as a mineral resource. MRZs are used to help identify and protect state mineral resources from urban expansion or other irreversible land uses that might preclude mineral extraction.

The ROW passes within 500 meters of multiple sites that have been prospected for copper, gold, rare earth elements, silver, and other minerals. Additionally, MRZs may have been established along the pipeline route based on the presence or absence of significant gravel deposits, crushed rock, or other products used in cement production. The Cajon Pass and Lytle

Creek areas should have significant sand and gravel resources under MRZ-3a and 3b. California MRZ definitions (State Mining and Geology Board [SMGB] 2007) are presented below:

- MRZ-1: Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. This zone is applied where well developed lines of reasoning, based on economic-geologic principles and adequate data, indicate that the likelihood for occurrence of significant mineral deposits is nil or slight.
- MRZ-2a: Areas underlain by mineral deposits where geologic data show that significant measured or indicated resources are present. As shown on the diagram of the California Mineral Land Classification System, MRZ-2 is divided on the basis of both degree of knowledge and economic factors. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits. A typical MRZ-2a area would include an operating mine, or an area where extensive sampling indicates the presence of a significant mineral deposit.
- MRZ-2b: Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain discovered deposits that are either inferred reserves or deposits that are presently sub-economic as determined by limited sample analysis, exposure, and past mining history. Further exploration work and/or changes in technology or economics could result in upgrading areas classified MRZ-2b to MRZ-2a. A typical MRZ-2b area would include sites where there are good geologic reasons to believe that an extension of an operating mine exists or where there is an exposure of mineralization of economic importance.
- MRZ-3a: Areas containing known mineral deposits that may qualify as mineral resources. Further exploration work within these areas could result in the reclassification of specific localities into the MRZ-2a or MRZ-2b categories. MRZ-3a areas are considered to have a moderate potential for the discovery of economic mineral deposits. As shown on the diagram of the California Mineral Land Classification System, MRZ-3 is divided on the basis of knowledge of economic characteristics of the resources. An example of a MRZ-3a area would be where there is direct evidence of a surface exposure of a geologic unit, such as a limestone body, known to be or to contain a mineral resource elsewhere but has not been sampled or tested at the current location.
- MRZ-3b: Areas containing inferred mineral deposits that may qualify as mineral resources. Land classified MRZ-3b represents areas in geologic settings which appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration work could result in the reclassification of all or part of these areas into the MRZ-3a category or specific localities into the MRZ-2a or MRZ-2b categories. MRZ-3b is applied to land where geologic evidence leads to the conclusion that it is plausible that economic mineral deposits are present. An example of a MRZ-3b area would be where there is indirect evidence such as a geophysical or geochemical anomaly along a permissible structure which indicates the possible presence of a mineral deposit or that an ore-forming process was operative.
- MRZ-4: Areas where geologic information does not rule out either the presence or absence of mineral resources. The distinction between the MRZ-1 and MRZ-4

categories is important for land-use considerations. It must be emphasized that MRZ-4 classification does not imply that there is little likelihood for the presence of mineral resources, but rather there is a lack of knowledge regarding mineral occurrence. Further exploration work could well result in the reclassification of land in MRZ-4 areas to MRZ-3 or MRZ-2 categories.

3.4.1.2 Potential Mining Hazards Along the ROW

Mineral producers and past producers located in or near the ROW should be evaluated to determine if subsidence, slumping, landslides, or other ground failures may be likely due to past or current mining activities or construction of the Project. Former mill sites near MP-89 were reported by the California Department of Toxic Substance Control (CADTSC) (CADTSC 2009). Refer to Section 3.2 (Topography, Geology, and Geologic Hazards) and Section 3.3 (Soils) for further information about potential impacts and mitigation measures associated with subsidence and other ground failure risks.

Mining hazards in the pipeline ROW could also present a potential health threat due to the presence of mining-related contaminants, such as heavy metals, which may be present in waste rock or tailings. The former millsite area at MP-89 has very fine soils that may be associated with soils from the former mining operation. In addition, operations on the Molycorp Minerals, LLC property are known to have caused contamination that is currently being addressed under active investigation and remediation programs under the oversight of the Lahontan Regional Water Quality Control Board. Because these hazards would be associated with potential release of or exposure to mining-related contamination, they are addressed in Section 3.17 (Public Safety and Hazardous Materials).

Access to active mines and processing sites presents potential hazards during pipeline construction. Trucks and heavy equipment use access roads that may cross the proposed pipeline route ROW. Thus, pipeline construction would need to address potential access and safety hazards associated with vehicular traffic crossing the pipeline route during construction.

3.4.2 Applicable Regulations, Plans, and Policies

The Project would comply with all applicable laws, ordinances, regulations, and standards related to energy and mineral resources during and following construction of the Project. The California State Surface Mining and Reclamation Act of 1975 guides surface mining reclamation and the identification of mineral resources of regional and statewide significance. The act has been administered by the California Department of Conservation, Office of Mine Reclamation since 1991. The Federal Surface Mining Control and Reclamation Act of 1977 also applies to the Project. At a local level, the County of San Bernardino General Plan (URS Corporation 2007, Conservation Element) and Clark County Comprehensive Plan (2004, Conservation Element: Land Resources, Geology) apply to the Project.

3.4.3 Environmental Consequences

3.4.3.1 Requirements and Focus of NEPA versus CEQA Analyses

Potential Impacts to be Evaluated Under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential impacts to energy and mineral resources have been identified for evaluation:

- The potential for the Proposed Project to interfere with the availability of a mineral or energy resource (addressed as ENE-1 below).

CEQA Significance Criteria

Under CEQA, the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to energy and minerals, the relevant CEQA significance criteria provided in Section XI of the checklist are based on whether the proposed project would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state (addressed as ENE-1 below); or
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan (addressed as ENE-2 below).

3.4.3.2 Impact Analysis

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under NEPA and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Mitigation measures (MMs) are compiled in Section 3.4.4, Summary of Mitigation.

Proposed Project/Proposed Action (Alternative 1)

Impact ENE-1: Access to mineral or energy resources.

During pipeline construction, access to some prospected, production, or processing sites for mineral resources may be temporarily restricted due to open trenching or if there were to be emergency operations. Construction is not expected to limit the development of new production or processing sites for mineral resources. Although the presence of buried pipelines can limit access to mineral resources it passes through, such as sand and gravel resources, there are ample resources within the project area such that the Proposed Project would not interfere with their availability. Also, because the Proposed Route is adjacent to the existing pipeline route throughout most of its length, any potential impact on access to local resources has already occurred. Access would not be restricted to energy resources in the Project area.

Within the Molycorp Minerals, LLC property, the construction and operation of the Proposed Project is not expected to have any impact on Molycorp's operations. Most activities conducted by Molycorp, including all mining and mineral processing, occur to the north of the proposed pipeline route. Although the Proposed Route passes near the West Overburden pile and some active stormwater management ponds, construction and operation is not expected to interfere with the operation of these facilities. Expansion activities currently taking place at the mine are mostly located in the northern portion of the property, and construction and operation of the proposed pipeline will not interfere with these planned expansions.

The Proposed Project would have no direct or indirect adverse impacts on access to mineral or energy resources. Potential impacts under CEQA would be temporary and less than significant.

Impact ENE-2: Loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Although it will pass through designated MRZs, the Proposed Project would not result in loss of availability of minerals in these areas. The Proposed Project would have no direct or indirect adverse impacts on these MRZs, or any other resource designated in a local, general, or other land use plan. There would be no significant impacts under CEQA.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to energy and mineral resources associated with the seven route variations are described below:

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to energy or mineral resources. Neither segment crosses within the vicinity of any identified mineral or energy resources. Because both routes occur within an urban area, development of mineral resources on either segment is unlikely. Therefore, the potential energy and mineral resource impacts associated with the Bloomington route would be the same as those identified for the Proposed Project.

Rialto Alternative

The Rialto Alternative route variation, and the segment of the Proposed Project that it would replace within the City of Rialto, do not have any differences with respect to energy and mineral resources. Neither segment crosses within the vicinity of any identified mineral or energy resources. Because both routes occur within an urban area, development of mineral resources on either segment is unlikely. Therefore, the potential energy and mineral resource impacts associated with the Rialto route would be the same as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route, and the segment of the Proposed Project that it would replace through the unnamed riparian area, do not have any differences with respect to energy and mineral resources. Neither segment crosses within the vicinity of any identified mineral or energy resources. Because the Proposed route passes through a riparian area, and the Wagon Train Road route would use the HDD construction method to cross under Interstate 15, development of mineral resources on either segment is unlikely. Therefore, the potential energy and mineral resource impacts associated with the Wagon Train Road route would be the same as those identified for the Proposed Project.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa route would increase the length of the pipeline by approximately 0.8 miles. However, neither segment crosses within the vicinity of any identified mineral or energy resources. Because both routes occur within a residential area, development of mineral resources on either segment is unlikely. Therefore, the potential energy and mineral resource impacts associated with the Phelan Road/Baldy Mesa route would be the same as those identified for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, do not have any differences with respect to energy and mineral resources. Neither segment crosses within the vicinity of any identified mineral or energy resources. Although both segments occur in a rural area in which development of mineral resources is possible, the routes are in close proximity to each other, and neither can be identified as being a more likely location for development. Therefore, the potential energy and mineral resource impacts associated with the Zzyzx route would be the same as those identified for the Proposed Project.

Baker Alternative

The Baker Alternative route would shorten the length of the pipeline by approximately 0.6 mile. However, neither segment crosses within the vicinity of any identified mineral or energy resources. Because the Proposed Route occurs in an undeveloped area, and the alternative route passes through the town of Baker, any potential mineral or energy development would be more likely on the Proposed Route than the alternative route. However, development of mineral resources on either segment is unlikely. Overall, the potential for interference with mineral or energy development (ENE-1) would be slightly lower for the alternative route. However, the potential for this impact on either route is considered to be low.

Silver Lake Pump Station Alternative

The alternative and Proposed Action locations for the proposed Silver Lake Pump Station do not have any differences with respect to energy or mineral resources. Because the Proposed location occurs adjacent to a switchyard and school, and the alternative location occurs in an undeveloped area, any potential mineral or energy development would be more likely on the alternative location than the Proposed location. However, development of mineral resources on either location is unlikely. Overall, the potential for interference with mineral or energy development (ENE-1) would be slightly higher for the alternative location. However, the potential for this impact at either location is considered to be low.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation, and the segment of the Proposed Project that it would replace along Valley View Boulevard and Hacienda Avenue, do not have any differences with respect to energy and mineral resources. Neither segment crosses within the vicinity of any identified mineral or energy resources. Because both routes occur within an urban area, development of mineral resources on either segment is unlikely. Therefore, the potential energy and mineral resource impacts associated with the Sunset Lateral route would be the same as those identified for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to energy or mineral resources.

Summary

Overall, Alternative 2 would have no potential for impacts under either ENE-1 or ENE-2. No mitigation measures are required to avoid or reduce impacts, or to reduce the level of impacts under CEQA to less than significant.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative location, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. With respect to energy and mineral resources, neither Alternative 1 nor Alternative 2 would have the potential for impacts under either ENE-1 or ENE-2. Therefore, Alternative 3 also would not have any potential for impacts. No mitigation measures are required to avoid or reduce impacts, or to reduce the level of impacts under CEQA to less than significant.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure would be installed. No ground-disturbing activities would take place and potential impacts to energy and mineral resources resulting from current activities on the existing pipelines would remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems would be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines would remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, CA to Las Vegas, NV. No energy or mineral resource impacts are associated with the current operations.

For the purposes of CEQA, no significant impacts to energy and mineral resources would result if the No Project Alternative is adopted.

3.4.3.3 Summary of Alternatives Comparison

There would be no impacts to energy or mineral resources associated with any of the alternatives.

Table 3.4-2 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
No Impacts	No impacts.	No impacts.	No impacts.

3.4.4 Summary of Mitigation

The Proposed Project and alternatives would not result in adverse impacts to energy and mineral resources. No mitigation would be required.

References

California Department of Conservation. 1999. *Natural Oil and Gas Seeps in California.* http://geomaps.wr.usgs.gov/seeps/index.html. Accessed April 20, 2009.

California Department of Toxic Substances Control (CADTSC). November 10, 2009. Imminent and Substantial Endangerment Determination Report, 1100 acres, Calico Tailings Area, San Bernardino County.

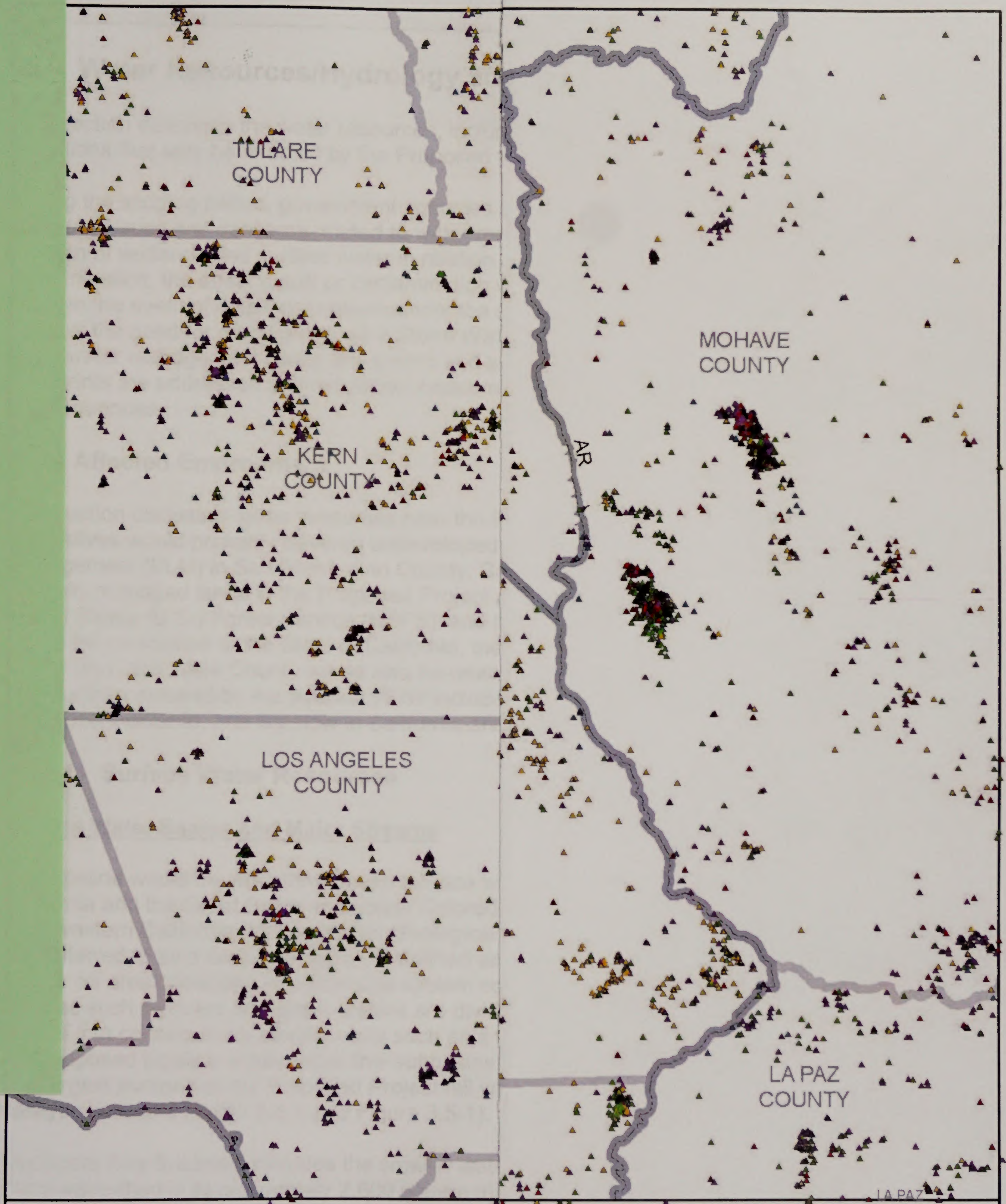
Clark County Comprehensive Plan. 2004. Conservation Element. http://www.clarkcountynv.gov/Depts/comprehensive_planning/advanced_planning/Pages/ComprehensivePlan.aspx. Accessed April 20, 2009.

Nevada Bureau of Mines and Geology. 2007. *Petroleum Data Map of Nevada.* http://www.nbmg.unr.edu/dox/m162plate.pdf. Accessed April 20, 2009.

State Mining and Geology Board (SMGB). 2007. *Guidelines for Classification and Designation of Mineral Lands.* California. http://www.conservation.ca.gov/smgb/Guidelines/Pages/guidelines.aspx. Accessed April 21, 2009.

URS Corporation. 2007. San Bernardino County General Plan Conservation Element.

United States Geological Survey (USGS). 2005. *Mineral resources data system.* http://tin.er.usgs.gov/mrds. Accessed March 23, 2009.



4-1: OVERVIEW OF MINERAL RESOURCES
THE VICINITY OF THE PROJECT ROW

ct components are approximate
been removed due to route change

SOURCES:
ESRI 2008, USGS 2005

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June 28, 2011

3.5 Water Resources/Hydrology and Water Quality

This section describes the water resources, including hydrology and existing water quality conditions that may be affected by the Proposed Project, and its alternatives.

During the scoping period, government agencies and members of the public identified the following issues and concerns related to water resources, hydrology, and water quality: the location of wetlands and surface water in relation to the project area; the potential for spills or contamination, the effect a spill or contamination would have on water quality, and the cleanup plans in the event of a spill or contamination; the sensitivity of water resources in an arid climate; the need for a comprehensive Storm Water Pollution Prevention Plan; the need for wastewater management plans; and permit and agency consultation requirements. These comments are addressed and mitigation measures proposed in Section 3.5.3, Environmental Consequences.

3.5.1 Affected Environment

This section discusses water resources near the Proposed Project area. The pipeline route and alternatives would primarily traverse undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States (U.S.) Forest Service (USFS), and the U.S. Department of Defense (DoD). Lands under the jurisdiction of the State of California, the State of Nevada; the County of San Bernardino, and Clark County would also be crossed by the proposed pipeline. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

3.5.1.1 Surface Water Resources

Surface Water Basins and Major Streams

The pipeline would traverse three major surface water basins: the California Basin in southern California and the Great Basin and Lower Colorado Basin in southern Nevada and southwestern California (United States Geological Survey [USGS] 2008a; Table 3.5-1). A Basin, also referred to as a drainage region, is defined as a geographic area drained by a single major river or an area consisting of a drainage system comprised of several larger surface water features such as rivers and lakes. Basins are divided into subbasins. Subbasins can be further divided into consecutively smaller units such as a watershed, subwatersheds, and catchments. The proposed pipeline would cross five subbasins within California and Nevada (Table 3.5-1). The largest portions of the Proposed Project fall within the Mojave and Ivanpah-Pahrump Valleys subbasins (Table 3.5-1 and Figure 3.5-1).

The Santa Ana Subbasin includes the smaller watersheds of Cajon Wash and Lytle Creek. The entire watershed is approximately 2,800 square miles (sq. mi.), and is the largest stream system in southern California (USGS 2008b, 2008c). The Santa Ana River is the main waterbody draining this subbasin.

The Mojave Subbasin is approximately 3,400 sq. mi. and is the largest drainage system in the Mojave Desert (USGS 2004). The Mojave River is the main waterbody draining the subbasin.

Table 3.5-1 Basins and Subbasins Traversed by the Proposed Pipeline

State	Basin	Subbasin (Hydrologic Unit Code)	Major River/Stream Draining Subbasin	Approximate Milepost (MP) Range
California	California Basin	Santa Ana (18070203)	Cajon Wash and Lytle Creek	0-29
	California Basin	Mojave (18090208)	Mojave River	29-163
	California Basin	Death Valley-Lower Amargosa (18090203)	Amargosa River	163-179
California and Nevada	Great Basin	Ivanpah-Pahrump Valleys (16060015)	None – ephemeral springs and streams	179-216
Nevada	Lower Colorado	Las Vegas Wash (15010015)	Las Vegas Wash	216-233

The Las Vegas Wash Subbasin is approximately 1,850 sq. mi. and has experienced several 100-year flood events over the past decades (USGS 2008a, Las Vegas Valley Coordination Committee 2008). A 100-year flood is the level of flood water expected to be equaled or exceeded every 100 years on average, or more accurately, a flood that has a 1 percent chance of being equaled or exceeded in any single year. The Las Vegas Wash is described as an 'urban' river that is comprised of a complex of wetlands and sloughs draining the watershed (Las Vegas Valley Coordination Committee 2008).

Waterbody Crossings

Examination of aerial photographs and USGS topographic maps overlaid by the Proposed Project shows that the proposed pipeline would cross three perennial rivers, one aqueduct, three dry lakes, and about 136 intermittent drainage features (such as ephemeral washes, ditches, and creeks/streams). Major waterbodies crossed by the pipeline are provided in Table 3.5-2 and shown on Figures 3.5-2 a to d. Existing drainage features at proposed facility sites, including the Silver Lake Pump Station and laterals to McCarran, are restricted to intermittent and ephemeral washes. There are no perennial systems that the pipeline would cross within the State of Nevada. Much of the Proposed Project lies within valleys bordered by various mountain ranges, including the San Gabriel Mountains, San Bernardino Mountains, Oro Grande Canyon, Calico Mountains, Soda Mountain, Clark Mountains, Ivanpah Mountains, Spring Mountains, and the McCullough Range. Alluvial outwash fans at the base of these mountains represent additional drainage features within the Proposed Project area. During seasonal precipitation events, these fans become washes by which sedimentary deposits are carried out by the widening action of fast-flowing water.

Three major floodplains would be crossed by the pipeline. These major floodplains include Cajon Wash and Lytle Creek (included in the greater Santa Ana River floodplain), Mojave River, and Las Vegas Wash.

Current activities occurring in the Santa Ana River floodplain that could modify the flood buffer capacity of the system are human growth and habitat loss and fragmentation. Lytle Creek watershed is currently rated to provide flood protection for the 25-year flood. The greater Santa Ana subbasin is considered to be the nation's biggest flood threat west of the Mississippi (Stellar Blue Team 2006).

Table 3.5-2 List of Major Waterbodies Crossed by the Proposed Pipeline Route

State/County	Waterbody Name	Waterbody Type	Approximate Width at Crossing (feet)[1]	State Water Quality Classification	Milepost (MP)	Proposed Pipeline Crossing Method
California/San Bernardino	Cajon Wash	Perennial	Ranges 12-834	Beneficial uses established	Multiple crossings between 12.4-26.0	Open Cut proposed. HDD considered in Alternative 2
California/San Bernardino	California Aqueduct	Perennial, controlled	125	Impaired	36.3-37.5	Horizontal directional drilling (HDD)
California/San Bernardino	Lytle Creek	Perennial, upper reaches; Intermittent, lower reaches where Proposed Project is located	Ranges 12-2,366	Beneficial uses established; Impaired	Multiple crossings between 10.3-13.0	Open cut
California/San Bernardino	Mojave River	Classified as perennial, although most portions are intermittent	Ranges 6-1,435	Beneficial uses established	Multiple crossings between 53.5-55.3, 86.9-89.2	Open cut
California/San Bernardino	Mojave River unnamed large tributary near Barstow	Intermittent/ ephemeral	Ranges 100-750	None	Multiple crossings between 65.9-110.8	Open cut
California/San Bernardino	Mojave River unnamed large tributary near Manix	Intermittent/ ephemeral	Ranges 150-250	None	Multiple crossings between 113.9-115.2	Open cut
California/San Bernardino	Large unnamed wash in Cronese Valley	Ephemeral	Ranges 110-200	None	Multiple crossings between 126.4-127.2	Open cut
California/San Bernardino	Large unnamed wash near Zyzzx	Ephemeral	175	None	Multiple crossings between 138.9-139.9	Open cut
California/San Bernardino	Soda Lake	Dry Lake	1,000	None	140-143.0	Open cut
California/San Bernardino	Wheaton Wash	Ephemeral	Ranges 105-200	None	185.4-185.7	Open cut
California/San Bernardino, Nevada/Clark	Ivanpah Lake	Dry lake	14,211	None: Narrative standards only	190.5-193.0	Open cut
Nevada/Clark	Roach Lake	Dry lake	16,658	None: Narrative standards only	198.3-201.0	Open cut

[1] Width for some systems (Cajon Wash, Lytle Creek, Mojave River) includes crossing width of the floodplain, due to the inherent braided nature of these stream systems.

Historic and current anthropogenic impacts in the Mojave River floodplain include mining, highway development, growing population, off-road vehicle use, grazing pressure, and groundwater over-drafting (USGS 2004). The floodplain is fairly denuded of vegetation, and is at risk from invasion of exotic plant species. Extensive flood flows only occur seasonally during unusually high rainfall periods (County of San Bernardino 2006).

While the pipeline would not cross Las Vegas Wash, it would lie within the boundaries of the Wash's floodplain. The floodplain has been significantly impacted by human activities and is much reduced in size from historic records. The floodplain has experienced erosion and head-cutting as a result of flash floods and increased wastewater discharge to the wash from the ever growing populations of Las Vegas (Las Vegas Valley Coordination Committee 2008).

There are several areas where the proposed pipeline would cross high-risk flood hazard zones as designated by Federal Emergency Management Agency (FEMA; Table 3.5-3). The pipeline does not cross any FEMA designated flood zones on USFS lands, between MPs 17.5 and 29.75 (San Bernardino National Forest).

Table 3.5-3 High-Risk FEMA Flood Zones Traversed by the Proposed Pipeline

Approximate MP	Flood Zone Designation[1,2]	Proposed Project Structure	General Floodplain Area
10.6-13.5	A	Pipeline	Lytle Creek/Cajon Wash
15-17	A	Pipeline	Lytle Creek/Cajon Wash
47.6 (left side of pipeline only)	AE	Pipeline	Mojave River
53.5-54.5	A	Pipeline	Mojave River
75.3-76.5	A	Staging Area/Access Road	Mojave River
93.8-94.3	A	Pipeline	Mojave River
145-145.5	A	Silver Lake Pump Station	Soda Lake
198.4-202	A	Pipeline	Roach Lake
203-203.2	A	Pipeline	Roach Lake
204.4-204.5	A	Pipeline	Roach Lake
209.1-209.3	A	Pipeline	Roach Lake
210-210.4	A	Pipeline	Roach Lake
226.5-226.6	A	Pipeline	Las Vegas Wash
229.7-230.3	A	Pipeline	Las Vegas Wash
232.8-233.3	A	Portions of Russell Alt Junction Lateral	Las Vegas Wash

[1] 'A' designation as defined by FEMA: High risk area; Areas with a 1% chance of flooding and a 26% chance of flooding over the life of a 30- year mortgage.

[2] 'AE designation as defined by FEMA: The base floodplain where base flood elevations are provided.

Source: FEMA 2009 National Flood Hazard Layer.

Water Quality for Major Waterbodies

It is necessary to understand the general chemical and physical characteristics of each of the major waterbodies that would be crossed by the pipeline in order to recognize, avoid and reduce potential water quality impacts to those systems. In addition, it is important to identify impaired or potentially impaired waters crossed by the proposed pipeline. Section 303(d) of the Clean Water Act (CWA) states that each state must identify all waters of the state that are impaired (i.e., contain pollutants that adversely affect the designated use of the water). The 303(d) lists for California and Nevada were reviewed with respect to Proposed Project waterbody crossings (Table 3.5-2).

Cajon Wash is a perennial creek located between the San Gabriel and San Bernardino Mountains. Cajon Wash flows in a southeastern direction from the headwaters in Cajon Canyon down to Rialto, California. Cajon Wash ends at its confluence with Lytle Creek just north of Rialto. The drainage system continues on from the confluence as Lytle Creek. The wash has braided bed morphology typical of alluvial channels; riparian vegetation that is highly adapted to flooding and fire cycles; and bed material that is predominantly comprised of coarse sand (URS Corporation [URS] 2006). The pipeline would cross the wash at one location (from the west side to the east side), and would cross tributaries entering the wash from the east at approximately eleven locations. Monthly mean discharge statistics show that the wash receives the most water from precipitation and runoff during the winter and spring months of December to May (USGS 2008d). Mean discharge values for the period of record from 1971 to present range from 4.8 cubic feet per second (cfs) to 29 cfs. The wash is subject to peak floods after heavy precipitation, with extreme variation from year to year. For instance, peak flow was 6,110 cfs in February 2005 and only 17 cfs in February 2007 (USGS 2008d). Cajon Wash is not listed on the CWA §303(d) list and the water quality is considered good (Environmental Protection Agency (EPA) 2008a). The wash has the following designated beneficial uses: municipal and domestic supply, groundwater recharge, water contact recreation, non-contact water recreation, cold freshwater fish habitat, wildlife habitat, and rare, threatened or endangered species support (Santa Ana Regional Water Quality Control Board (SARWQCB) 1995).

Lytle Creek is located south of Cajon Wash, about five to ten miles west of the City of San Bernardino. In the canyons of the San Gabriel Mountains, the creek is perennial and has three forks (North, Middle, and South). West of Interstate 15, the creek becomes intermittent as it crosses the alluvial fan that extends to Colton, California. It is predominantly this drier downstream portion of the creek that would be crossed by the proposed pipeline. The predominant feature of the dry creek bed at the location where it would be crossed is that it is composed of very large cobble, gravel, boulders, and man-made debris (including large pieces of concrete) that have been washed down from upstream areas. Discontinuous corridors of riparian vegetation, including coastal sage scrub, are present throughout the creek (Stellar Blue Team 2006). The proposed pipeline would cross the wash at approximately four locations between MP 10.3 and 13.0. Similar to Cajon Wash, the creek receives most of its water from precipitation and runoff in the winter and spring months, with mean monthly discharge for the period of record 1918 to 2008 ranging from 4.9 to 53 cfs. Frequently, USGS stream gauges for both the upper and lower portions of the creek record zero cfs in the summer months (USGS 2008e). The creek is listed on the 303(d) list for pathogens from unknown nonpoint sources (California State Water Resources Control Board (SWRCB) 2006). Lytle Creek has many designated uses and these include municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, hydropower generation, water contact recreation, non-contact water recreation, cold freshwater habitat, wildlife habitat, and rare, threatened or endangered species support (Stellar Blue Team 2006).

The Mojave River runs through San Bernardino County, from the headwaters in the San Bernardino Mountains approximately 120 miles northeast to its terminus in Silver Dry Lake at Baker, California. The river is predominantly intermittent due to subsurface flow, and usually only has water during large storm events or in areas where geologic structures cause the groundwater to surface (LRWQCB 2005). The streambed of the river consists of porous sand. Due to the lack of perennial water, riparian wetland habitats are discontinuous along the river. The mean monthly discharge for the period 1995 to present at the USGS gauge on the river near Hesperia, California, ranges from 0.07 cfs to 6.5 cfs (USGS 2008f). The proposed pipeline would cross the Mojave River and two large unnamed tributaries of the river at approximately 17 locations. Two large unnamed ephemeral washes just north of the Mojave River would also be crossed by the proposed pipeline at four locations. Prior to 2006, the Mojave River was listed as impaired for priority organic pollutants on the 303(d) list due to groundwater contamination issues in the Barstow area (Lahontan Regional Water Quality Control Board [LRWQCB] 2005). The Mojave River was not listed on the 2006 303(d) list, because these contaminant sources have been remediated (Plaziak 2008) (U.S. Environmental Protection Agency [EPA] 2008b and EPA 2008c). On the 2010 list, segments of the Mojave River at the Lower and Upper Narrows are listed as impaired for fluoride, sulfates, and total dissolved solids. However, the segments that would be crossed by the proposed pipeline are not currently listed as impaired. The perennial portions of the river have the following designated beneficial uses: municipal and domestic supply, agricultural supply, groundwater recharge, water contact recreation, non-contact water recreation, commercial and sports fishing, warm and cold freshwater habitat, and wildlife habitat (LRWQCB 2005).

The California Aqueduct is a manmade concrete channel that starts in Northern California in the San Joaquin River-Sacramento River Delta and flows south to Angeles National Forest supplying water to southern California. It is about 40 feet (ft) wide at most sections, and 30 ft deep. The proposed pipeline would cross the aqueduct in one location, just below Adelanto, California. The aqueduct is listed as impaired on the 2004 305(b) list as it does not attain eight out of 13 designated beneficial uses (EPA 2008c). Although specific causes of impairment are not listed by the EPA, most probable impairments relate to heavy metals, priority organics, nutrients, and pathogens (EPA 2008c).

Ivanpah, Roach, and Soda Lakes are all dry alkali lake beds in California and Nevada. Ivanpah is located in both California and Nevada, while Roach Lake is located entirely in Nevada and Soda Lake is entirely in California west of the Soda Mountains. The lakes are dry throughout most of the year, except in the wetter winter/spring months and only hold water temporarily. Each receives flow from various unnamed ephemeral drainages, as well as storm-generated sheet flow from surrounding alluvial fans. Although none of the lakes have established beneficial use designations, the dry lake beds provide for natural floodplain values and groundwater infiltration and recharge (Heggeness 2008). The pipeline would cross each lake bed once.

3.5.1.2 Groundwater Resources

The Proposed Project lies within the Basin and Range Physiographic Province. The Basin and Range Physiographic Province consists of the following principal aquifer types: volcanic-rock aquifers, carbonate-rock aquifers, and basin-fill aquifers. Together these aquifers are called the Basin and Range Aquifer System.

Aquifers and Groundwater Basins

All of the project area is underlain by the Basin and Range Aquifer system. The southern California portion of the Proposed Project is predominantly underlain by Basin and Range basin-fill aquifers and carbonate-rock aquifers which are comprised of unconsolidated sand and gravel alluvial material and fractured carbonate-rock, respectively. The Nevada portion of the Proposed Project is predominantly underlain by the Basin and Range carbonate-rock aquifers (Planert and Williams 1995). Aquifers in the Basin and Range system, particularly aquifers composed of unconsolidated alluvial materials, can be near to the surface in wetland areas, relatively porous, and have high hydraulic conductivities. These characteristics can make these aquifers susceptible to surface-based contamination (Planert and Williams 1995).

The Basin and Range Physiographic Province is broken down at the regional level, depending on geologic drainage features such as the drainage boundaries of a large river or stream, into hydrographic basins. In California, the Proposed Project would cross the Santa Ana River Basin and the Mojave River Basin. Both of these groundwater basins provide important water supply functions.

The Santa Ana Basin provides two-thirds of the water supply needed for non-potable and potable public uses in the watershed (USGS 2008c). Recharge to the basin is highly seasonal and comes primarily from runoff from the San Bernardino and San Gabriel mountain ranges, as well as from water imported from the Colorado River and northern California sources for irrigation (USGS 2008e).

In the Mojave Basin, most of the public water supply for both residential and agricultural uses in the region stems from this groundwater basin (USGS 2001). Recharge to the basin comes from the Mojave River itself, which is predominantly dry for about 100 miles of streambed, as well as precipitation and ephemeral streamflow. Groundwater withdrawal from the basin, combined with the low recharge from the river has frequently resulted in overdraft conditions.

In Nevada, two major hydrologic basins crossed by the proposed pipeline are the Central Region Basin, which includes the Ivanpah Valley (a portion of which is also in California along the border) and Jean Lake Valley aquifers, and the Colorado River Basin, in which the Las Vegas Valley aquifer resides (Nevada Department of Conservation and Natural Resources 2008). Las Vegas Valley, Ivanpah Valley North and South, and Jean Lake Valley sub-basins are all designated groundwater basins that require additional administration to protect groundwater resources and declare preferred uses.

No EPA-designated sole-source aquifers would be crossed by the proposed pipeline in either California or Nevada. Sole-source aquifers are groundwater basins that supply at least fifty percent of the drinking water in the area overlying the aquifer and have no alternative drinking water source(s) available that could physically, legally and economically supply all drinking water needed (EPA 2008a).

No locally designated groundwater/wellhead protection areas would be crossed by the proposed pipeline (Borgzinner 2009; California Department of Pesticide Regulation 2007; Las Vegas Valley Water District 2007). Groundwater protection areas are those groundwater resources that are susceptible to contamination from various surface sources and require regulatory management. However, the proposed pipeline would pass through several designated Nevada State Drinking Water Protection Areas (DWPAs). In Nevada, DWPAs are state endorsed wellhead protection zones that have been established by the state to identify areas which supply water to a public well that have a high vulnerability to contamination as designated by the Nevada Bureau of Safe Drinking Water. The pipeline would pass within 1,000 ft of several high vulnerability DWPAs (Table 3.5-4).

Table 3.5-4 Nevada State Drinking Water Protection Areas in Proximity to the Proposed Project by MP

MP Range	Vulnerability Ranking	Distance to Pipeline (ft)
196-197	High	< 1,000
208-209	Not evaluated	< 1,000
221-222	High	< 6,000
223-224	Not evaluated	< 3,000
229-230	High	< 1,000

Groundwater Depth

Groundwater depth varies throughout the Proposed Project area. Groundwater depths as reported were derived from average groundwater levels found in domestic and municipal/irrigation wells within the Proposed Project vicinity as published by the California Department of Water Resources (URS Corporation 2008). Groundwater levels in the Colton to Cajon Pass Project vicinity are more than 50 feet below ground surface (bgs). Average depths in the Cajon Pass are 121-365 ft, with shallow groundwater expected in the perennial portions and alluvial washes of Cajon Wash and Lytle Creek. In the Mojave Basin vicinity, average groundwater levels range from 200 to 360 ft; however, in some portions of the river during heavy seasonal precipitation, shallow groundwater will be temporarily present. This is also generally true for all the alluvial washes and dry lake beds that would be encountered by the Proposed Project.

In the Proposed Project area, the floodplain of the Mojave River near Barstow (MP 54-55, and 86-90), and near Baker (MP 145-146) have been identified as potentially having shallow groundwater (URS Corporation 2008). East of the Mojave Basin to the Nevada Stateline, water levels are greater than 100 feet from bgs, with the exception of the Ivanpah Valley Basin where groundwater ranges from 24-31 feet bgs, particularly at MP 185-194. In Nevada, groundwater is anticipated to be shallow during seasonal rainfall events in a few areas: active washes, flat-lying playas, Ivanpah and Roach dry lake beds between Primm and Jean, and in downtown Las Vegas. Groundwater generally increases to 30 feet bgs where the pipeline ends near Tropicana Boulevard, although pockets of shallow groundwater have been reported between Jean and Primm (URS Corporation 2008).

Groundwater Quality

Groundwater quality varies among the sub-basins. All of these basins are generally influenced by shallow aquifer recharge sources, both from urban land use and precipitation runoff events from the mountain foothills.

In the Santa Ana Basin, the USGS (Hamlin et al. 2002) sampled groundwater wells in the inland basin (west of the San Gabriel and San Bernardino mountains). The water had higher concentrations of calcium and bicarbonate, and lower concentrations of chloride and sulfate than the coastal region. This calcium-bicarbonate composition reflects the higher quality of the recharge that originates from the San Gabriel and San Bernardino Mountains.

Similarly in the Mojave Basin, more pristine calcium bicarbonate groundwater occurs near the San Bernardino Mountains and near the Mojave River channel. Nearer to areas such as Victorville, Adelanto, and Apple Valley, the groundwater reflects an urban influence and is comprised of sodium bicarbonate, sodium bicarbonate-sulfate, sodium-calcium sulfate, and sodium chloride waters. Total dissolved solids content ranges from 500 mg/L up to 1,105 mg/L (near Apple Valley) (LRWQCB 2004).

Groundwater quality in the Ivanpah Valley Basin varies widely, and reflects a mixed character of sodium, calcium and bicarbonate. Closer to Ivanpah Lake, sodium chloride groundwater is present (LRWQCB 2004).

In Nevada, groundwater from the Jean Lake Valley aquifer is used predominantly for mining, milling, and stock water purposes. Groundwater from the Las Vegas Valley aquifer is used to supply many uses including municipal, irrigation, recreation, environmental, industrial, and commercial (Nevada Department of Conservation and Natural Resources 2009).

Surface Water and Groundwater Contamination Sources

Approximately 305 industrial and municipal sites are characterized by Federal, state, and local databases as having hazardous materials on site, and/or having historic or recent discharge of potentially hazardous waste within the range of the Project area. Of those sites, 38 have the potential to be sources of contamination to surface water and/or groundwater (see Human Health and Safety, Section 3.17). These 38 sites are located within 1,000 ft of the pipeline. Eighteen of the 38 facilities are identified as having past or current contamination impacts to groundwater or surface water based on documented hazardous releases (Table 3.5-5).

Table 3.5-5 Hazardous Waste Sites with Confirmed Groundwater and/or Surface Water Contamination Identified Near the Proposed Project

Site	Location	MP	Data Source	Issue
Chevron Tank Farm	2297 S. Riverside Ave., Colton, California	0 and 1	UST, RCRA-SQG, Permits San Bernardino	Contaminated groundwater.
Yermo Truck Stop	39753 Yermo Rd, Yermo, California	0 and 1	BEP	Inactive service station facility with a chronic fuel leakage; may have contributed to nearby groundwater contamination; may have been delisted from BEP.
Mobil Facility #04-086 /Colton Terrace	2305 South Riverside Ave, Bloomington, California	0 and 1	LUST, HazNet, RCRA-SQG, UST, EMI, FINDS	Gasoline release affecting a drinking water aquifer – cleanup action in 1999.
Circle K/Unocal	8324 Hwy 138, Phelan, California	25	LUST	methyl-tert butyl ether (MTBE) was reported to have affected a drinking water aquifer and a preliminary site assessment workplan was reported as submitted in February 2001.
George Air Force Base	Near SR 395, east of Adelanto, California	46 and 53	NPL, CERCLIS, CORRACTS, DOD, EIC, RCRA-TSD	Trichloroethene-contaminated groundwater; depth to groundwater unknown.
Unnamed landfill facility	Adelanto, California	48	SWIS, SWLF, CHMIRS	Landfill with petroleum releases that affected a waterway.
Barstow Marine Corp Logistic Base	Barstow, California	83 and 91	DOD, Envirostor, active Federal Superfund site	Contaminated groundwater – remedial actions are occurring under EPA. The majority of the wastes historically generated by Barstow Marine Corps Logistics Base (MCLB) have been vehicle and surplus related. Vehicle related wastes include: oils, grease, hydraulic fluids, fuels, battery acids, antifreeze, bilge waters, paints, degreasers and solvents. Surplus wastes include ammunition, various sources of low level radiation, and chemicals including pesticides. Thirty-eight sites have been identified and placed into seven operable units at the Base. Past disposal practices which include landfills, spills, onsite burning, and surface impoundments, threaten the groundwater and have contaminated the surface soils. Volatile organic compounds (VOCs) including trichloroethylene have been detected in the Base's groundwater. The potential threat to the public health and environment includes migration of heavy metals, organic compounds, polychlorinated biphenyls, and trichloroethylene to the groundwater. The groundwater aquifer under the Base is the source of domestic and commercial drinking water in the region. In addition, there is the potential for direct worker contact with contaminated soils onsite. Phase I of a four-phase Installation Restoration Program has been completed

Table 3.5-5 Hazardous Waste Sites with Confirmed Groundwater and/or Surface Water Contamination Identified Near the Proposed Project

Site	Location	MP	Data Source	Issue
				by the DoD. Phase I identified 33 of the 38 sites for investigation of potential contamination. The site was placed on the National Priority List in November, 1989. On October 24, 1990, EPA, Department of Health Services (DHS), DoD and the Regional Water Quality Control Board (RWQCB) entered into a Federal Facility Agreement to investigate contamination under EPA and State oversight. The Department receives reimbursement for its oversight costs via a DoD/DHS cooperative agreement (ENVIROSTOR 2009).
Baker General Store	71780 Baker Blvd. Baker, California	Alternative route near MP144	LUST	Oxygenated VOCs were reported to have affected a drinking water aquifer.
Pikes Mobile	71927 Baker Blvd, Baker, California	Alternative route near MP 144	LUST	The oxygenated VOC MTBE was reported to have affected a drinking water aquifer. Both remedial action/cleanup and post remedial action monitoring were reported as of October 2003.
Arco#5010	72058 Baker Blvd, Baker, California	Alternative route near MP 144	LUST	MTBE was reported to have affected a drinking water aquifer and remedial action/cleanup was reported as underway as of June 1999.
Chevron #9-9879	72063 Baker Blvd, Baker, California	Alternative route near MP144	LUST, CORTESE, RCRA-SQG, HazNet, Permits San Bernardino and UST	MTBE was reported to have affected a drinking water aquifer which is addressed by a vapor extraction remediation plan November 2001.
Arco Station 5951	72111 Baker Blvd, Baker, California	Alternative route near MP 144	LUST, CORTESE, HazNet, UST	MTBE was reported to have affected a drinking water aquifer and remedial action/cleanup was reported as underway as of November 2001.
Unocal Station	72137 Baker Blvd, Baker, California	Alternative route near MP144	LUST	MTBE was reported to have affected a drinking water aquifer and a pollution characterization was reported as reviewed in May 2002.
Former Xcel Station	72307 Baker Blvd, Baker, California	Alternative route near MP144	LUST, UST	Gasoline was reported to have affected a drinking water aquifer. A preliminary site assessment workplan was submitted in December 2002.
Former Bronco Station	72074 Baker Blvd, Baker, California	Alternative route near MP 144	CORTESE	Release from UST; in the same area as where MTBE has affected a drinking water aquifer.
Texaco Station	72132 Baker Blvd, Baker, California	Alternative route near MP 144	CORTESE, HazNet, UST	Release from UST; in the same area as where MTBE has affected a drinking water aquifer.

Table 3.5-5 Hazardous Waste Sites with Confirmed Groundwater and/or Surface Water Contamination Identified Near the Proposed Project

Site	Location	MP	Data Source	Issue
Molycorp Minerals LLC	Mountain Pass	MP-178 to MP-181	BLM	Several separate groundwater plumes associated with tailings and waste disposal ponds at mine. Current site investigation and remediation efforts under Regional Water Quality Control Board orders.
Molycorp Minerals LLC	Ivanpah Dry Lake	Mp-192	BLM	Groundwater plume comprised of nitrates extending from New Ivanpah Evaporation pond towards Primm. Current monitoring under Regional Water Quality Control Board order.
Former D&G Oil Facility	6179 Las Vegas Boulevard Las Vegas, Nevada	Alternative route near MP 232	LUST, hazardous waste site, historic and active USTs	Confirmed release of gasoline affecting soil and groundwater. Investigation of a release of gasoline affecting soil was closed in February 2004.
Calnev Pipeline Bracken		233	NDEP Bureau of Corrective Action	Confirmed release of jet fuel/aviation gasoline and jet A that has affected soil and groundwater. The case status is open.

Notes:
UST = underground storage tank
LUST = leaking underground storage tank
NDEP = Nevada Division of Environmental Protection
RCRA = Resource Conservation and Recovery Act
SQG = small quantity generator

Water Supply Wells and Springs

The Applicant would request authorization from landowners to test and document the baseline condition, yield, and water quality of any private wells or springs being used as permitted water supplies within 200 feet of the pipeline construction ROW. Testing of non-permitted wells and springs may also be necessary and similar information would be gathered for any public water wells or municipal water supply springs located within 400 feet of the pipeline construction ROW.

A preliminary evaluation of well location maps has identified six wells within 150 feet of the centerline of the pipeline and four mapped springs within 1,000 ft of the pipeline (Table 3.5-6). These springs occur in the Cajon Wash/Lytle Creek area and near Wheaton Wash (Figure 3.5-2, Maps 1 to 4). Based on field observations (Marx 2009), the springs in the Cajon Wash/Lytle Creek area (MP 18, 20, and 25) are intermittent/perennial, while the one near Wheaton Wash is ephemeral.

Table 3.5-6 Water Supply Wells and Spring/Seeps in Proximity to the Proposed Project by MP

Water Source	MP	Distance to Pipeline (feet)
Well	1.14	3.5
Well	1.14	10.2
Well	7.06	38.4
Well	7.07	40.2
Well	10.88	39.1
Spring[a]	18	< 1,000
Spring[a]	20	< 1,000
Spring[a]	25	< 1,000
Well	54.60	29.1
Spring	183	< 1,000

[a] These springs are located on USFS land.

Water for use in daily construction activities and for hydrostatic testing of the pipeline would be supplied from five sources, as follows:

- West Valley Water District, Rialto, California;
- Mojave Water Agency, Apple Valley, California;
- Baker Community Services, Baker, California;
- Molycorp Minerals, Mountain Pass, California; and
- Las Vegas Valley Water District, Las Vegas, Nevada

The water source, capacity, and estimated water use from each source are provided in Table 3.5-7. The water volume required for dust control during construction is estimated to be a maximum of 0.8 acre-feet (ac-ft) per day in areas where dust control across the entire 100-foot wide right-of-way is required. Water requirements for construction along existing roads would be much less, at 0.16 ac-ft per day, and water use for construction in urban areas would be 0.001 ac-ft per day. Total water use for dust control during construction would be 141 ac-ft (URS Corporation 2011a). Water would also be used for hydrostatic testing of the pipeline. The maximum volume that would be used for hydrostatic testing would be 12.27 ac-ft (URS Corporation 2011a).

Table 3.5-7 List of Potential Local Water Sources by MP

Water Suppliers	Beginning MP	Ending MP	Water Source	Capacity of Source	Total Proposed Water Use
West San Bernardino Valley Water District	0	25	Groundwater	276 ac-ft/day	Maximum – 0.8 ac-ft/day Total Project – 4.4 ac-ft
Mojave Water Agency	25	120	Aqueduct	1436 ac-ft/day	Maximum – 0.8 ac-ft/day Total Project – 56.2 ac-ft
Baker Community Services District	120	164	Groundwater	4.4 ac-ft/day	Maximum – 0.8 ac-ft/day Total Project – 35 ac-ft
Molycorp Inc.	164	201	Groundwater	7 ac-ft/day	Maximum – 0.8 ac-ft/day Total Project – 31 ac-ft
Las Vegas Valley Water District	201	236	Surface Water	2726 ac-ft/day	Maximum – 0.8 ac-ft/day Total Project – 14.3 ac-ft

3.5.2 Applicable Regulations, Plans, and Policies

3.5.2.1 Federal

Clean Water Act. In 1972, Congress passed the Federal Water Pollution Control Act, which was reauthorized in 1977, 1981, 1987, and 2000 as the 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 Permitting. 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 Program (NPDES) permit. NPDES permits can be issued by the USEPA or by agencies in delegated states. The NPDES permit program has been delegated in the State of California to the SWRCB and implemented by the RWQCBs, and in Nevada, to the Nevada Bureau of Water Quality Planning.

Safe Drinking Water Act. The Safe Drinking Water Act was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996, and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and groundwater wells. This act authorizes the EPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water. The act also mandates a Groundwater/Wellhead Protection Program be developed by each state in order to protect groundwater resources that serve as a source for public drinking water.

National Flood Insurance Program (NFIP). The NFIP is administered by FEMA, a component of the DHS. The NFIP is a Federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. Participation in the NFIP is based on an agreement between local communities and the Federal government, which states that if a community adopts and enforces a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard Areas, the Federal government will make flood insurance available within the community as a financial protection against flood losses.

In support of the NFIP, FEMA identifies flood hazard areas throughout the United States and its territories by producing Flood Hazard Boundary Maps, Flood Insurance Rate Maps, and Flood Boundary & Floodway Maps. Several areas of flood hazards are commonly identified on these maps. One of these areas is the Special Flood Hazard Area or high-risk area defined as any land that would be inundated by a flood having a 1-percent chance of occurring in any given year (also referred to as the base flood).

3.5.2.2 State

State water quality standards allow waterbodies to be managed by establishing goals based on 1) designated uses of the water, 2) criteria set to protect human and aquatic organism health, and 3) anti-degradation requirements to prevent current water quality from deterioration. Waters listed as ‘impaired’ do not fully support their designated uses. Section 305(b) of the CWA requires states to submit water quality reports to the EPA every two years that provide a state-wide assessment of all waters. Section 303(d) requires states to provide a list of impaired waters only, identifying possible pollutants and prioritizing those waters for further pollution controls.

California Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act (Porter-Cologne Act), passed in 1969, regulates surface water and groundwater within the state, and also assigns responsibility for implementing CWA §401 through 402 and 303(d) in California. It established the SWRCB and divided the state into nine regions, each overseen by a RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state’s surface and groundwater supplies, but much of its daily implementation authority is delegated to the nine RWQCBs. In California, San Bernardino County programs are administered by the LRWQCB (Region 6) and the SARWQCB (Region 8). The regional boards govern the protection of surface waters through the assessment of the attainment of designated beneficial uses, and currently 23 uses are established for surface waters within the state. Beneficial uses for the major waterbodies to be crossed by the proposed pipeline are given in Section 3.4.2.3, and these designations also extend to any named or unnamed tributaries of those surface waters. Cajon Wash and Lytle Creek Wash are within the jurisdiction of the SARWQCB, while the Mojave River and Ivanpah Lake are within the regulatory bounds of the LRWQCB.

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 also 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 encountered by the Proposed Project in Nevada have established numeric water quality standards. However, both Roach and Ivanpah Lakes and all ephemeral washes must meet narrative water quality standards, which primarily concern protection of the features from pollutants and toxics (Heggeness 2008).

Construction General Stormwater Permit. CWA §402 regulates construction-related stormwater discharges to surface waters through the NPDES program. In California, the SWRCB has been delegated the authority by the EPA to administer the NPDES program through the RWQCBs, and has developed a general permit for Storm Water Discharges Associated with Construction Activities (Water Quality Order 99-08-DWQ) (Construction General Permit). The Proposed Project area is under the jurisdiction of both the LRWQCB and the SARWQCB, and therefore both boards will need to be notified of the Proposed Project's intention to proceed under the Construction General Permit and abide by the terms of that permit (including preparation of a Stormwater Pollution Prevention Plan (SWPPP)), or obtain individual storm water permits for construction. Because the Proposed Project would disturb greater than one acre, coverage under the NPDES Construction General Permit from the SWRCB will need to be obtained. Petroleum contaminated materials must be disposed of in accordance with applicable state and local regulations. If, during operation of the pipeline, groundwater becomes contaminated with petroleum fuel and must be treated (typically through activated carbon absorption and air stripping), a general waste discharge permit must be acquired before discharging the treated groundwater

The Nevada Bureau of Water Pollution Control administers the NPDES program in Nevada and will need to be contacted concerning issuance of a stormwater discharge permit within Clark County. Again, while Nevada does not have specific regulations pertaining to the treatment of fuel spills during construction, all petroleum contaminated materials must be disposed of in accordance with applicable state and local regulations.

Dewatering and Other Low Threat Discharges General Permit. The California Regional Water Quality boards have developed a general permit and waste discharge requirements for discharge of dewatering water and other low threat discharges to surface waters (NPDES General Permit CAG995001) (Dewatering General Permit). The Dewatering General Permit is relevant to any necessary trench dewatering during pipeline construction, and disposal of hydrostatic test water prior to placing the pipelines into service. The Dewatering General Permit requires that potable water be used for pipeline pressure testing. The General Permit specifies that pollutant concentrations in the discharge water not cause or threaten to cause pollution, contamination, or nuisance. The permit specifies effluent limitations for the discharge, including Basin Plan requirements and a requirement that the discharge meet the limitations of toxic and effluent standards established pursuant to §301, 302, 304, 306, and 307 of the CWA. A notice of intent and fee are required to be submitted to obtain coverage under the permit.
The Nevada Bureau of Water Pollution Control has developed general permits for NPDES stormwater discharge at construction sites, industrial areas, mining discharge, and for small municipal storm sewer systems. A notice of intent and fee are required to be submitted to obtain coverage under the permit. An NPDES discharge permit will be required for discharge of hydrostatic test waters in Clark County. In addition, a permit will be needed to appropriate water

for all construction activities, including dust suppression and hydrostatic testing. This permit is administered by the Nevada Division of Water Resources.

Groundwater Protection Areas and Wellhead Protection. In California, the California Department of Public Health established the Drinking Water Source Assessment and Protection Program, which provides guidance to local level agencies for source protection of surface water and groundwater drinking water supplies. The California Department of Pesticide Regulation's Groundwater Protection Program is charged with identifying areas sensitive to pesticide contamination and develops mitigation measures and regulations to prevent pesticide movement into groundwater systems.

In Nevada, the NDEP administers the Wellhead Protection Program, which is developed and implemented at the local level, such as the public water system, city, or township (Clark County 2008). The NDEP offers guidance to the local districts, endorsement of Well Head Protection Programs, enforces regulatory setbacks to protected groundwater and wellhead areas, and keeps track of specific areas delineated as wellhead and source water protection areas.

Stormwater Management

The Santa Ana RWQCB has required the unincorporated areas of San Bernardino County, the 16 incorporated cities of the County within the Santa Ana River watershed, and the San Bernardino Flood Control District, as permittees, to be included in the NPDES Municipal Stormwater Permit (the Permit). The Permit and §4 of the Report of Waste Discharge, dated April 1995, require the development and adoption of New Development/Redevelopment Guidelines (Guidelines).

These Guidelines are to be used by the permittees of the San Bernardino County Stormwater Program as a supplement to the Drainage Area Management Program and the Report of Waste Discharge. The purpose of preparing the Guidelines was to identify pollutant prevention and treatment measures that could be incorporated into development projects. The Guidelines recommend which Best Management Practices (BMPs) should be required as standard practice. The Guidelines provide information on storm water quality management planning, general conditions, special conditions, and construction regulatory requirements.

The Guidelines also define structural and non-structural BMPs and lists the BMPs that are considered as "standard practice" for new developments. A major philosophy of the County's NPDES stormwater quality program is a regional approach to stormwater quality planning and management on a watershed basis (Camp Dresser and McKee 2000).

3.5.2.3 Local

The Proposed Project would cross several regional and local water districts including San Bernardino Valley Municipal Water District, West San Bernardino Valley Water District, San Gabriel Valley Water District, San Bernardino Valley Conservation District, and the Mojave Water Agency in San Bernardino County, and Southern Nevada Water Authority and the Las Vegas Valley Water District in Clark County. One of the primary mandates of these entities is to ensure long-term public water supply through the protection of surface water and groundwater resources, including supply, storage, recharge capability, and chemical quality. These districts will be conferred with during implementation of the Proposed Project to ensure protection of groundwater resources, compliance with any established groundwater management plans, and if necessary, to secure permits needed for encroachment on water district easements.

San Bernardino County

Floodplain Management

The San Bernardino County Flood Control District was formed as an urgency and progressive measure for the preservation and promotion of public peace, health, and safety as a direct aftermath of disastrous 1938 floods. The District exercises control over all main streams in the County, acquires a ROW for all main channels, constructs channels, and has carried out an active program of permanent channel improvements in coordination with the USACE. The District administers encroachment permits needed for flood channel crossings or any work within the district's ROW, should they be required.

Stormwater Management

Currently, the County of San Bernardino follows state standards for water quality, and does not have their own specific standards. During construction, projects will be required to obtain coverage under the state's General Permit for Construction Activities that is administered by the California Regional Water Quality Board, RWQCB. Stormwater management measures will be required to be identified and implemented that will effectively control erosion and sedimentation and other construction-based pollutants during construction. Other management measures, such as construction of detention basins, will be required to be identified and implemented that will effectively treat pollutants that would be expected for the post-construction land use. Because projects will be subject to regulatory requirements, impacts to water quality standards or waste discharge requirements related to implementation of the General Plan are considered less than significant. All future individual construction projects over one-acre in size that are implemented under the updated County of San Bernardino General Plan will be required to have coverage under the state's General Permit for Construction Activities. As stated in the Permit, during and after construction, BMPs will be implemented to reduce/eliminate adverse water quality impacts resulting from development. Compliance with applicable state and local water quality regulations will ensure that impacts to water quality are less than significant.

Clark County

Floodplain Management

The Clark County Regional Flood Control District has a comprehensive floodplain management program in place that includes a regulatory program that establishes standards and requirements for flood hazard management. The County adopted revised 'Uniform Regulations for the Control of Drainage that comply with national FEMA standards, and which provide regulatory control over land development in floodplain areas. These regulations outline when and where Floodplain Use Permits are 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).

Stormwater Management

A Stormwater Quality Management Committee was formed as a partnership entity among the cities of Las Vegas, North Las Vegas, Henderson, the Clark County Regional Flood Control District, and Clark County. This 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 include those where one 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).

3.5.3 Environmental Consequences

3.5.3.1 Requirements and Focus of NEPA versus California Environment Quality Act (CEQA) Analyses

Potential Impacts to be Evaluated Under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential water resources impacts have been identified for evaluation:

- Result in short- or long-term violations of Federal, tribal, or state water quality standards (addressed as WR-1 below);
- Introduce non-hazardous, non-beneficial discharges into surface water and groundwater resources such that water quality is degraded and water quality standards are exceeded (addressed as WR-2 below);
- Alter the flow or degrade the quality of groundwater to natural systems or wells for private and municipal purposes (addressed as WR-3 below);
- Degrade the quality of surface waters by increasing erosion, sedimentation, or the introduction of contaminated waters (addressed as WR-4 below); or
- Reduce stream flow quantity or impact riparian vegetation such that significant damage occurs to beneficial uses or aquatic life (addressed as WR-5 below).

CEQA Significance Criteria

Under CEQA, the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to water resources, the relevant CEQA significance criteria provided in Section IX of the checklist is:

- Violate any water quality standards or waste discharge requirements (addressed as part of WR-1 below);
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted; addressed as part of WR-3 below);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which will result in substantial erosion or siltation on- or off-site (addressed as part of WR-4 below);

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which will result in flooding on- or off-site (addressed as WR-4 below);
- Create or contribute runoff water which will exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (addressed as WR-6 below);
- Otherwise substantially degrade water quality (included in the evaluation of all impacts discussed above);
- Place housing within a 100-year flood hazard area (addressed as part of WR-7 below);
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows (addressed as part of WR-7 below);
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam (addressed as part of WR-7 below); or
- Cause inundation by seiche, tsunami, or mudflow (addressed as part of WR-7 below).

The criteria associated with the placement of housing, structures, and causing inundation are not applicable to the Proposed Project because it would not involve the construction of structures or placement of facilities in an area susceptible to seiche, tsunami, or mudflow. Therefore no impacts with respect to these criteria would be significant with respect to CEQA.

3.5.3.2 Impact Analysis

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under NEPA and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. While Section 3.5.1, Affected Environment, identifies resources within the general vicinity of the Proposed Project, the impact analysis focuses on water resources that are directly crossed by the pipeline or associated aboveground structures or within 150 ft of the centerline of the pipeline in the case of wells, seeps, and springs. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Mitigation measures (MMs) are compiled in Section 3.4.4, Summary of Mitigation. In addition, the Applicant has proposed minimization measures in their Plan of Development, which are incorporated into the Proposed Project as follows:

Applicant's Proposed Minimization Measures (APMM)

The Applicant has proposed seven measures to mitigate potential impacts to water resources in the Proposed Project area. These measures are considered a part of the Proposed Project and are taken into account when analyzing the Proposed Project's potential to impact groundwater, surface water, aquatic life, drainage patterns or flood flows; to cause contamination through spillage of hazardous materials, erosion, or sedimentation; or to violate any applicable water quality standards and discharge regulations. Minimization measures for the Proposed Project are as follows:

- **APMM-WR-1:** If dewatering activity is required, a permit shall be obtained from the required agencies and BMPs employed.
- **APMM-WR-2:** An HDD Contingency Plan has been developed (Kinder-Morgan 2009) that shall address impact concerns with specific measures that minimize the potential for frac-out, monitor drilling, and respond quickly to any releases.
- **APMM-WR-3:** An Integrated Contingency Plan (Spill Response Plan) would be developed that details spill response procedures and training, as well as coordination activities with local response agencies.
- **APMM-WR-4:** A SWPPP/ Erosion Control Plan would be developed during detailed design and will identify the specific BMPs to be implemented at specific locations along the route, including measures to reduce increased stormwater runoff resulting from the proposed Project. This plan will include pre- and post-construction measures as needed.
- **APMM-WR-5:** Standard pipeline erosion control techniques and BMPs would be used (e.g., trench breakers, water bars, silt fencing, fiber rolls, etc.).
- **APMM-WR-6:** Reclamation and Restoration/Revegetation Plans would be prepared in consultation with the land management agency resource specialists, USFWS, and CDFG as part of the discussion related to the Biological Opinion for the Proposed Project.
- **APMM-WR-7:** A Reduced Pressure Principle Backflow device would be used at service connections for domestic water service. Also, a double check backflow device will be used at service connections for fire and irrigation.

BLM concurs with the Applicant's proposed minimization measures.

Proposed Project Activities that Could Result in Impacts

Hydrostatic Test Water and Water for Construction Needs

The Proposed Project would require the use of water to perform construction activities, particularly for dust suppression and street wash down activities. Water would also be necessary for hydrostatic testing of the pipeline. A maximum of 0.8 ac-ft of water per day is estimated for daily construction purposes. The maximum rate of 0.8 ac-ft per day would only occur in areas of cross-country construction, where dust control within the entire 100-foot wide right-of-way is required (approximately 70 percent of the length of the proposed project), and only on hot, dry days. Construction along roadsides or in urban areas (approximately 30 percent of the length of the proposed project), and on cooler or wetter days, would require much lower rates of water application (URS Corporation 2011a). The total water use estimated for construction is estimated to be 141 ac-ft (URS Corporation 2011a). Because this assumes water use at the maximum rate of 0.8 ac-ft per day for the entire cross-country portion of the project, this is likely to be an overestimate, as much of the construction would occur during cooler and wetter times of the year. The total estimated volume of water necessary to test the pipeline would be approximately 12.27 ac-ft (URS Corporation 2011a). Therefore, the total maximum water use for the project would be 153.27 ac-ft. Water for both daily construction and hydrostatic testing would be obtained from local water systems as discussed in Table 3.5-7.

Discharge of construction and hydrostatic test waters could potentially result in erosion and scour in natural systems, along with the degradation of water quality from resulting sedimentation or transport of unanticipated contaminants encountered during the pipeline testing process. Discharge of these waters would depend on regulatory agency preference and guidance. The waters could be provided for agricultural use, or could be discharged into a contained area and allowed to percolate into the ground. For the latter scenario, discharge could occur into temporary detention basins or into natural features such as dry lake beds or an existing drainage channel as permitted by regulatory agencies.

The withdrawal of large volumes of local surface and/or groundwater from private and municipal wells for construction activities could have an impact on water resources in the area if the diversions deplete existing groundwater, affect area springs, constitute a large portion of the source volume and flow, or if the volume delivery exceeds well capacity. This is a concern because natural drought conditions in these desert regions are being compounded by increased development and water supply usage. Additionally, the loss of substantial water from intermittent surface stream systems, such as the Mojave River, could result in changes in stream habitat (vegetation impacts and water quality changes) and the potential loss of organisms through entrainment and desiccation.

Waterbody Crossings

Construction activities at waterbody crossings may result in hydrology and water quality impacts. Waterbodies would be crossed via open-cut trenching or HDD. Heavy machinery and equipment would be placed in the channel bed to perform the trenching excavation and post-installation restoration work associated with the open-trenching. Construction would require excavation and stockpiling of material prior to pipeline lay-down, and potential removal of riparian vegetation. If removal of non-invasive riparian vegetation is required, revegetation would occur in accordance with the revegetation plan developed as part of the Applicant's minimization measure APMM-WR-6. After the pipe is installed, the stockpiled material would be replaced and surface contours restored to previous conditions. Refer to Chapter 2 for further details on construction methods. Surface disturbance, including removal of riparian vegetation, could impact water quality by potentially increasing sedimentation into waters and altering water column temperature and dissolved oxygen regimes. Dewatering activities may occur at stream crossings to facilitate the open-trench construction where surface water is present or surficial groundwater is encountered. Dewatering methods could entail flow diversion techniques and upstream water impoundment combined with the removal of water from a downstream area in order to conduct trenching activity. These activities would result in impacts to hydrology, including alteration of drainage patterns and temporary fluctuations in surface and groundwater supply in the immediate vicinity. In areas where water features are crossed utilizing open cut methods, drainage patterns would be temporarily altered.

The HDD construction method would be used to cross Cajon Wash, California Aqueduct, Mojave River, and possibly other features with flowing water present, as required by regulatory agencies. HDD involves drilling a hole underneath a waterbody and its banks, allowing assembled pipe segments to then be pulled through the hole. During drilling activities, a non-toxic bentonite clay and water drilling fluid would be used to lubricate the hole. The advantage of HDD is that disturbance to soil and vegetation within the waterbody do not occur as with the open cut method. However, one risk with HDD is the potential for "frac-out", a hydraulic fracture where drilling muds can leak into the waterbody or nearby land surface due to unforeseen fissures in the subsurface geology. This frac-out can introduce large quantities of drilling fluid into the water column, impacting water quality and affecting fisheries by settling and temporary inundation of aquatic habitats. Faster moving water would disperse the drilling muds over a larger area more quickly. Frac-out could occur during pipeline construction and thus would result in impacts to water resources.

Flow diversion and/or surface erosion resulting from excavation, dewatering, vegetation removal, and discharge activities could have floodplain impacts. Trenching and post-trenching restoration could result in alteration of stream banks, contours, and the character of channel bed sediment. Compaction of soils and/or sediments by the use of heavy machinery and surface preparation techniques in the floodplain could result in increased run-off from waterbodies and alteration of groundwater recharge patterns, particularly during high intensity precipitation events. Removal of vegetative cover in riparian areas to be crossed by the pipeline could likewise result in increased run-off, erosion of banks, and recharge pattern modification. Erosion scour points and bank nick points could be created from discharge of high volume waters or the release of water impounded upstream of dewatering activities. Structures placed in floodplains, such as the pipeline and associated aboveground facilities, could impede or restrict flood flows and be subjected to an increased risk of failure due to flood stress. A new Silver Lake Pump Station would be installed near Baker, California, and a new 3-mile lateral run will be constructed from the pipeline to McCarran Airport. Upgrades to existing terminals at the Baker Pump Station and the Colton North Terminal would include the addition of electrical substations and ancillary facilities, although these upgrades would occur within the existing facility footprint. Changes in the overall drainage basin acreage due to increased footprint into the floodplain could occur with the addition of the new 16-inch pipeline, new laterals, and the Silver Lake Station.

General Construction Activities

Hazardous products would be used frequently onsite during the course of normal construction (e.g. pipeline coating during installation, refueling vehicles, hydraulic fluid use in equipment, etc.). These products, along with increased equipment and vehicular use, pose risks of water contamination from potential spills/leaks from these sources. There is an even higher risk when these products are used near or in waterbody channels, or near shallow groundwater or wells. Shallow groundwater areas would be crossed by the Proposed Project (Section 3.5.1.2), particularly during the higher precipitation season, and risk of contamination from Proposed Project activities would be higher at that time in these areas.

The potential exists for construction related activities to encounter surface water or groundwater contamination, particularly during deep drilling or blasting or in areas where shallow groundwater lenses are present. Eighteen industrial and commercial facilities were identified within 1,000 feet of the pipeline that have past or present groundwater and/or surface water contamination issues (Section 3.5.3.3). If blasting and drilling occur within the vicinity of these facilities, then the risk of encountering and spreading contaminated soil or groundwater would be increased. Blasting activities may occur in areas where substantial rock formations are present through which the pipeline footprint must past through. Depth of blasting would vary depending on the area.

Deep drilling is also proposed by the applicant at certain locations to provide cathodic anode protection, which requires a 12-inch diameter bore drilled to 500 ft depth. An additional 10 new deep well anodes would be installed, although the specific locations for the new pipeline would not be available until final design is initiated. Based on preliminary information, it is assumed that the new deep well anodes would be installed at Colton North Terminal, Cajon Station, Adelanto Junction, Lenwood Junction, Yermo Junction, Barstow Terminal, Silver Lake Station, Valley Well/Cima Station, Sunset Junction, and McCarran Terminal. Effort would be made to co-locate the new deep anodes next to existing anodes or in existing or new stations/junctions. Cathodic protection deep well anodes would be constructed in accordance with California and Nevada well standards. Blasting and deep drilling activity could impact water supply and groundwater recharge patterns by potentially reducing yield in wells or waterbodies directly adjacent to blasting or drilling areas.

Proposed Project/Proposed Action (Alternative 1)

Impact WR-1: Introduce hazardous contamination into surface and groundwater resources such that water quality is degraded and water quality standards are exceeded.

Hazardous materials necessary for construction such as petroleum products, lubricants, and welding glues would be used on site. All hazardous materials would have to be containerized, handled, transported, and disposed of according to state and Federal regulations (see Section 3.17). The Applicant, or its contractor, would be required to maintain hazardous materials at the staging areas in proper storage containers and with sufficient secondary containment in accordance with Federal and State regulations.

Construction activities could result in spills from accidents or improper handling or disposal of fuels or hazardous materials. Vehicle accidents could result in fuel spills from rupturing of fuel tanks, and hazardous materials spills could occur if hazardous material containers were compromised. Refueling or servicing of equipment or vehicles with diesel fuel, gasoline, lubricating oils, grease, hydraulic and other fluids can result in spills.

If these hazardous materials accidentally spilled/leaked, then there is a risk of the material leaking into surface water and/or groundwater, particularly where work occurs in proximity to waterbodies or shallow groundwater. However, spills that could occur during construction are likely to be relatively small in size because they would be confined the size of a container of a hazardous material. If fuel tanks are used for re-fueling, spills could be larger in size. This leakage could result in temporary or permanent contamination of the resource depending on contaminant characteristics (e.g. will the material be perpetuated in the environment). The impact could be local or widespread, again depending on the spill type.

Six wells are located within 150 feet of the pipeline, and 4 springs within 1,000 feet. To protect these water supply sources during construction, spill response plans in compliance with state and Federal regulations would be in place. In accordance with these requirements, an Integrated Contingency Plan would also be developed that details spill response procedures and training, as well as coordination activities with local response agencies. Once the final route is selected and during ROW acquisition, any additional new wells within the construction boundary will be identified. During operation, there are a variety of inherent system features that could reduce potential impacts to nearby wells and springs. The system is operated using a computerized SCADA system, which is essentially an electronic pipeline monitoring system that constantly gathers operational data from critical sources throughout the system and automatically adjusts the pressure and flow rate within the pipeline to provide for safe operation of the system. Mainline pumps for the pipeline would be equipped with pressure sensing devices that would shut down the pipeline operations in case of a major pipeline break. In addition to the SCADA system, several pipeline system maintenance procedures would be regularly performed including: pipeline inspections, a corrosion control program, pigging, pressure testing, valve inspections, and cathodic protection system testing.

Spreading contaminated water could also occur if activities, particularly blasting and deep drilling, are conducted in proximity to known contaminated sites and encounter contaminated surface water and/or groundwater from these sites. Facilities with known water contamination would be avoided by pipeline trenching, blasting and deep drilling activities, as feasible. If not feasible, then specific contingency plans would be prepared prior to construction outlining handling of hazardous materials, remedial actions, and agency notification requirements in the event that contamination is encountered. In the city of Rialto, there is a concern that an existing perchlorate plume in the Rialto/Colton aquifer could be impacted or spread by Proposed Project activities. The depth to the aquifer is 100 feet bgs. As Proposed Project construction in this area would not extend past 10 ft bgs, there is no danger of impacting the plume and thus this issue will not be further evaluated in the analysis.

During operation of the pipeline, there is the potential for impacts to surface or subsurface water quality if pipeline integrity is compromised by natural events, human caused accidents or pipeline failure. Drilling activity by other non-project entities within or adjacent to the pipeline post-construction would also be monitored in the future to prevent pipeline encroachment and potential contamination. Line riders, biweekly ROW inspection, Dig Alert or Underground Service Alert, and aerial reconnaissance would be conducted as pipeline ROW defense mechanisms to identify any drilling, excavation and other construction activities in the vicinity of the ROW. Proposed maintenance would include daily and weekly pipeline checks using both visual observation and Supervisory Control and Data Acquisition (SCADA)-directed methods in order to prevent and detect leaks or spills. In addition, the Applicant currently has an Integrated Contingency Plan in place that includes a spill response plan which would be updated for the Proposed Project.

Under NEPA, the release of petroleum products, hazardous material, or hazardous waste to the aquatic environment, depending on the amount, could result in water quality violation. Therefore, any spill or release would represent a moderate to major adverse effect according to NEPA whose duration could range from short- or long-term.

In California, the substantial degradation of water quality is a significant impact under CEQA. The following mitigation measures would assist in avoiding or reducing the level of adverse impacts under NEPA, and CEQA impacts to water resources could be reduced to less than significant levels. Residual impacts under NEPA would remain because, although the mitigation measures would reduce the potential for, and magnitude of, hazardous contamination, they would not completely eliminate the potential for releases.

- **MM WR-1a: Hazardous Material Storage and Usage.** To prevent the degradation of water quality due to contamination of surface or groundwater resources as a result of improper storage or usage of hazardous materials, the Applicant will adopt the procedures and adhere to the restrictions listed below:
    - Environmental inspectors shall place signs a minimum of 100 ft from the boundaries of all wetlands and waterbodies prior to construction. The construction contractor shall not be allowed to place a fuel or oil storage tank without first receiving approval from the environmental inspector that the tank site complies with the 100 foot setback requirement;
    - During construction, no fuel or storage tank shall be allowed to be relocated within or to a new construction yard by the contractor without first receiving approval from the environmental inspector that the tank site for complies with the 100-foot setback requirement;
    - Refueling and lubrication activities shall be conducted at least 100 feet away from a waterbody;

- Fuel and storage tanks shall be placed only at contractor yards. No fuel and storage tanks shall be placed on the construction ROW;
- Construction activities shall be conducted to allow for easy clean up of spills. Construction crews shall have sufficient tools, supplies, and absorbent and barrier materials to contain and recover spilled materials. Crews must be trained how to and must know cleanup and report spills;
- Any fuel truck used for the Proposed Project shall carry an oil spill response kit and spill response equipment at all times;
- No oil or hazardous material storage, staging, or transfer with the exception of refueling stations shall occur within 50 feet of any surface waterbody, surface drainage, storm drain drop inlet, densely populated area (i.e., contains 50,000 or more people and has a population density of at least 1,000 people per square mile), or is designated wildlife habitat. Hazardous materials shall be stored on pallets within fenced and secured areas and protected from exposure to weather. As described above, refueling stations shall not be located within 100 ft of these areas;
- A drip pan or bib shall be placed underneath the nozzle during fueling. The fuel truck shall have cleanup equipment on board the vehicle (e.g., absorbents) and any fuel spilled during loading and unloading will be cleaned up immediately;
- Engine and equipment maintenance and equipment checks shall be performed regularly to avoid and detect leaks. Any vehicles with chronic or continuous leaks shall be removed from the construction site and repaired before being returned to operation. Any wastes generated during equipment maintenance shall be recovered and disposed of wastes in an appropriate manner;
- The minimal amount of pipeline field coating during installation shall be applied at weld locations;
- Pipe shut-off valves shall be installed on each side of waterbody crossings that are 100 ft or wider (49 Code of Federal Regulations [CFR] Part 195); and
- The Applicant or its contractor shall implement measures to prevent the release or accidental spillage of solid waste, garbage, construction debris, sanitary waste, industrial waste, radioactive substances, oil and other petroleum products, and other wastes into waterbodies or water sources.
- Adjacent and/or downstream landowners will be notified of any spills or discharges during construction and operation of the pipeline.

- **MM WR-1b: Management of Staging Areas.** The following spill prevention measures will be implemented by the Applicant or its contractor:
  - Fuels and lubricants shall be stored only at designated staging areas;
  - Contractors shall be required to perform all routine equipment maintenance at the staging area and recover and dispose of wastes in an appropriate manner;
  - Temporary liners and berms and/or dikes (secondary containment) shall be constructed around the above-ground bulk tanks, so that potential spill materials shall be contained and collected in specified areas isolated from any water bodies. Tanks shall not be placed in areas subject to periodic flooding or washout;

- A sufficient supply of sorbent and barrier materials shall be maintained at the construction staging areas. Sorbent and barrier materials shall also be utilized to contain runoff from contaminated areas;
- Shovels and drums shall be stored at each staging area. If small quantities of soil become contaminated, shovels shall be used to collect the soil and the material shall be stored in 55 gallon drums. Large quantities of contaminated soil may be bio-remediated on-site, subject to government approval, or collected utilizing heavy equipment, and stored in drums or other suitable containers prior to disposal. Should contamination occur adjacent to staging areas as a result of runoff, shovels and/or heavy equipment shall be utilized to collect the contaminated material. Contaminated soil shall be disposed of in accordance with state and federal regulations;
- Temporary above-ground tanks shall be visually inspected monthly and when the tank is refilled. Inspection records shall be maintained. Operators shall periodically check tanks for leaks or spills;
- Visible fuel leaks shall be reported to the Contractors' designated representative and corrected as soon as conditions warrant;
- Drain valves on temporary tanks shall be locked to prevent accidental or unauthorized discharges from the tank;
- Equipment maintenance shall be conducted in staging areas to the extent practical; and
- Staging areas will be located outside of RCAs as defined by the five step process in the Forest Plan.

- **MM WR-1c: Blasting and Drilling.** To reduce impacts to water resources from blasting and drilling activities, the Applicant will adhere to the following:
  - A Blasting Plan will be developed during detailed design by the construction contractor. All blasting will be done under permit and in accordance with the California Division of Occupational Safety and Health and Nevada State blasting regulations. The plans will contain site specific blasting techniques and be available at least 90 days prior to construction; and
  - If contaminated soil or groundwater is encountered during blasting and drilling construction, the contaminated material will be contained and possibly treated onsite and then trucked offsite to an appropriate facility for proper disposal.
  - Springs located within 1000 feet of the pipeline construction ROW will be tested prior to construction, regardless of whether or not those springs are used for municipal water supply. The Applicant will request authorization from the landowner to test and document the baseline condition, yield, and water quality of springs meeting these criteria.

Implementation of these measures to prevent the release of hazardous materials/wastes would minimize the chances of a release of hazardous materials/wastes. Therefore, this impact would be reduced to below the level of its significance criteria under CEQA.

Impact WR-2: Introduce non-hazardous, non-beneficial discharges into surface water and groundwater resources such that water quality is degraded and water quality standards are exceeded.

The discharge of waters used for hydrostatic testing and dust suppression could impact water quality if released directly into receiving waters by altering the chemical or biological constituents within the water (i.e. turbidity, dissolved oxygen, pH, temperature, introduced pathogens). If discharged onto dry land or dry channel beds, then impacts to water quality are not likely as the discharged water has time to evaporate from the surface, and/or percolate into the soil where it is naturally treated. Discharge of high volume, high velocity waters could increase soil erosion and scour, and subsequently the release of sediment into waterbodies. Containment and control of discharge waters could be obtained through the use of silt fencing barriers and energy dissipating devices. Prior to discharge, all water would be filtered through appropriate media (e.g., hay bales, settling tanks, bladder bags, or filter socks) to remove sediment in accordance with agency requirements and BMPs in California and Nevada, as applicable. These velocity and sediment control measures could greatly reduce scour and erosion from occurring on the surface of natural features, whereby sediment impacts to water quality would be temporary and minor.

Although mainly done to minimize impacts to surface water bodies, operation of HDD equipment could result in the accidental release of bentonite drilling fluid (frac-out), which is a non-hazardous drilling fluid. Frac-outs could cause intense, short-term increases of turbidity in the water column and cause intense, temporary impacts to aquatic organisms. The spatial extent of the impact would depend on the volume of release and flow of the water at the time of the release. An HDD Contingency Plan has been developed to reduce this risk and to outline containment and response measures should a release occur. With the implementation of this plan, potential impacts to water quality from this activity would be temporary and minor.

Surface grading, vegetation clearing, and trenching activities in the watershed would likely increase erosion and sediment discharge into waterbodies, thus temporarily reducing water quality. This could occur immediately during construction if surface water is present, or the process could be delayed during the dry season until the wet season, when water flow could mobilize sediment if not stabilized. The impact would be temporary while vegetation re-growth and restoration work was completed, somewhere along the lines of a few months to a few years. Intensity and spatial extent of the impact would vary depending on the amount of work conducted in the waterbody, the amount of vegetation removed, the quality of returning the site back to original soil and contour conditions, and the intensity of the precipitation season. Standard pipeline erosion control techniques and BMPs would be used (e.g., trench breakers, water bars, silt fencing, fiber rolls, etc). The SWPPP/Erosion Control Plan would be developed during detailed design and will identify the specific BMPs to be implemented at specific locations along the route. Reclamation and Restoration/Revegetation Plans would also be prepared in consultation with the land management agency resource specialists, USFWS, and CDFG as part of the discussion related to the Biological Opinion for the Proposed Project. These plans are expected to be available within 90 days after initiation of consultation and initial discussions with the U.S. Fish and Wildlife Service (USFWS).

Under NEPA, a reduction in groundwater or surface water quality through the release of discharges from the Proposed Project could result in water quality violation. Therefore, any spill or release would represent a minimum of a moderate to major adverse impact according to NEPA whose duration could range from short- or long-term. The mitigation measures presented below would reduce the potential for degradation of water quality. However, residual impacts under NEPA would remain because, although the mitigation measures would reduce the potential for, and magnitude of, degradation, they would not completely eliminate the potential for releases to groundwater or surface water.

In California, the substantial degradation of water quality is a significant impact under CEQA. In compliance with CEQA, impacts to water resources would be reduced to less than significant levels by adopting the following mitigation measures.

- **MM WR-2a: Hydrostatic Water Discharges.** To reduce the risk of violating water quality standards or degrading existing water quality due to the discharge water used for hydrostatic testing of the pipeline, the Applicant will perform the following tests and obtain the following permits:
  - Hydrostatic test water shall be analyzed before being discharged. Hydrostatic test water shall be discharged in accordance with all applicable Federal, state, and local environmental standards. Discharged water shall be required to meet the water quality standards imposed by the discharge permits for the permitted discharge locations;
  - NPDES General Construction and Industrial Stormwater Permits will be obtained from appropriate regulatory agencies; and
  - A Federal CWA §401 Water Quality Certification will be obtained from the Regional Board.
- **MM WR-2b: Reducing Sedimentation Discharges.** To reduce the risk of violating water quality standards or degrading existing water quality due to increased sedimentation, the Applicant will adhere to the following restrictions and adopt the following procedures:
  - Silt Fencing, hay bales and/or straw wattles will be used to protect streams or wetland areas, to minimize erosion, and to minimize sediment from entering waterbodies;
  - Water bars will be installed on slopes greater than five percent adjacent to waterbodies;
  - Construction contractor employee training will address protection of waterbodies from construction activities;
  - Mulch and restoration near waterbodies will focus on minimizing siltation and sedimentation in the waterbodies;
  - Erosion control training will be provided to construction and maintenance staff; and
  - A USFS Hydrologist will be consulted on the training of contractors for work being conducted on Forest Service lands.
- **MM WR-2c: Surface Water Crossings.** To reduce impacts to water resources at surface water crossings conducted through either open cut or HDD techniques, the Applicant will adhere to the following:
  - All in-channel construction and drainage crossings will require BMP monitoring and coordination with the landowner's hydrologist. The monitoring requirements are much more stringent for work being done when water is present in the various channels. To the extent practicable, work will be conducted when each system is dry.
  - The Applicant will consult with the landowner on BMPs necessary to prevent excess erosion in areas where HDD will be conducted, as installation of the horizontal bore will require significant surface disturbance.

- The Forest Plan and supplements require that work within a defined Riparian Conservation Area (RCA) can only occur if the environment is left in a neutral condition or a condition that is closer to the desired condition.
    - Generally this is accomplished by making the RCA an equipment exclusion area except at approved crossings. The open cut option would likely put equipment in the RCA, and would thus not be the preferred method for installation of the pipe.
    - The drilling alternatives will be evaluated at each crossing to determine which of the techniques (open cut or HDD) and associated mitigations would offer the least resource damage.
- Staging and storage areas will be located outside of RCAs, determined by the five step process defined by the Forest Plan.
- The USFS Hydrologist will be the primary contact for review of mitigation measures for work on USFS lands, training of contractors on requirements for BMP monitoring, coordinating use of the RCA five step process, in-channel monitoring requirements, and groundwater monitoring.
- The USFS District Office will be notified prior to commencement of repair or maintenance work on USFS land.

Impact WR-3: Substantially deplete groundwater supply and/or interfere with sufficient groundwater recharge

The withdrawal of large volumes of groundwater for use in construction could deplete groundwater supplies in the surrounding vicinity if the withdrawal exceeds basin capacity or duration needed for recharge. This impact could be intense, short-term, and affect large areas outside the point of withdrawal. Also, blasting could alter geologic structural integrity such that the specific capacity of nearby wells or shallow aquifers could be affected. This impact to groundwater could be intense and temporary or permanent depending on the geologic conditions, and could potentially have wide-reaching effects.

Of the five proposed water sources, two (the Mojave Water Agency and the Las Vegas Valley Water District), representing 50 percent of the water supply for the proposed project, obtain their supply from surface water sources. These two sources have a supply capacity of 1436 and 2726 ac-ft per day, respectively. The largest water use from any proposed source would be that from the Mojave Water Agency, which would total 56.2 ac-ft through the duration of the project. This total water usage over the course of the project represents less than 4 percent of the daily supply capacity for this water source. Even if the Mojave Water Agency were to supply 100 percent of the water for the year-long proposed project, the total of 153.27 ac-ft represents only 10 percent of the daily supply capacity of this one system. Therefore, no water supply impacts or groundwater depletion would occur at either of these sources.

Groundwater would be the source of supply for water from the West Valley, Baker, and Molycorp systems. These sources would account for approximately 70 ac-ft of total water supply, or approximately 50 percent of the water used by the proposed project. As shown in Table 3.5-7, two of the groundwater-supplied systems (Baker and Molycorp) are relatively small, with capacities of 4.4 and 7 ac-ft per day, respectively. Based on a maximum water need of 0.8 ac-ft per day, and an estimated duration of construction requiring these sources of 80 construction days, use of these water systems could use as much as 18 percent of the daily supply volume from these systems for a period of several months.

The total amount of water proposed to be used from the Baker water system is 35 ac-ft. The groundwater source for the Baker water system is the Silver Lake Valley Groundwater Basin. This basin has an estimated total storage capacity of 380,000 ac-ft (URS Corporation 2011a), and therefore the use of 35 ac-ft would not contribute to a depletion of groundwater supplies.

The total amount of water proposed to be used from the Molycorp well system is 31 ac-ft. The groundwater source for the Molycorp supply system includes wells within both the Upper Kingston and Ivanpah Valley Groundwater Basins. The specific source which would be used for the proposed project cannot be identified at this time. If the source should be the Ivanpah Valley, numerous studies have evaluated the volume of groundwater resources in that area, and the annual recharge is estimated to range from 5200 to more than 6500 ac-ft per year, exceeding estimated future water production by 94 to 1410 ac-ft per year (BLM 2010). Therefore, use of a total of 31 ac-ft by the proposed project is not expected to create adverse impacts.

If the source of water for the Molycorp system is the Upper Kingston Basin, no information has been found regarding available groundwater supplies in that area. Therefore, the exact impact of the use of 31 ac-ft of water from that basin cannot be determined. However, given that Molycorp, at a capacity of 7 ac-ft, is the only identified groundwater user in that area, and that groundwater basins in the area typically recharge in the range of thousands of ac-ft per year, it is unlikely that the use of 31 ac-ft for the proposed project would create adverse impacts to groundwater sources.

The total amount of water proposed to be used from the West Valley Water District is 4.4 ac-ft. Given the overall capacity of this system at 276 ac-ft per day, the use of 4.4 ac-ft over a period of several weeks is unlikely to create adverse groundwater use impacts.

Overall, the amount of groundwater use (a total of 70 ac-ft from three separate systems) is small, compared to available water supplies throughout the proposed project area. In addition, this water use would be temporary, lasting only during the 12 months of construction, and water use would cease after the pipeline becomes operational. Given that use of 0.8 ac-ft per day could use up to 18 percent of the supply capacity of the two smaller water suppliers (Baker and Molycorp), and potential dedication of that supply to other uses, it is possible that the use of groundwater could exceed available supply in these local areas, resulting in adverse impacts to groundwater resources. In addition, the Applicant has not completed water purchase agreements with the five proposed sources, so all five sources may not be available at the time of construction. If either of these scenarios occurs, it is likely that the applicant would not have access to these sources when needed. Therefore, the applicant has proposed that, in the absence of available supply from these sources, 100 percent of project water would be accessed from the West Valley Water District, Mojave Water Agency, and Las Vegas Valley Water District. Although this action would eliminate potential impacts to groundwater sources, it could potentially affect air quality and transportation due to the increased need for trucking for water supply. Those impacts are evaluated in Sections 3.6 and 3.16, respectively.

Under NEPA, the depletion of groundwater resources associated with groundwater use by the Proposed Project would be a direct, adverse impact under NEPA. The duration of the impact would likely be short-term, since the use of water as part of the Proposed Project is associated with construction and hydrostatic testing activities. Following completion of these activities, the adverse impact would cease, although groundwater levels could take a substantial amount of time to recover. Because the impact would cease entirely, there would be no residual impacts under NEPA.

In California, the substantial depletion or interference with recharge of groundwater is a significant impact under CEQA. In compliance with CEQA, impacts to water resources would be reduced to less than significant levels by adopting the following mitigation measures.

- **MM WR-3a: Hydrostatic Test Water Withdrawal**. A preliminary Hydrostatic Test Plan has been developed for the Proposed Project (URS Corporation 2011b). The plan identifies local water supply sources along the length of the route, maximum hydrostatic test pressures to be maintained to prevent overpressure failure, code and standard requirements for testing the pipeline, measures to clean and dry the line, discharge disposal procedures, and the general hydrostatic test procedures and schedule. The pipeline would be tested in segments and several discharge locations located throughout the Proposed Project area. Volumes needed for each test segment would be outlined so that it can be assured that water withdrawal rates would not exceed basin capacity.
- **MM WR-3b: Blasting**. A detailed Blasting Plan will be completed after final design of the Proposed Project has been completed and further geotechnical studies have been conducted. This plan would outline measures to reduce/eliminate impacts to groundwater supply and recharge.
- **MM WR-3c: Groundwater Monitoring**.
  - A Groundwater Monitoring Plan would be developed and implemented for areas where blasting and drilling will occur. This Plan will outline measures necessary to determine whether groundwater supplies have been altered by the Proposed Project. The plan shall address both supply and water quality contamination issues by providing monitoring measures that will be implemented during and immediately post-construction.
  - The USFS and BLM hydrologists would review and comment on this Plan prior to implementation where blasting and drilling may occur and potentially affect springs or other groundwater resources.
- **MM WR-3d: Water Sources and Volumes**. Water use volumes and sources would be limited to those presented in Table 3.5-7. Any water use volume that exceeds the volumes estimated in Table 3.5-7, or the use of any water source other than those defined in the table, would need to be proposed to BLM and the County for further evaluation and approval.

Impact WR-4: Impact floodplain integrity and alter existing drainage patterns such that flood flows will be impeded or re-directed, the risk of flooding are substantially increased, and stormwater drainage capacity is exceeded

Construction of the pump station and associated structures could result in increased impervious surfaces within the watershed. This could lead to increased stormwater runoff that could exceed the current capacity of the floodplain or existing drainage systems. Increased runoff amounts could contribute to flood flows during precipitation events. This would be a long-term, adverse impact.

As discussed previously, discharge of high volume, high flow waters into receiving waterbodies or onto dry land could result in erosion, scour, and altered sediment deposition regimes. These in turn could alter drainage patterns in the floodplain. Surface disturbance activities and the use of heavy machinery in channels could likewise result in altered drainage patterns and increased runoff due to soil compaction, vegetation removal, and increased erosion and sedimentation. The length of in-stream construction work would be relatively short and would likely occur over a seven month span. Channels and banks would be restored back to pre-construction conditions and natural contours to maintain original drainage patterns. BMPs would also be employed that minimize erosion and scour. Impacts to drainage patterns in channel beds would be short-term and minor due to the short time spent on in-stream construction work and with post-construction restoration of drainage back to original contours. Therefore, any adverse impact under NEPA is expected to be of small magnitude and temporary duration.

In California, the substantial alteration of existing drainage patterns and substantial increase in erosion, sedimentation, and stormwater runoff is a significant impact under CEQA. During construction, the Proposed Project could cause substantial alteration in drainage or changes in erosion, sedimentation, and runoff. This effect would be temporary. Compliance with the following mitigation measures during construction would ensure that impacts to water resources are reduced to less than significant levels.

- **MM WR-4: Discharges and Restoration Actions.** To reduce impacts to floodplains or impacts to drainages that might increase the risk of flood by impeding existing flood flows, the Applicant will adhere to the following restrictions and meet the following requirements:
  - Velocity and sediment controls will be employed for construction water discharges;
  - The Applicant will minimize the time spent for in-stream construction work and will focus in-stream work during the dry season;
  - The amount of riparian vegetation clearing will be minimized; and
  - Restoration plans will account for trench settling and prescribe appropriate actions to handle. Original land surface contours will be restored during restoration activities.

Impact WR-5: Reduce stream flow quantity or impact riparian vegetation such that significant damage occurs to beneficial uses or aquatic life.

Because of the proximity of the Proposed Project to low volume and intermittent surface stream systems (such as the Mojave River, Lytle Creek, and Cajon Wash), Proposed Project activities that result in withdrawal or diversion of water from these systems could cause changes in stream habitat (vegetation impacts and water quality changes) and the potential loss of organisms through entrainment and desiccation. Proposed Project activities that could impact these stream systems would include water withdrawal during construction for hydrostatic testing water, modification of water flow systems through blasting, diversion of stream systems to allow for construction activities, and removal or damage to in-stream vegetative resources by heavy equipment.

As discussed as part of WR-1 and Table 3.5-7, the sources of water for construction and hydrostatic testing would be from industrial and municipal water sources within the project area. Some of these potential suppliers obtain their water from groundwater sources. Although withdrawal of groundwater can remove water from adjacent surface water systems, none of these sources are located in close proximity to riparian areas. Therefore, impacts to riparian areas caused by lowering of groundwater levels would not occur.

The potential for blasting to impact adjacent surface water systems was evaluated in Section 3.2.3, as impact GEO-2. That analysis concluded that any impact associated with blasting would be temporary, and would be mitigated by following a Blasting Plan (MM GEO-2).

The Proposed Project would include construction of the pipeline through several crossings of these intermittent stream systems. The primary locations of these crossings include:

- Lytle Creek (MP-11)
- Cajon Wash (MP-12.4)
- Cajon Wash near Cajon Junction (MP-24 to MP-25)
- Mojave River at La Delta (MP-54)
- Mojave River at Daggett (MP-86)

Of these crossings, Lytle Creek, Cajon Creek, and the Mojave River at Daggett are entirely dry most of the year, and do not have associated riparian or aquatic resources that could be impacted by the Proposed Project. Therefore, there would be no adverse impacts at these locations.

The Mojave River at La Delta has both flowing water and riparian vegetation that would be damaged by open trenching for pipeline construction. For the Mojave River crossing, an open trench for pipeline construction would have to be up to 100 feet wide because the nature of the soils (loose, saturated sands) would require a very wide excavation. Therefore, the Applicant's Proposed Project designed for the Mojave River crossing at La Delta includes a planned HDD installation of the pipeline under the river. This would eliminate the need to construct an open trench across the river, and thus reduce the impacts to the riparian vegetation, as well as potential releases of sediment which could impact aquatic receptors. However, the Proposed Project at this location would still require the construction of a temporary access road for heavy equipment associated with the HDD construction to access the remote side of the river. This road would consist of planking laid over the vegetation and water. The planking would cover an area less than 15 feet wide, only wide enough for heavy equipment to cross. The planking would be temporary, and would be removed at the completion of the HDD effort at that location. This impact to the riparian area would be a direct, adverse impact under NEPA and a significant impact under CEQA. However, the impact would be temporary, and would be of a much lower magnitude than construction by the open trench method would be.

Cajon Wash at the Wagon Train area does not have flowing water, but dense riparian vegetation indicates shallow groundwater at this location. The Proposed Project includes construction of the pipeline using the open trench method for approximately one mile, and a width of approximately 100 feet (including room for construction equipment), through this area. This would result in the removal of approximately six acres of riparian vegetation, which would be a direct, adverse impact under NEPA, and a significant impact under CEQA. The impact would be temporary, as Calnev would restore vegetation in the area following construction. The operation of the pipeline in the subsurface following construction would not have any adverse impacts under NEPA and less than significant impacts under CEQA. The USFS has proposed alternative routes for the pipeline in this area, in order to avoid the impacts to the riparian area. Of these, the Wagon Train HDD route under Interstate 15 is included as part of Alternative 2, and is evaluated below.

The potential impact to the Cajon Wash riparian area would be reduced or avoided by complying with the following mitigation measure:

- **MM WR-5: HDD under Riparian Area.** Should the Proposed Action be selected, or the Wagon Train HDD evaluated as part of Alternative 2 prove to be infeasible, then the Applicant will use the HDD construction method rather than the open trench construction method to reduce direct impacts in this area. The length of the HDD will be designed, to the extent feasible, to minimize or eliminate direct impacts to riparian vegetation in this area. The HDD design in this area will be submitted to the USFS for their review and comment prior to construction. Any impacts which cannot be avoided will be mitigated through restoration following construction.

Implementation of this mitigation measure would eliminate any potential impacts to the riparian area, so there would be no residual impacts under NEPA.

Impact WR-6: Create or contribute runoff water which will exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Increase in stormwater runoff volumes could potentially occur if the Proposed Project modified the infiltration rates associated with surfaces in the project area. This generally occurs in association with covering of soil and vegetated areas with concrete, asphalt, or rooftops. The impact could also occur should the project result in compaction of soils over a large area, thus reducing their infiltration capacity. In urban areas with designed and constructed stormwater management systems, the increase in runoff associated with these developments could result in exceeding the capacity of the designed system.

For the Proposed Project, no such large-scale modification of infiltration rates is expected. The only placement of structures or areas covered with impermeable material would be at the location of the proposed Silver Lake Pump Station in Baker. As shown in Table 2-3, this facility would cover approximately 3.0 total acres, only part of which would be covered with impermeable surface. This facility would be located near the town of Baker, and runoff from the facility may be transferred through stormwater drainage ditches or culverts within Baker. However, the increased runoff due to development of this new facility is expected to be minor, and no direct or indirect adverse impact under NEPA on the stormwater systems in Baker would be expected. Potential impacts under CEQA would be less than significant.

Similarly, construction of the new pipeline could potentially result in compaction of soil in limited areas, which could increase runoff rates. In areas where the Proposed Route would be in urban areas with constructed stormwater management systems, the pipeline would either be located underneath a paved road, or in an already compacted area adjacent to the road. Therefore, no increased runoff would be expected in urban areas. In the cross-country stretches of the Proposed Route, the Proposed Project could replace areas of loose soil with compacted soil that has a lower infiltration rate. However, these would be in areas with no engineered and constructed stormwater management systems. Also, the area of compaction would be very narrow (a strip less than 100 feet wide) compared to the large area of surrounding undisturbed soil. Therefore, no adverse impacts under NEPA would be expected from increased runoff on these areas. Potential impacts under CEQA would be less than significant.

Overall, no adverse impacts to stormwater management systems would be caused by the Proposed Project. Therefore, no mitigation measures have been identified.

Impact WR-7: Structures placed within a floodplain that increase risks to people and/or structures from flood waters and mudflow

Proposed Project structures would be placed within high risk floodplain zones as identified in Table 3.5-3. There are 17 locations where the pipeline would be located in high risk flood areas. No aboveground structures would be constructed in any of these areas. Construction and maintenance operations of the pipeline in these areas could expose workers and structures to flooding during high flow precipitation events that can be common during the wet season in desert environments. During construction and operation/maintenance activities, pipeline staff would be exposed to potential flood water risks if flooding occurs during times when personnel are on the site. The length of construction time would be relatively short (about eight months), and the time required for on-site operation/maintenance of the pipeline and substation is also limited (quarterly or annually depending on the activity). Potential risks to personnel and infrastructure associated with flooding would occur on a short-term basis, and in the case of ongoing operations, would be a permanent situation.

In California, exposing people or structures to increased flooding or mudflow inundation is a significant impact under CEQA. In compliance with CEQA, impacts to water resources would be reduced to less than significant levels by adopting the following mitigation measure.

- **MM WR-7: Floodplain Management**. At a minimum, 100-year flood event planning will be incorporated into the design criteria for the construction of the pipeline and associated infrastructure. During construction, a SWPPP will be implemented to ensure that runoff from Proposed Project components is substantially reduced and routed to the appropriate drainage systems.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to water resources associated with the seven route variations are described below:

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to water resources. Neither segment crosses a waterbody. The amount of water used for construction and hydrostatic testing, and its source, would be approximately the same for either route. Therefore, the potential water resource impacts associated with the Bloomington route would be the same as those identified for the Proposed Project.

Rialto Alternative

The Rialto Alternative would increase the distance of the pipeline from two known wells at MP 7.06 and 7.07; however, it would increase the pipeline's proximity to a well located to the west of the current 8-inch pipeline (Table 3.5-6). Other than proximity to these wells, the Rialto route and the Proposed Project route that it would replace do not have any differences with respect to water resources. Neither segment crosses a waterbody. The amount of water used for construction and hydrostatic testing, and its source, would be approximately the same for either route. Therefore, the potential water resource impacts associated with the Rialto route would be the same as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route would shorten the length of the pipeline by 0.2 miles. The shorter length of the pipeline would slightly reduce the amount of water use required for construction and hydrostatic testing, but would also require additional water for the boring operation. This route would avoid adverse impacts to the six acres of high quality riparian habitat in the San Bernardino National Forest by bypassing the Cajon Wash riparian area and using a HDD to construct the pipeline under Interstate 15. Therefore, the Wagon Train Road route would avoid the direct adverse impact to the riparian area identified in the analysis of WR-5, and would have a lower level of water resources impacts than the Proposed Project.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa route would increase the length of the pipeline by approximately 0.8 miles. The longer length of the pipeline would slightly increase the amount of water use required for construction and hydrostatic testing. Other than the different length of pipeline, the Phelan Road/Baldy Mesa route and the Proposed Project route that it would replace do not have any differences with respect to water resources. Neither segment crosses a waterbody. Therefore, the potential water resource impacts associated with the Phelan Road/Baldy Mesa route would be slightly higher than those identified for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, are very similar with respect to water resources. The Proposed Route diverges from the route of the existing pipelines in order to avoid constructability issues associated with placing the proposed pipeline within an active wash. However, the wash is a dry desert drainage, and construction and operation of the pipeline within the wash would not have any adverse impact to water resources. Neither segment crosses a waterbody. The amount of water use for construction and hydrostatic testing, and its source, would be approximately the same for either route. Therefore, the potential water resource impacts associated with the Zzyzx Alternative route would be the same as those identified for the Proposed Project.

Baker Alternative

The Baker Alternative route would shorten the length of the pipeline by approximately 0.6 mile. The shorter length of the pipeline would slightly reduce the amount of water use required for construction and hydrostatic testing. Other than the shorter route, the Baker route and the Proposed Project route that it would replace do not have any differences with respect to water resources. Neither segment crosses a waterbody. Because of the shorter length, the alternative route would have a slightly reduced level of impacts with respect to water resources than the Proposed Project.

Silver Lake Pump Station Alternative

The alternative and Proposed Action locations for the proposed Silver Lake Pump Station do not have any differences with respect to water resources. Neither location is located within close proximity to a waterbody, and the amount of water required for construction and operation of the Proposed and alternative locations would be the same. Therefore, the potential water resource impacts associated with the alternative pump station location would be the same as those identified for the Proposed Project.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral and Sunset Junction alternative and the Proposed Project route through Bracken Junction would be approximately the same length, and would therefore require the same amount of water use, and source of water, for construction and hydrostatic testing. Neither segment crosses a waterbody. The amount of water use for construction and hydrostatic testing, and its source, would be approximately the same for either route.

The Sunset Lateral option would route the pipeline in close proximity to hazardous facilities located along MP 232 (Table 3.5-5) where there is known shallow groundwater contamination. However, the alternative route would also avoid known groundwater contamination at the Bracken Junction site. Therefore, the potential impacts and mitigation measures discussed as part of WR-1 would be approximately the same for both routes. Further information should be gathered about these hazardous sites to determine whether the depth of the known contamination could be exposed during construction activities potentially affecting water resources. Impacts of exposing contaminated groundwater (WR-1) would be similar to those of the Proposed Project route under both NEPA and CEQA. All other impacts to water resources would also be the same as for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to water resources.

Summary

Overall, Alternative 2 would have a reduced level of impacts as compared to the Proposed Project. The primary difference would be a reduction of impacts associated with WR-5 due to the avoidance of the Cajon Wash riparian area by using the Wagon Train Road HDD. In addition, the route for Alternative 2 is slightly longer, so would have a slightly higher need for water during construction and hydrostatic testing. Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2, except for MM WR-5. These mitigation measures would reduce the level of impacts under CEQA to less than significant.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative location, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. With respect to water resources, Alternative 3 would incorporate the reduced impacts associated with avoidance of the Cajon Wash riparian area at the Wagon Train Road HDD area, and would avoid the increase in water use associated with the Phelan

Road/Baldy Mesa route. All other water resources impacts under both NEPA and CEQA would remain the same as Alternatives 1 and 2.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure would be installed. No ground-disturbing activities would take place and potential impacts to water resources resulting from current activities on the existing pipelines would remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems would be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines would remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, California to Las Vegas, Nevada. Impacts from current operations include any potential leaks and/or spills from the pipeline or truck and train delivery systems. However, current maintenance activities on the existing Calnev Pipeline System involve visual and SCADA directed pipeline integrity checks twice per week, and a spill response plan is in place for all delivery systems. This operation and maintenance regime would not change under the No Action Alternative; therefore, water resource impacts from these activities would remain unchanged.

3.5.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.5-8, there are differences in impacts based on the route variations.

Table 3.5-8 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
The Proposed Project could potentially affect surface and groundwater quality through modification of drainage or releases of hazardous materials during construction. Water use could also potentially impact groundwater or surface water supplies.	Reduced potential to impact stream flows/riparian area by using the Wagon Train HDD. The; slightly longer route would require a slightly greater need for water during construction.	Reduced potential to impact stream flows/riparian area by using the Wagon Train HDD. The slightly longer route would require a slightly greater need for water during construction.	No water use impacts would occur, and no surface water or groundwater degradation from modification of drainages or releases of materials during construction would occur.

3.5.4 Summary of Mitigation

A complete list of mitigation measures proposed for the Proposed Project is presented by impact in Table 3.5-9. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.5-9 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
WR – 1: Introduce hazardous contamination into surface and groundwater resources such that water quality is degraded and water quality standards are exceeded	**MM WR – 1a:** Hazardous Material Storage and Usage	Waterbody Crossings	BLM, USFS, CADTSC	Pre-construction Construction Operation
	MM WR – 1b: Management of Storage Areas	Staging Areas	BLM, USFS, CADTSC	Construction
	MM WR – 1c: Blasting and Drilling	Blasting/Drilling Areas	Regional Water Quality Control Boards	Pre-construction Construction
WR – 2: Introduce non-hazardous, non-beneficial discharges into surface water and groundwater resources such that water quality is degraded and water quality standards are exceeded	**MM WR – 2a:** Hydrostatic Water Discharges	Hydrostatic Water Discharge Locations	Regional Water Quality Control Boards	Pre-construction Construction
	MM WR – 2b: Reducing Sedimentation Discharges	Waterbody Crossings	BLM, USFS, Regional Water Quality Control Boards	Pre-construction Construction Post -construction
	MM WR – 2c: Surface Water Crossings	Waterbody Crossings	BLM, USFS	Pre-construction Construction
WR – 3: Substantially deplete groundwater supply and/or interfere with sufficient groundwater recharge	**MM WR – 3a:** Hydrostatic Test Water Withdrawal	Hydrostatic Testing Water Sources	BLM, San Bernardino County	Pre-construction
	MM WR – 3b: Blasting	Blasting Areas	Regional Water Quality Control Boards	Pre-construction
	MM WR – 3c: Groundwater Monitoring	Blasting Areas	BLM, San Bernardino County	Pre-construction Construction
	MM WR – 3d: Water Sources and Volumes	Entire route	BLM, San Bernardino County	Construction
WR-4: Impact floodplain integrity and alter existing drainage patterns such that flood flows will be impeded or re-directed, the risk of flooding is substantially increased, and stormwater drainage capacity is exceeded	**MM WR -4:** Discharges and Restoration Actions	Waterbody Crossings/ Floodplains	BLM, USFS, Regional Water Quality Control Boards	Construction Post-construction
WR – 5: Reduce stream flow quantity or impact riparian vegetation	**MM WR – 5:** HDD Under Riparian Area	Cajon Wash riparian area at Wagon Train Road	USFS	Pre-construction
WR – 7: Structures placed within a floodplain that increase risks to people and/or structures from flood waters and mudflow	**MM WR – 7:** Floodplain Management	Waterbody Crossings/Floodplains	BLM, USFS, Regional Water Quality Control Boards	Pre-construction

References

Bureau of Land Management. 2010. Environmental Impact Statement for Ivanpah Solar Electric Generating System.

California Department of Pesticide Regulation. 2007. Groundwater Protection Area Maps. http://www.cdpr.ca.gov/docs/emon/grndwtr/gwpamaps.htm. Accessed November 1, 2008.

California State Water Resources Control Board (SWRCB). 2006. Proposed 2006 CWA §303(d) List of Water Quality Limited Segments. October 25. http://www.swrcb.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/swrcb/r8_final303dlist.pdf

Camp Dresser & Mckee. 2000. County of San Bernardino Santa Ana Basin Area Report of Waste Discharge, Application for Renewal of the Municipal NPDES Stormwater Permit, 2001 – 2006. September 1. San Bernardino County, California.

Clark County. 2008. Clark County Area-Wide Water Quality Management Plan Executive Summary, Preliminary Draft. Clark County, Nevada. June.

Clark County Regional Flood Control District. 2007. Uniform Regulations for the Control of Drainage. Clark County, Nevada. December 13.

Clark County Stormwater Quality Management Committee. 2009. Federal & State Stormwater Regulations. http://www.lvstormwater.com/regs.htm. Accessed March 19, 2009.

County of San Bernardino. August 2006. *Barstow Sanitary Landfill Expansion Project Draft Environmental Impact Report*. Prepared by ECorp. Consulting, Redlands, CA.

Environmental Protection Agency (EPA). 2008a. Sole Source Aquifer Protection Program. http://cfpub.epa.gov/safewater/sourcewater/sourcewater.cfm?action=SSA. Accessed November 5, 2008.

Environmental Protection Agency (EPA). 2008b. Total Maximum Daily Load for Listed Water Information, Mojave River. http://oaspub.epa.gov/tmdl/enviro.control?p_list_id=CAR628.200MOJAVE%20RIVER&p_cycle=1998. Accessed October 22, 2008.

Environmental Protection Agency (EPA). 2008c. Assessment Data for California, Mojave River Watershed (8 Digit USGS Cataloging Unit), Year 2004. http://iaspub.epa.gov/tmdl_waters10/w305b_report_V4.huc?p_huc=18090208&p_state=CA. Accessed October 22, 2008.

Federal Emergency Management Agency (FEMA). 2009. National Flood Hazard Layer. Vector Digital Data. Washington, DC. Available online at: http://www.msc.fema.gov.

Hamlin, S, K. Belitz, S. Kraja, and B. Dawson. 2002. Ground-Water Quality in the Santa Ana Watershed, California: Overview and Data Summary, Water-Resources Investigations Report 02-4243. USGS, National Water Quality Assessment Program, Sacramento, CA.

Lahontan Regional Water Quality Control Board (LRWQCB). 2004. California's Groundwater Bulletin 118. Sacramento, California. February 27.

Lahontan Regional Water Quality Control Board (LRWQCB). 2005. Water Management Initiative Chapter, 2.5 Mojave River Watershed. http://www.swrcb.ca.gov/lahontan/water_issues/programs/watershed_management/

Las Vegas Valley Coordination Committee. 2008. What is the Wash? Chronology of Events. http://www.lvwash.org/wash/chronology/chrono.html. Accessed November 5, 2008.

Las Vegas Valley Water District. 2007. Wellhead Protection Information for the Las Vegas Valley Water District. http://www.lvvwd.com/html/searchlight_wellhead.html. Accessed November 5, 2008.

Nevada Department of Conservation and Natural Resources. 2008. Division of Water Resources. List of Clark County's Hydrographic Basins. http://water.nv.gov/WaterPlanning/cty-bsn/cl_basin.cfm. Accessed October 21, 2008.

Nevada Department of Conservation and Natural Resources. 2009. Division of Water Resources. Hydrographic Area Summary of Jean Lake Valley and Las Vegas Valley. http://water.nv.gov/WaterPlanning/UGactive/index.cfm. Accessed March 20, 2009.

Planert, M and J. Williams. 1995. *Groundwater Atlas of the United States for California and Nevada.* USGS, Publication No. HA 730-B. http://pubs.usgs.gov/ha/ha730/ch_b/index.html

Santa Ana Regional Water Quality Control Board (SARWQCB). 1995. Beneficial uses for the Santa Ana Regional Water Quality Control Board. January 24, *Updated February 2008.* http://www.swrcb.ca.gov/santaana/water_issues/programs/basin_plan/docs/chapter3.pdf

Stellar Blue Team. 2006. *Lytle Creek Watershed Management Plan.* Prepared by Los Angeles Neighborhood Land Trust, National Park Service, Alba Farmers, Orange County Local Agency Formation Commission, CDWR, Lytle Creek Fire Safe Council, and SARWQCB. October 20.

United States Geological Survey (USGS). 2001. Water Supply in the Mojave River Ground-Water Basin, 1931-99, and the Benefits of Artificial Recharge. USGS Fact Sheet, November.

United States Geological Survey (USGS). 2004. *Desert Landforms and Surface Processes in the Mojave National Preserve and Vicinity.* January 14. http://pubs.usgs.gov/of/2004/1007/river.html

United States Geological Survey (USGS). 2008a. http://water.usgs.gov/GIS/huc_name.html. HUC boundaries and brief descriptions

United States Geological Survey (USGS). 2008b. http://pubs.usgs.gov/of/2005/1278/. USGS publication on Santa Ana watershed characteristic

United States Geological Survey (USGS). 2008c. http://ca.water.usgs.gov/user_projects/sana_nawqa/gw_inland_sus.html Santa Ana Basin NAQWA info: surface and groundwater

United States Geological Survey (USGS). 2008d. http://waterdata.usgs.gov/nwis/monthly?referred_module=sw& site_no=11063510&por_11063510_1=2207713,00060,1,1971-10,2007-10&format=html_table&date_format=YYYY-MM-DD&rdb_ Cajon creek discharge monthly stats for last 40yrs

United States Geological Survey (USGS). 2008e. http://waterdata.usgs.gov/ca/nwis/dv?cb_00060=on&format= html&begin_date=1918-10-01&end_date=2008-10-23&site_no=11062000&referred_module=sw Upper Lytle creek discharge

United States Geological Survey (USGS). 2008f. http://waterdata.usgs.gov/ca/nwis/monthly/?referred_module=sw& site_no=10260550&por_10260550_1=2207133,00060,1,1995-10,2007-09&format=html_table&date_format=YYYY-MM-DD&rdb_compression=file&submitted_form=parameter_selection_list Mojave River discharge

URS Corporation. 2006. *Environmental Impact Statement/ Environmental Impact Report for the Proposed BNSF Cajon Third Main Track Summit to Keenbrook*. Prepared for the US Army Corps of Engineers and San Bernardino County.

URS Corporation. 2008. *Baseline Geology and Geohazards Assessment Calnev Expansion Project*. October.

URS Corporation. 2011a. Draft Groundwater Monitoring Plan. July 26, 2011.

URS Corporation. 2011b. Hydro Plan, Draft Revision B, June, 2011.

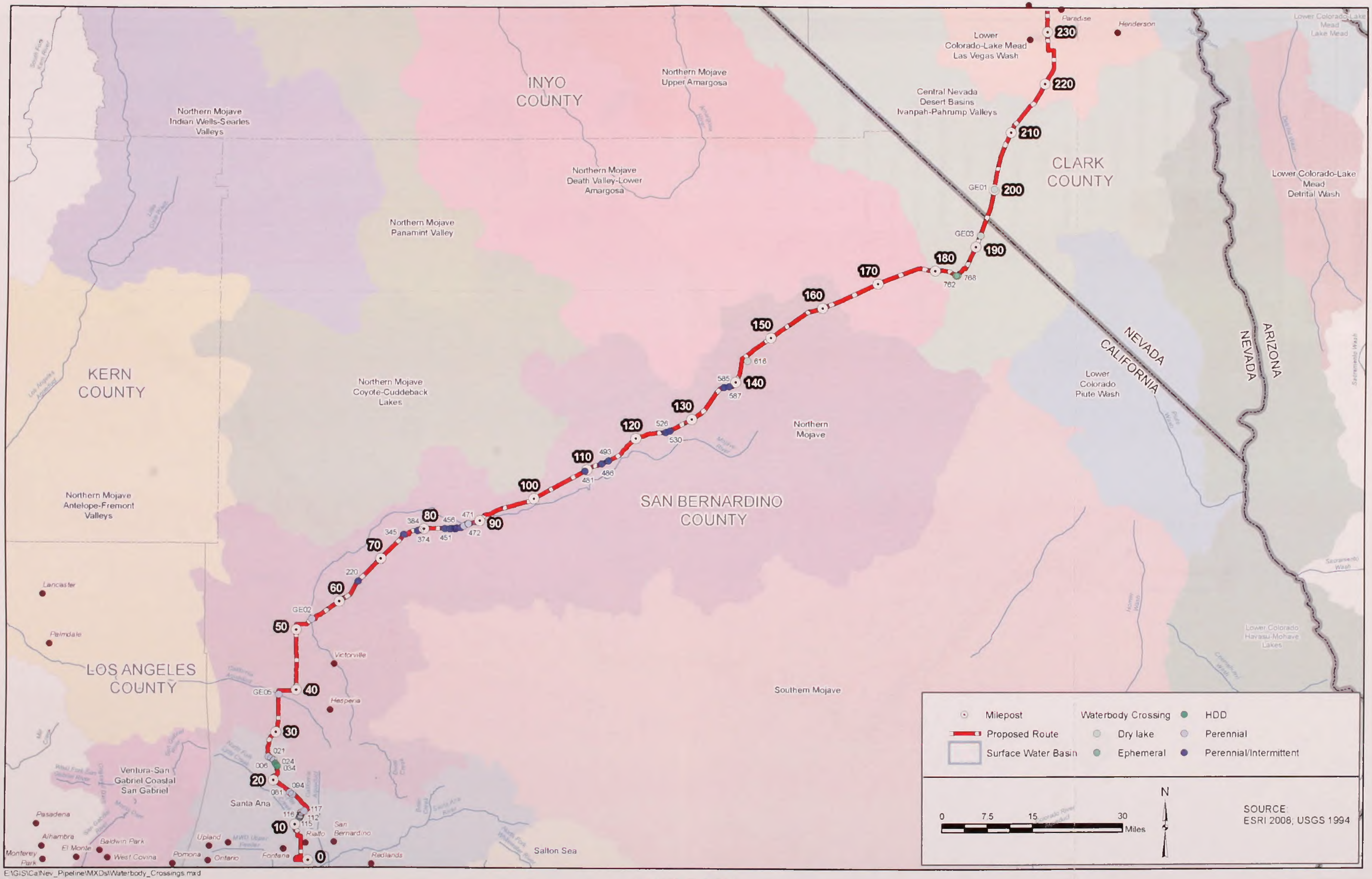
Personal Communications

Borgzinner, Kim. 2009. Nevada Division of Environmental Protection. Email and phone conversations with Jennifer Siu. Ecology and Environment, Inc. April 06.

Heggeness, John. 2008. Nevada Division of Environmental Protection. Phone conversation with Jennifer Siu. Ecology and Environment, Inc. October 23.

Marx, David. 2009. URS Corporation. Email and phone conversations with Jennifer Siu. Ecology and Environment, Inc. March 16.

Plaziak, Mike. 2008. Lahontan Regional Water Quality Control Board. Phone conversation with Jennifer Siu. Ecology and Environment, Inc. October 27.



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Date: June 28, 2011

FIGURE 3.5-1
SURFACE WATER BASINS AND MAJOR WATERBODY CROSSINGS BY THE PROJECT ROUTE

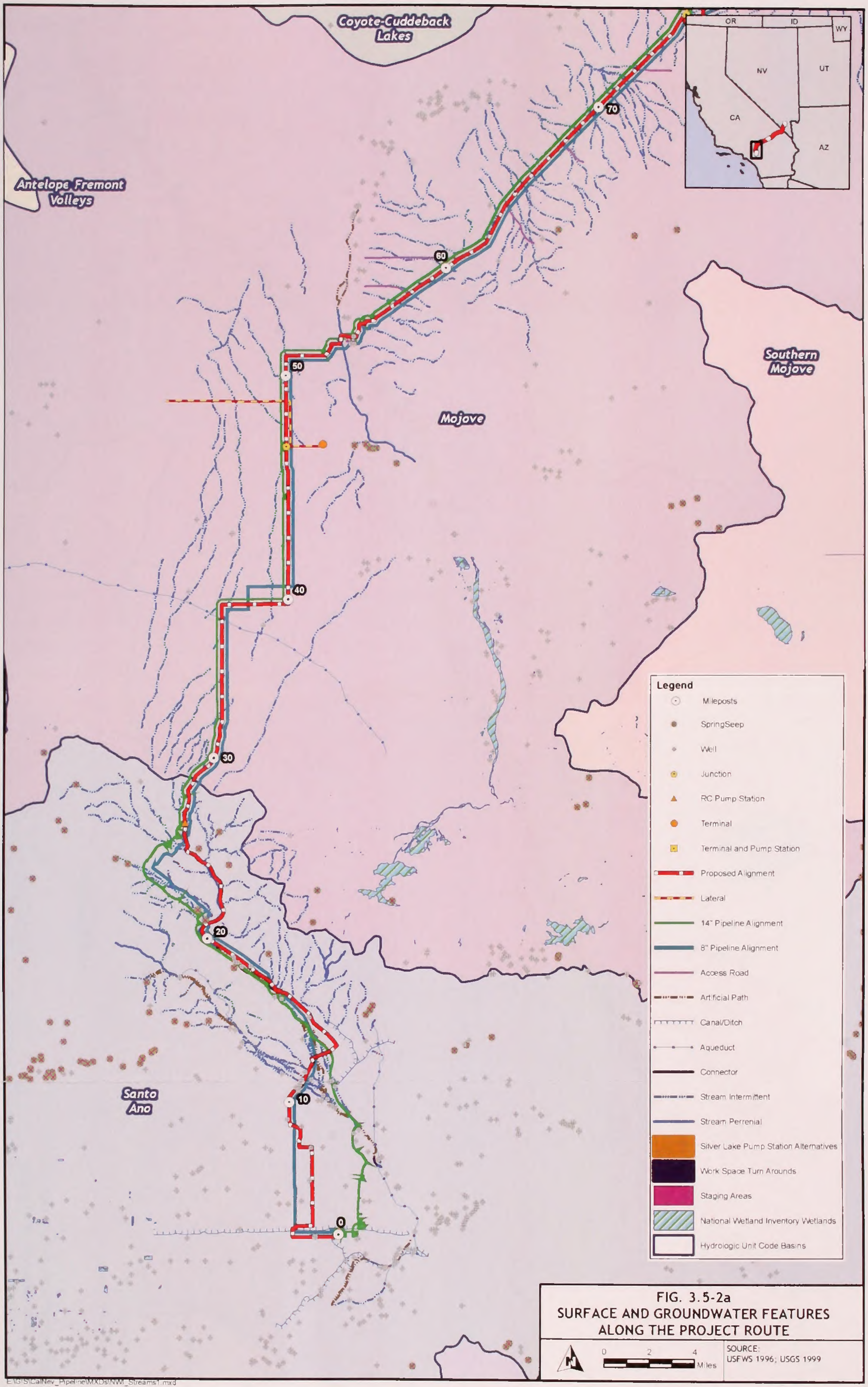

FIG. 3.5-2a
SURFACE AND GROUNDWATER FEATURES ALONG THE PROJECT ROUTE

SOURCE:
USFWS 1996; USGS 1999

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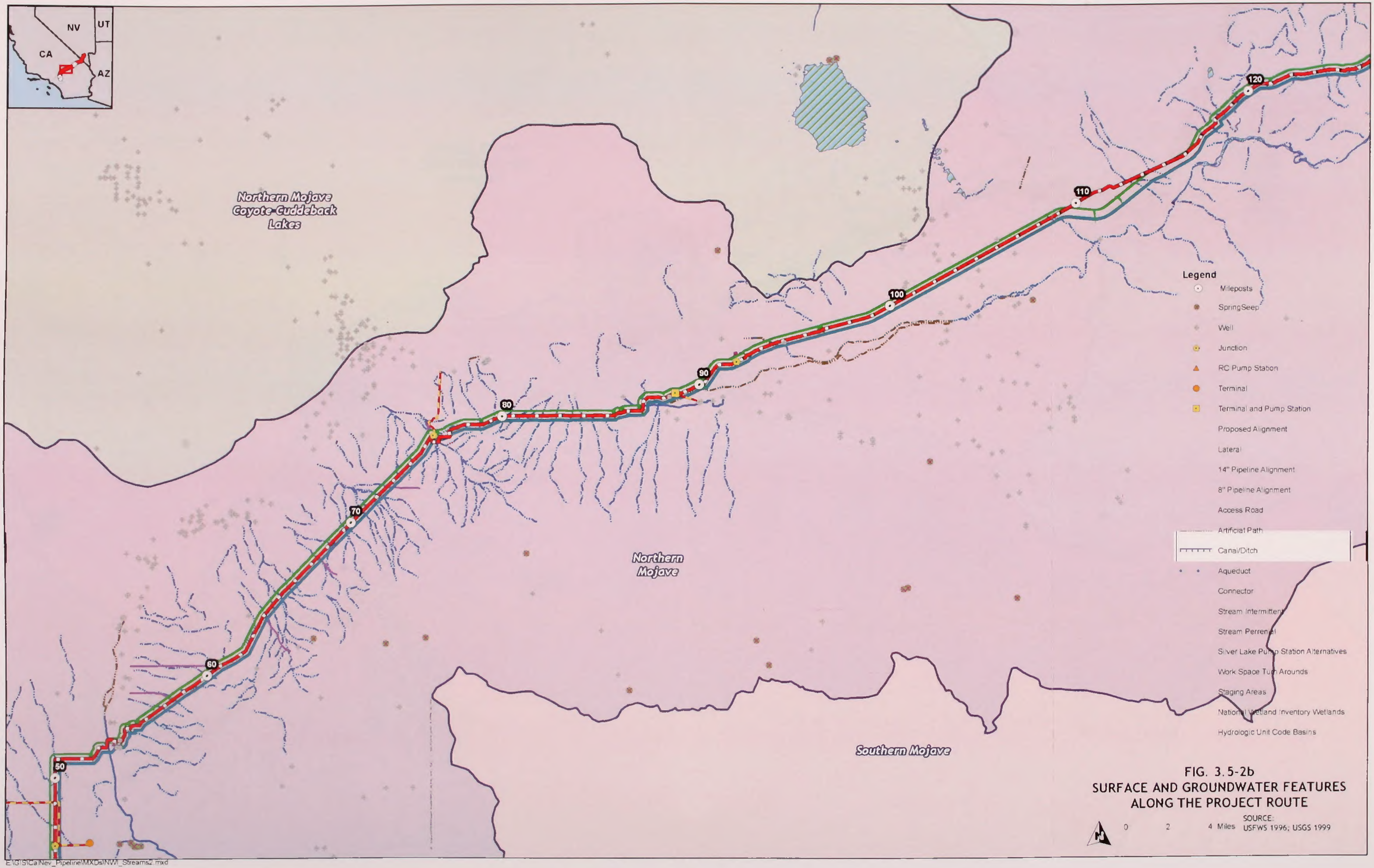

FIG. 3.5-2b
SURFACE AND GROUNDWATER FEATURES ALONG THE PROJECT ROUTE

SOURCE:
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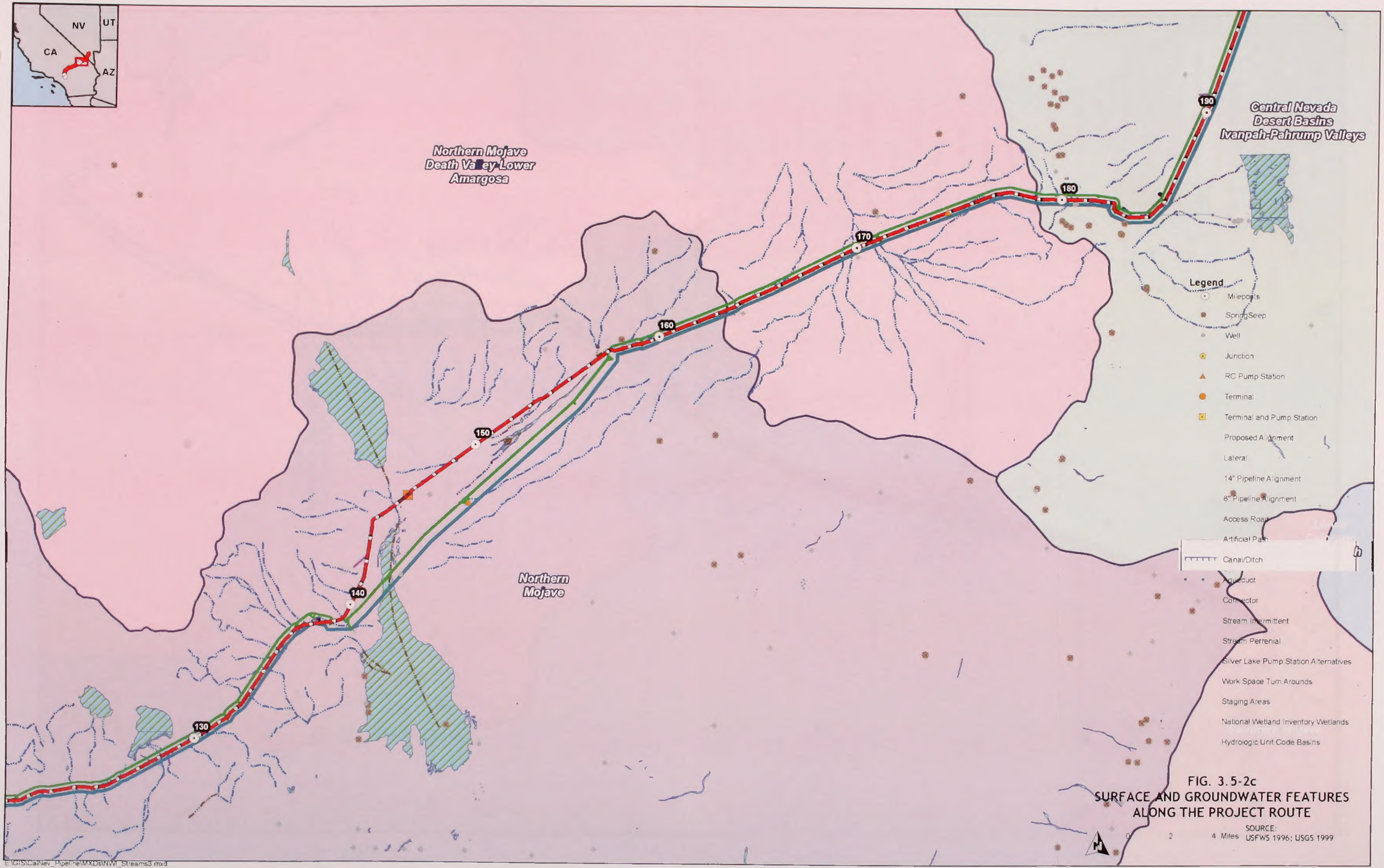

FIG. 3.5-2c
SURFACE AND GROUNDWATER FEATURES ALONG THE PROJECT ROUTE

SOURCE: USFWS 1996; USGS 1999

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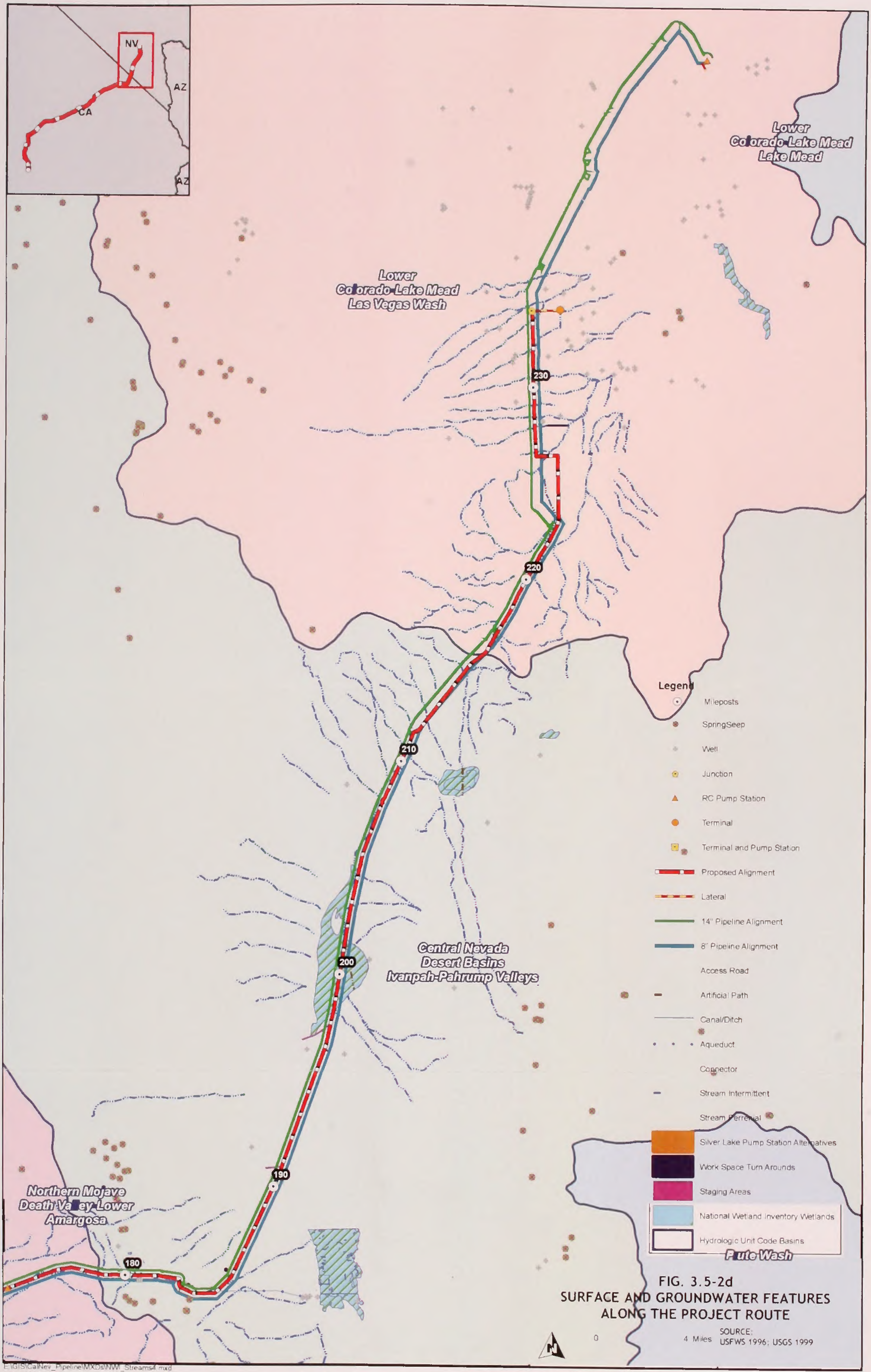

FIG. 3.5-2d
SURFACE AND GROUNDWATER FEATURES
ALONG THE PROJECT ROUTE

SOURCE:
USFWS 1996; USGS 1999

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3.6 Air Quality and Climate

This section provides an evaluation of the air quality issues associated with the Calnev Pipeline Extension Project (hereafter, the Proposed Project). It describes the existing air quality and climate conditions within the air basins that would be affected by the construction and operation of the Proposed Project. This section also outlines applicable regulations, plans, and standards for ambient air quality and greenhouse gas (GHG) emissions and identifies potential impacts, both temporary and permanent, to air quality and climate. Descriptions of the locations of facilities, right-of-ways (ROWs), extra workspaces, and staging areas can be found in Chapter 2. Chapter 2 also includes a description of construction, operation, and maintenance techniques for the Proposed Project as well as a detailed discussion of alternatives.

During the scoping period, meetings were conducted with the public and government agencies to identify issues and concerns. Written comments were also received. The following issues related to air quality and climate were raised and are addressed in this document: (1) address potential impacts from construction and operations; (2) ensure consistency with government plans at all levels, i.e., federal, regional, air basin, sub-regional, county, and local; (3) include all air quality calculations in the Environmental Impact Statement / Environmental Impact Report (EIS/EIR), and consider air quality management district calculation methodologies; (4) identify possible mitigation measures based on air quality management district rules and regulations, e.g., fugitive dust; and (5) analyze potential health risks from emissions from mobile sources, especially those from heavy-duty diesel vehicles.

3.6.1 Affected Environment

This section discusses existing air quality and climate conditions in the vicinity of the Proposed Project. The pipeline ROW primarily traverses undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States Forest Service and the Department of Defense. Lands under the jurisdiction of the State of California, San Bernardino County, and Clark County are also crossed by the pipeline ROW. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

In San Bernardino County, California, the Proposed Project area is located within the South Coast Air Basin (SCAB) and the Mojave Desert Air Basin (MDAB). Air quality management in these basins falls under the jurisdiction of the South Coast Air Quality Management District (SCAQMD) and the Mojave Desert Air Quality Management District (MDAQMD). In Clark County, Nevada, Proposed Project activities would occur within North Ivanpah Valley (Hydrographic Area [HA] 164A), South Ivanpah Valley (HA 164B), Jean Lake Valley (HA 165), and Las Vegas Valley (HA 212). Air quality management in Clark County is administered by the Clark County Department of Air Quality and Environmental Management (DAQEM). A summary of air quality management jurisdictions for the Proposed Project is presented in Table 3.6-1.

Air pollutants originate from a wide variety of human-made and natural sources. Air pollution can directly impact the health of human beings, animals, and plants; reduce visibility; and cause distress to structures and buildings. Air pollution can also potentially contribute to climate change.

Table 3.6-1 Air Quality Management Jurisdictions for the Proposed Project

Facility and Pipeline Segments	State	County	Air Quality Authority	ROW Regulated by Air Quality Authority	Nearest Air Monitoring Sites
Pipeline Milepost (MP) 0 – 23	California	San Bernardino	SCAQMD	23 miles	Crestline, San Bernardino, Fontana
Colton North Terminal					Crestline
Pipeline MP 23 - 195			MDAQMD	172 miles	Hesperia, Phelan, Barstow, Victorville
Cajon Pass Pump Station					San Bernardino, Fontana
Adelanto Junction					Victorville
Barstow Pump Station					Barstow
Proposed Silver Lake Pump Station					
Baker Pump Station					
Cima Road Pump Station					
Valley Wells Pump Station					
Pipeline MP 195 - 233	Nevada	Clark	DAQEM	38 miles	Jean, Greater Las Vegas
Bracken Junction					Greater Las Vegas

Notes:
DAQEM = Department of Air Quality and Environmental Management (Clark County)
MDAQMD = Mojave Desert Air Quality Management District
SCAQMD = South Coast Air Quality Management District

Regional meteorological conditions can influence the transport and dispersion of air pollutants that affect air quality. Regional wind patterns move pollutants between air basins and locations. Pollutants such as ozone and particulate matter (PM) as well as their precursors, can be transported across air basin boundaries. The existing climate, ambient air quality, emissions, and sensitive receptors in the vicinity of the Proposed Project are described in the following sections.

3.6.1.1 Meteorology and Climate

Meteorological conditions govern the movement of air from source to receptor. It also has an effect on the formation of ozone, and rain affects airborne dust. The Proposed Project would be developed in arid regions of Southern California and Nevada. Mountains in these regions trap warm air. Additionally, low wind-speeds and high temperatures in these regions prevent vertical mixing, resulting in a poor air quality. Temperatures in the area of the Proposed Project vary by location and season. Typical average high temperatures in the summer routinely reach over 100 degrees Fahrenheit (°F). Average summertime low temperatures are in the 60s. Average high temperatures in the winter are in the 50s/60s and lows in the 30s.

The SCAB covers an area of 6,745 square miles. The SCAB includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SCAB is a coastal plain with connecting broad valleys, and is bounded to the north and east by mountains with maximum elevations exceeding 10,000 feet. Climate within the SCAB is arid with virtually no rainfall and abundant sunshine during the summer months. It experiences temperature inversions —increasing temperature with increasing altitude— and light winds, which limit the vertical and horizontal dispersion of air pollutants. The combination of poor dispersion and abundant sunshine provide conditions especially favorable to the formation of photochemical smog. Strong, dry, north or northeasterly winds, also known as Santa Ana winds, occur during the fall and winter seasons, helping to disperse air contaminants.

The MDAB covers more than 20,000 square miles. It comprises mountain ranges and long, broad valleys that often contain dry lakes. It is separated from the Southern California coastal and central California Valley regions by mountains. The climate in the MDAB area is characterized by hot, dry summers and mild winters with annual rainfall averaging two to five inches per year. The aridity of the region is influenced by a Pacific subtropical high-pressure system that is typical along the California coast. Cool, moist coastal air is blocked by the San Gabriel and San Bernardino mountain range. The prevailing winds in the MDAB are from the west and south. Relatively high daytime temperatures, occasional high winds, and thunderstorms characterize the climate of the Mojave Desert area.

In Clark County, Nevada, the climate is considered arid, characterized by low precipitation, low humidity, and cloudless skies. Summer is marked by hot days and mild nights, with an average daily temperature of nearly 100 °F. Winter temperatures can drop below freezing with average daily temperatures of 40 to 50 °F. Spring and autumn are generally moderate, with average daily temperatures of about 80 °F. Within Las Vegas Valley, daily temperatures range from 75 to 100 °F in summer and from 30 to 60 °F in winter. Due to the rain shadow effect of the Sierra Nevada Range and Spring Mountains to the west, moisture associated with storms originating in the Pacific Ocean rarely reaches the valley. Moist tropical air reaches the area from the southwest from mid to late summer. Thunderstorms frequently occur during the southwest flow period.

3.6.1.2 Air Quality Standards

Air quality is regulated by federal, state, and local agencies. Pursuant to the federal Clean Air Act (CAA), the United States (U.S.) Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for seven primary criteria air pollutants. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings (EPA 2011a). The seven primary criteria air pollutants for which NAAQS have been promulgated are:

- Sulfur dioxide (SO_2);
- Nitrogen dioxide (NO_2);
- Particulate matter with diameters less than or equal to 10 microns (PM_{10})
- Particulate matter with diameters less than or equal to 2.5 microns ($PM_{2.5}$);
- Carbon monoxide (CO);
- Ozone; and
- Lead.

Ozone is not emitted directly from emission sources but is created at near-ground level by a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) (also referred to as reactive organic gases [ROGs]) in the presence of sunlight. As a result, NO_x and VOC are often referred to as ozone precursors and are regulated as a means to prevent ground-level ozone formation. Criteria air pollutant descriptions and health effects are summarized in Table 3.6-2.

Table 3.6-2 Major Criteria Air Pollutant Descriptions and Health Effects

Pollutant	Description and Health Effects
Ozone	High Ozone levels result from VOCs and NO_X emissions from vehicles and industrial sources, in combination with daytime wind flow patterns, mountain barriers, a persistent temperature inversion, and intense sunlight. Health effects include: • Aggravation of respiratory and cardiovascular diseases; • Impairment of cardiopulmonary function; and • Eye irritation.
NO_2	NO_2 emissions are primarily generated from the combustion of fuels. Health effects include: • Risk of acute and chronic respiratory disease
CO	CO is a product of incomplete combustion, principally from automobiles and other mobile sources of pollution. Industrial combustion source, wood-burning stoves and fireplaces can also be measurable contributors. Health effects include: • Impairment of oxygen transport in the bloodstream; • Aggravation of cardiovascular disease; • Impairment of the central nervous system; • Fatigue, headache, confusion, dizziness; and • Death at high levels of exposure.
SO_2	SO_2 is produced when any sulfur-containing fuel is burned. Natural gas contains trace amounts of sulfur, while fuel oils contain much larger amounts. Health effects include: • Aggravation of respiratory disease; • Reduced lung function; and • Eye irritation.
PM_{10} and $PM_{2.5}$	Particulates in the air are caused by a combination of wind-blown fugitive or road dust particles that come from fuel combustion in motor vehicles and industrial sources, residential and agricultural burning, and from the reaction of NO_X, oxides of sulfur (SO_X), and organics. Health effects include: • Aggravation of respiratory disease; • Reduced lung function; • Cough irritation; and • Lung irritation.
Lead	Lead gasoline additives, non-ferrous smelters, and battery plants were historically significant contributors to atmospheric lead emissions. Legislation has since reduced lead emissions. Health effects include: • Impairment of central nervous system
VOCs	VOCs are a portion of total organic compounds or gases, excluding methane (CH_4), ethane, and acetone (due to low photochemical reactivity). These compounds are regionally important due to their involvement in the photochemical reaction that produces ozone. Some VOCs are also hazardous air pollutants. Health effects include: • Impairment of central nervous system; • Eye, nose, and throat irritation; and • Fatigue, headache, confusion, and dizziness.

Source: California Air Resources Board (CARB) 2005

NEPA air quality analysis considers the following three regulatory thresholds:

- General Conformity applicability thresholds, which vary because the Proposed Project traverses three different areas with different attainment status.
- Prevention of Significant Deterioration (PSD) permit applicability thresholds, which for this project is 250 tons per year for the criteria pollutants. This threshold applies to the Proposed Project because the project would not include any sources that are among the

28 source categories listed in Section 169 of the Clean Air Act. This regulatory threshold only applies to project operation and only applies to direct project emissions, and does not apply to secondary emissions, such as fugitive dust emissions.

- Project would cause air quality impacts in exceedance of the NAAQS.

If the project were to exceed either of the first two of these regulatory thresholds then there could potentially be direct, adverse impacts which would require a further refined impact and mitigation analysis in order to demonstrate that no impacts would occur based on the potential to cause exceedances of the NAAQS.

California and Nevada have established additional and/or more stringent ambient air quality standards (compared to Federal NAAQS) for some of these criteria pollutants, as well as ambient air quality standards for sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. Federal NAAQS and California Ambient Air Quality Standards (CAAQS), and Nevada state ambient air quality standards are summarized in Table 3.6-3.

Table 3.6-3 Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards(1)	Nevada Standards(2)	Federal Standards (NAAQS)(2)	
				Primary	Secondary
Ozone	1-hour	0.09 ppm (180 µg/m^3)	0.12 ppm(3) (235 µg/m^3)	0.12 ppm (235 µg/m^3)	Same as primary
	8-hour	0.07 ppm (137 µg/m^3)	0.08 ppm (157 µg/m^3)	0.075 ppm(4) (147 µg/m^3) 0.08 ppm(5) (157 µg/m^3)	Same as primary
PM_{10}	24-hour	50 µg/m^3	150 µg/m^3 (6)	150 µg/m^3 (6)	Same as primary
	Annual	20 µg/m^3	50 µg/m^3	--	--
$PM_{2.5}$	24-hour (3)	--	--	35 µg/m^3 (7)	Same as primary
	Annual	12 µg/m^3	--	15 µg/m^3 (8)	Same as primary
CO	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	--
	1-hour	20 ppm (23 µg/m^3)	35 ppm (40 mg/m^3)	35 ppm (40 mg/m^3)	--
NO_2	Annual	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary
	1-hour	0.18 ppm (339 µg/m^3)	---	0.10 ppm(9) (189 µg/m^3)	Same as primary
SO_2	Annual	--	0.03 ppm (80 µg/m^3)	0.03 ppm (80 µg/m^3)	--
	24-hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	0.14 ppm (365 µg/m^3)	--
	3-hour	--	0.50 ppm (1300 µg/m^3)	--	0.50 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	--	0.075 ppm(10) (196 µg/m^3)	--
Lead	30-Day	1.5 µg/m^3	--	--	Same as primary
	Quarterly	---	1.5 µg/m3	1.5 µg/m^3	Same as primary
	3-Month	---	---	0.15 µg/m^3 (11)	Same as primary
Sulfates	24-hour	25 µg/m^3	--	--	--
H_2S	1-hour	0.03 ppm (42 µg/m^3)	--	--	--
VRP	8-hour	See Note 12	--	--	--
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m^3)	--	--	--

Sources: 40 Code of Federal Regulations (CFR) Part 50, 17 California Code of Regulations (CCR) §§ 70200, Section11 of Clark County Air Regulations, EPA 2011a

Notes:

ppm = parts per million

µg/m^3 = micrograms per cubic meter

VRP = Visibility Reducing Particles

(1) Standards for ozone, CO, SO_2 (1 and 24 hour), NO_2, PM_{10}, $PM_{2.5}$, and VRP are values that are not to be exceeded. All others are not to be equaled or exceeded.

(2) Short-term standards (averaging times of 24 hours or less) for CO and SO_2 are not to be exceeded more than once per year.

(3) Standard attained when expected no. of days/year with maximum hourly avg. concentration above standard is equal to or less than one.

(4) 2008 standard. 3-year average of 4th highest daily maximum 8-hour average concentration over each year must not exceed 0.075 ppm.

(5) 1997 standard. 3-year average of 4th highest daily maximum 8-hour average concentration over each year must not exceed 0.075 ppm. This standard will remain in place as the EPA addresses the transition from the 1997 standard to the 2008 standard.

(6) Not to be exceeded more than once per year on average over 3 years.

(7) 3-year average of the 98th percentile of 24-hour concentrations at each monitor within an area must not exceed 35 μg/m^3.

(8) 3-year average of weighted annual mean concentrations.

(9) The 3-year average of the 98th percentile of the daily maximum 1-hour average must not exceed 0.10 ppm.

(10) The 3-year average of the 99th percentile of the daily maximum 1-hour average must not exceed 0.075 ppm.

(11) Standard is based on rolling 3-month average.

(12) Extinction coefficient of 0.23 per kilometer --- visibility of 10 miles or more due to particles when relative humidity is less than 70 percent

In general, an area is designated attainment if the concentration of a particular air contaminant does not exceed its standard. Likewise, an area is designated non-attainment for an air contaminant if the related standard is violated. Where not enough ambient data is available to support designation as either attainment or non-attainment, the area can be designated as unclassified. An area formerly nonattainment for a specific pollutant that has demonstrated attainment with the applicable is designated a maintenance area for that pollutant. An unclassified area is normally treated as an attainment area for regulatory purposes. An area could be attainment for one air contaminant while non-attainment for another, or attainment for the federal standard, and non-attainment for the same air contaminant.

As indicated above, a network of ambient air quality monitoring stations has been established by EPA and state and local agencies to measure and track the background concentrations of criteria pollutants. A summary of the available background air quality concentrations in the regions surrounding the Proposed Project area is presented in Table 3.6-4.

Hazardous air pollutants (HAPs), also referred to as toxic air contaminants (TACs), are pollutants that are known or suspected to cause acute or long-term serious health effects such as cancer, reproductive effects or birth defects, or adverse environmental impacts. The EPA manages a list of hazardous air pollutants and the CARB oversees contaminants defined in California's AB 1807 and/or AB 2588. Diesel PM, benzene, and 1,3-butadiene are the three pollutants, all largely from mobile sources, that contribute the most to baseline ambient risks. Ambient air quality standards, in general, have not been established for these pollutants. However, federal, state, and local regulations and guidelines have been established to reduce their release to the atmosphere. These substances are managed on a case-by-case basis depending on the quantity and type of emissions and proximity of potential receptors.

3.6.1.3 Existing Ambient Air Quality

High temperature and sunlight typical of summer days throughout the Proposed Project area are prime conditions for ground-level ozone formation. Inversions are characteristic of stagnant air masses during winter months and can prevail for several days. If ozone precursors are present during these periods, high ozone levels may result in source areas or areas downwind. Particulate matter concentration may also increase during these conditions. Natural emissions sources in the Proposed Project area are dust from windstorms and wildfires, which can cause spikes in PM levels.

Violations of federal and state air quality standards for ozone, PM, and CO have occurred historically in the Proposed Project area. Although substantial progress has been made towards controlling these pollutants, violations of ambient air quality standards for ozone and particulate matter are persistent in southern California. A summary of the air quality designations and the attainment status within the Proposed Project area is described below and summarized in Table 3.6-5.

South Coast Air Basin

Activities of the Proposed Project in the SCAB would occur within San Bernardino County. The SCAB, which includes a portion of southwestern San Bernardino County, has some of the worst air pollution in the nation. The air quality in San Bernardino County results from a unique combination of factors. Pollutants are emitted by various sources (stationary point sources, linear mobile sources and dispersed area sources), they are transported by prevailing winds horizontally and they are oftentimes chemically or physically modified in transit (City of Colton 1992).

The unfavorable combination of meteorology, topography, and emissions from the Los Angeles urban area results in the SCAB having the worst air quality in the United States. Despite the substantial improvement in air quality over the past few decades, some areas in the SCAB still exceed the NAAQS for ozone more frequently than any other area of the United States (SCAQMD 2007). With respect to NAAQS, the SCAB is designated attainment/unclassified for CO, lead, NO_2, and SO_2, extreme non-attainment for ozone, serious non-attainment for PM_{10}, and non-attainment for $PM_{2.5}$. The basin is also classified as a CO and NO_2 maintenance area due to previous nonattainment designations. With respect to CAAQS, the SCAB is designated as attainment/unclassified for CO, H_2S, lead, SO_2, sulfate, vinyl chloride, and visibility reducing particles; and non-attainment for ozone, NO_2, PM_{10}, and $PM_{2.5}$.

Mojave Desert Air Basin

With respect to NAAQS, the MDAB is considered attainment/unclassified for all air pollutants, except PM_{10} and ozone. The portion of western San Bernardino County within the Western Mojave Desert Ozone Non-attainment Area is designated as moderate nonattainment for the ozone NAAQS (all other portions of the basin are considered unclassified/attainment for the ozone NAAQS). All parts of San Bernardino County in the MDAB are also designated moderate nonattainment for the PM_{10} NAAQS.

With respect to CAAQS, the MDAB is considered attainment/unclassified for CO, H_2S, lead, NO_2, SO_2, sulfate, and visibility reducing particles. All parts of San Bernardino County within the MDAB are designated nonattainment for the ozone and PM_{10} CAAQS. The southwestern portion of San Bernardino County in the Western Mojave Desert Ozone Non-attainment Area is also designated as nonattainment for the $PM_{2.5}$ CAAQS. All other portions of the basin are considered unclassified/attainment for the $PM_{2.5}$ CAAQS.

Table 3.6-4 Regional Background Air Quality Concentrations in the Proposed Project Area

	Air Quality Measurements[(1)]													
	PM_{10} (µg/m³)		$PM_{2.5}$ (µg/m³)		SO_2 (ppm)				CO (ppm)		NO_2 (ppm)		Ozone (ppm)	
Location	Annual	24-hour	Annual	24-hour (2)	Annual	24-hour	3-hour	1-hour	8-hour	1-hour	Annual	1-hour	8-hour (3)	1-hour
San Bernardino County, California														
Barstow	29	93	--	--	--	--	--	--	1.2	1.4	0.017	0.081	0.09	0.096
Crestline	27	46	--	--	--	--	--	--	--	--	--	--	0.12	0.144
Phelan	--	--	--	--	--	--	--	--	--	--	--	--	0.099	0.116
Victorville	32	285	8.4	13.0	0.001	0.002	0.005	0.006	0.9	1.4	0.015	0.074	0.089	0.104
Mojave National Preserve	--	--	--	--	--	--	--	--	--	--	--	--	0.086	0.097
Fontana	42	75	12.4	23.4	0.002	0.003	0.005	0.006	0.8	1.3	0.020	0.075	0.109	0.147
Hesperia	25	81	--	--	--	--	--	--	--	--	--	--	0.098	0.117
Clark County, Nevada														
Jean	14	96	4.9	12.9	--	--	--	--	--	--	--	--	0.074	0.079
Las Vegas	31	120	9.1	22.5	0.001	0.002	0.002	0.006	4.2	5.1	0.016	0.064	0.077	0.091

Source: EPA 2011b

Notes:

m³ = cubic meters

ppm = parts per million

(1) Data for 2008. Except where noted, short-term concentrations listed are on the highest concentrations measured.

(2) The 24-hour concentration listed is the 98th percentile measurement.

(3) The 8-hour concentration listed is the fourth-highest measurement.

Table 3.6-5 Attainment Status within the Proposed Project Area

Pollutant	San Bernardino County, California SCAB		San Bernardino County, California MDAB		Clark County, Nevada
	NAAQS	CAAQS	NAAQS	CAAQS	NAAQS
CO	A/M	A/U	A/U	A/U	A/M[1] A/U[2]
Lead	A/U	A/U	A/U	A/U	A/U
NO$_2$	A/M	NA	A/U	A/U	A/U
Ozone	Extreme NA	NA	Moderate NA[3] A/U[4]	NA	Moderate NA
PM$_{10}$	Serious NA	NA	Moderate NA	NA	Serious NA[5] A/U[6]
PM$_{2.5}$	NA	NA	A/U	NA[3] A/U[4]	A/U
SO$_2$	A/U	A/U	A/U	A/U	A/U
Sulfates	--	A/U	--	A/U	--
H$_2$S	--	A/U	--	A/U	--
Vinyl Chloride	--	A/U	--	A/U	--
Visibility Reducing Particles	--	A/U	--	A/U	--

Sources: 40 CFR Part 50; 17 CCR §§ 70200.

Notes:

A/M = attainment/maintenance area

A/U = attainment and/or unclassifiable area

NA = nonattainment area

(1) In 2010, Hydrographic Area (HA) 212 in Clark County (Las Vegas) was redesignated as an attainment area and is now designated as a CO maintenance area.

(2) HAs 164A, 164B, and 165 in Clark County are designated as attainment areas and are not part of the CO maintenance area.

(3) Includes areas in the Western Mojave Desert Ozone Non-attainment Area .

(4) Portions of the MDAQMD outside of the Western Mojave Desert Ozone Non-attainment Area are designated as unclassifiable/attainment.

(5) HA 212 in Clark County (Las Vegas) is designated as a non-attainment for PM$_{10}$.

(6) HAs 164A, 164B, and 165 in Clark County are designated as attainment for PM$_{10}$.

Clark County, Nevada

With respect to NAAQS, Clark County is designated attainment/unclassified for CO, lead, NO$_2$, PM$_{2.5}$, and SO$_2$. The county is designated as non-attainment for ozone. The Las Vegas Valley portion of Clark County (HA 212) also is designated serious non-attainment for PM$_{10}$. All other parts of Clark County are designated as attainment for PM$_{10}$. HA 212 was redesignated as a CO attainment area in 2010 and is now classified as a CO maintenance area. Ivanpah and Jean Lake Valleys in Clark County (HAs 164A, 164B, and 165) are not part of this CO maintenance area.

The primary contributor of PM$_{10}$ throughout Las Vegas Valley is fugitive dust, both human caused and naturally occurring in the desert environment. The major human-made sources of PM$_{10}$ emissions in the valley are paved and unpaved roads, construction activities; industrial and commercial facilities, motor vehicle exhaust, and disturbed vacant land.

3.6.1.4 Existing Emissions

Existing emission sources in the Proposed Project area include a wide range of stationary sources, mobile sources, and smaller sources that are distributed throughout the region. Rural and undeveloped areas may include natural emission sources such as windstorms or wildfires and human-made emissions from off-road or off-highway vehicle use, especially on BLM lands. Mobile sources are commonplace throughout the developed areas, including on-highway motor vehicles, heavy mobile equipment used for off-road purposes (e.g., construction equipment), aircraft, and railroad locomotives. The existing emissions are quantified and discussed in Section 3.18, Cumulative Scenario and Impacts.

Greenhouse Gases

Gases that trap heat in the atmosphere are often referred to as GHGs, which are emitted into the atmosphere through natural processes and human activities. There appears to be a close relationship between the concentration of GHGs in the atmosphere and global temperatures. Human-made emissions of GHGs are likely to contribute further to continued increases in global temperatures, with probable impacts including: increased drought, flooding, heat waves and sea rise (Intergovernmental Panel on Climate Change [IPCC] 2007). In addition, global warming can make air pollution worse because warmer temperatures accelerate the formation of ozone and other pollutants.

The principal GHGs that enter the atmosphere because of human activities are listed below.

- Carbon dioxide (CO_2) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). CO_2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- Methane (CH_4) is emitted during the combustion, production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- Nitrous oxide (N_2O) is emitted during agricultural and industrial activities, as well as from solid waste, and combustion of fossil fuels (in small amounts).
- Fluorinated Gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6), are synthetic, powerful GHGs that are emitted from a variety of industrial processes. GHG emissions from these sources are typically found in refrigerants, fire suppression equipment, and electric switching equipment, respectively. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but are considered as potent GHGs due to very high global warming potentials (GWPs).

Emissions of CO_2 occur largely from combustion of fossil fuels. The major categories of fossil fuels combustion CO_2 sources can be broken into sectors for residential, commercial, industrial, transportation, and electricity generation. The transportation sector includes all motor gasoline and diesel fuel combustion, and the GHG emissions of this sector are not split into activities or uses (i.e., there is no separate estimate for the level of GHG emissions caused by gasoline or diesel fuel combustion-related to construction activities). Other GHG emissions such as CH_4

and N_2O are also tracked by state inventories but occur in much smaller quantities. The global warming potential of methane is about 21 times that of CO_2. When quantifying GHG emissions, the different global warming potential of GHG pollutants are usually taken into account by normalizing their rates to an equivalent CO_2 emission rate (CO_2e).

Many GHGs have lifetimes of decades or even centuries in the atmosphere, so the problem cannot be eliminated quickly. Thus, the problems we are experiencing today do not accurately represent the full effects we may see years from now based on current levels of GHGs (CARB 2009). California and Nevada have demonstrated willingness to address GHG emissions and global climate change through research, adaptation and inventory reduction.

California is the fifteenth largest emitter of GHGs on the planet, representing about two percent of the worldwide emissions (CARB 2008a). Statewide emissions of GHG are summarized in Table 3.6-7. In response, the California Legislature finds that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment" (California Health and Safety Code, §. 38500, division 25.5, part 1).

Table 3.6-7 California Greenhouse Gas Emissions

	Greenhouse Gas Emissions (million metric tons CO_2e)						
Emission Inventory Category	**1990**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Residential	29.7	28.3	29.3	28.1	28.5	28.6	28.4
Commercial	14.4	13.1	13.2	12.7	13.0	13.2	14.7
Industrial[1]	103.0	102.4	97.1	97.2	97.0	100.4	99.4
Transportation	150.7	178.0	181.7	184.3	184.1	183.8	175.0
In-State Electricity Generation	49.0	49.1	57.4	51.8	56.3	55.2	55.1
Agriculture & Forestry	16.9	28.7	29.0	29.2	30.1	28.5	28.2
Other	1.3	12.7	13.6	14.2	14.9	15.3	15.7
Subtotal (without Electricity Imports)	*365.0*	*412.3*	*421.3*	*417.5*	*424.0*	*425.0*	*416.5*
Electricity Imports	61.6	60.8	62.6	59.2	51.4	55.9	61.2
Gross Total	**433.3**	**473.1**	**483.9**	**476.7**	**475.3**	**480.9**	**477.7**
Foresty Sinks	-6.7	-4.3	-4.3	-4.2	-4.0	-4.1	-4.0
Net Total	**426.6**	**468.8**	**479.6**	**472.5**	**471.3**	**476.8**	**473.7**

Sources: CARB 2007, CARB 2010a

Note:

CO_2e = equivalent CO_2 emission rate

(1) Includes landfills

In December 2008 the Nevada Division of Environmental Protection (NDEP) published the Nevada Statewide Greenhouse Gas Emissions Inventory and Projections, 1990-2020. Analysis of Nevada's GHG emissions indicate that for 2005, the most recent year of historical data, Nevada's statewide emissions totaled approximately 56.3 million metric tons of carbon-dioxide equivalent emissions, an amount approximately equal to 0.8 percent of total U.S. GHG emissions in that year. CO_2 represented approximately 91 percent of Nevada's GHG emissions, with CH_4, N_2O, and HFCs/PFCs representing approximately 4, 3, and 2 percent, respectively. SF_6 emissions accounted for less than 0.5 percent of total emissions in 2005 (NDEP 2008).

Together, the combustion of fossil fuels for electrical generation and transportation accounted for approximately 78 percent of Nevada's gross GHG emissions in 2005. Emissions in the residential, commercial and industrial sectors, most of which are associated with space and process heating, constituted approximately 12 percent of total emissions. Industrial process emissions (derived from non-combustion based emissions) comprised another 5 percent of emissions in 2005, and the emissions associated with agriculture, landfills and wastewater management facilities, and emissions from the fossil fuel industry together accounted for the remaining 6 percent (NDEP 2008). Nevada has also been involved in Regional GHG efforts, such as the Western Climate Initiative (WCI) (Observer Member status) and the Climate Registry.

3.6.2 Applicable Regulations, Plans, and Policies

Emissions limitations are imposed upon sources of air pollutants by rules and regulations promulgated by the federal, state or local agencies. Mobile sources of air pollutants and exhaust from off-road equipment are managed by federal and state agencies through emission performance standards and fuel formulations requirements. Portable sources and temporary activities that cause emissions of air contaminants are also managed through federal, state and local programs. This section summarizes the applicable regulations related to the Proposed Project.

3.6.2.1 Federal

The EPA implements and enforces the requirements of most federal environmental laws. EPA Region 9 administers federal air programs in California and Nevada. The CAA , most recently amended in 1990, provides EPA with the legal authority to regulate air pollution from stationary and mobile sources. The EPA has authority over conformity issues in areas that do not meet federal air quality standards, and the Federal Land Managers have review authority over any new projects that may affect federal Class I areas as defined in 40 CFR 51.166.

40 CFR 51 Subpart W and 40 CFR Part 93 Subpart B: General Conformity

The General Conformity Rule requires federal agencies to ensure that actions taken by those agencies conform to the applicable State Implementation Plan (SIP). General Conformity regulations apply only to direct and/or indirect emissions caused by the actions that occur in areas designated as non-attainment or maintenance areas with respect to NAAQS. If the applicable emissions exceed *de minimis* thresholds outlined in the General Conformity Rule, then the federal agency would prepare a General Conformity Determination for public comment. The General Conformity Determination would outline the methodology by which proposed emissions would conform to the SIP, such as:

- Emissions are specifically identified and accounted for in the SIP; or
- Emissions from are fully offset or a similarly enforceable measure that creates emissions reductions so that there is no net increase in emissions.

Green House Gas Under the Clean Air Act: Public Health and Welfare

On April 2, 2007, in Massachusetts versus EPA, 549 US 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the CAA. The Court held that the EPA must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA was required to follow the language of section 202(a) of the CAA. The Supreme Court decision resulted from a petition for rulemaking under section 202(a) filed by more than a dozen environmental, renewable energy, and other organizations (EPA 2011c).

After a thorough examination of the scientific evidence on the causes and impacts of current and future climate change as well as other effects of GHGs, the EPA concluded that the science compellingly supports a positive endangerment finding for both public health and welfare. The EPA relied heavily upon the major findings and conclusions from recent assessments of the United States Climate Change Science Program and the Intergovernmental Panel on Climate Change. The EPA proposed this endangerment finding after considering both observed and projected future effects of climate change, key uncertainties, and the full range of risks and impacts to public health and welfare occurring within the United States.

On April 17, 2009, the EPA proposed to find that GHGs in the atmosphere threaten the public health and welfare of current and future generations. The EPA is also proposing to find that GHG emissions from new motor vehicles and new motor vehicle engines are contributing to the concentration of GHGs in the atmosphere.

This action is being taken under section 202(a) of the CAA, and the proposal has been signed with two distinct findings regarding GHGs under this section:

- *Endangerment Finding:* The EPA is proposing to find that the current and projected concentrations of the following six key GHGs in the atmosphere threaten the public health and welfare of current and future generations: CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6.
- *Cause or Contribute Finding:* The EPA is further proposing to find that the combined emissions of CO_2, CH_4, N_2O, and HFCs from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key GHGs and hence to the threat of climate change.

This proposed action, as well as any final action in the future, would not itself impose any requirements on industry or other entities. An endangerment finding under one provision of the CAA would not by itself automatically trigger regulation under the entire Act. The public was able to comment on the proposed endangerment and cause or contribute findings for 60 days following publication in the Federal Register (EPA 2011c). It is important to point out that this ruling is specifically related to automobile emissions. However, additional federal regulations concerning GHG are currently under discussion and likely to come from the legislature in the near future (e.g., the Waxman-Markey Bill).

San Bernardino National Forest Land Management Plan

The San Bernardino National Forest Land Management Plan (U.S. Forest Service [USFS] 2005) includes the following two air quality strategies: Air 1, Minimize Smoke and Dust; and Air 2, Forest Air Emissions. Air 1 is applicable to the Proposed Project. It requires the control and reduction of smoke and fugitive dust to protect human health, improve safety, and reduce or eliminate environmental impacts. Air 1 proposes to (1) incorporate visibility requirements into project plans and (2) use emission reduction techniques.

3.6.2.2 State

California

California Health and Safety Code § 41700

The Health and Safety Code prohibits the discharge of air pollutants that cause injury, detriment, nuisance or annoyance to the public. The air quality management districts implement this requirement.

California Clean Air Act, California Health and Safety Code § 42300 et seq.

The California CAA of 1988 provides for air quality planning and regulation independent of federal regulations. CARB is the state's lead air quality agency and adopts standards for the CAAQS, some of which are more stringent than NAAQS. CARB is responsible for the attainment and maintenance of NAAQS and CAAQS, oversees the operation of local air quality districts, and is responsible for motor vehicle air pollution control. CARB also assists the individual air districts with air quality monitoring as well as planning activities such as performing air pollutant emission inventories and air quality modeling.

Under delegation from the EPA, CARB and the individual air districts have the primary authority for managing air quality in California.

CARB Off-Road Mobile Sources Emissions Reduction Program

The California CAA mandates that CARB achieves the maximum degree of emission reductions from all off-road mobile sources in order to attain the state ambient air quality standards. Off-road mobile sources include construction equipment. Tier 1 standards for large compression-ignition engines used in off-road mobile sources went into effect in California in 1996, and they required unregulated construction equipment of model year 2000 and later to achieve NO_x, VOC, CO and PM_{10} exhaust standards, and for later model years Tier 2 (2003 and later) and Tier 3 (2007 and later) the standards are increasingly stringent. CARB implements a control measure to reduce diesel particulate matter emissions as well as NO_x from in-use (existing) off-road diesel equipment throughout California. Owners and operators of in-use (existing) off-road diesel equipment and vehicles would need to report and meet fleet emissions targets in 2010. This rule would help to ensure that relatively low emitting equipment would be used for construction equipment. The rules for in-use off-road diesel vehicles (CCR Title 12, Chapter 9, Article 4.8, § 2449, et seq.) also include idling limits.

California Global Solutions Act- Assembly Bill 32

In 2006, California enacted the California Global Warming Solutions Act of 2006 (Assembly Bill 32). Assembly Bill 32 mandates that the state report and verify its GHG emissions in order to reduce GHG emissions state wide to 1990 levels by the year 2020. To facilitate this, CARB is required to adopt a state wide emissions limit, adopt regulations to reduce the amount of GHG emissions, and monitor compliance. CARB is the lead agency for implementing Assembly Bill 32, which set the major milestones for establishing the program. CARB met the first milestones in 2007: developing a list of discrete early actions to begin reducing GHG emissions, assembling an inventory of historic emissions, establishing GHG emission reporting requirements, and setting the 2020 emissions limit.

Although CO_2 is the largest contributor to climate change, Assembly Bill 32 references five additional GHGs: CH_4, N_2O, SF_6, HFCs, and perfluorocarbons. Key elements of California's recommendations for reducing its GHG emissions to 1990 levels by 2020 include issues such as:

- Targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard;
- Targeted fees on high GWP gases;
- Additional measures to address emissions from industrial sources. These proposed measures would regulate fugitive emissions from oil and gas recovery and transmission activities; and
- A high GWP mitigation fee, which is anticipated to promote the development of alternatives to GWP chemicals, and improve recycling and removal of these substances when older units containing them are dismantled.

In recognition of the critical role local governments will play in the successful implementation of Assembly Bill 32, CARB has recommended a GHG reduction goal for local governments of 15 percent below today's levels by 2020 to ensure that their municipal and community-wide emissions match the State's reduction target.

Assembly Bill 32 establishes a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of GHGs. It also makes CARB responsible for monitoring and reducing GHG emissions, and continues the existing Climate Action Team to coordinate statewide efforts. The requirements to CARB include:

- Establish a statewide GHG emissions cap for 2020, based on 1990 emissions.
- Adopt mandatory reporting rules for significant sources of GHGs.
- Adopt a plan indicating how emission reductions will be achieved from significant GHG sources via regulations, market mechanisms and other actions.
- Adopt regulations to achieve the maximum technologically feasible and cost-effective reductions in GHGs, including provisions for using both market mechanisms and alternative compliance mechanisms.
- Convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to advise CARB.
- Ensure public notice and opportunity for comment for all CARB actions.
- Prior to imposing any mandates or authorizing market mechanisms, requires CARB to evaluate several factors, including, but not limited to, impacts on California's economy, the environment, and public health; equity between regulated entities; electricity reliability, conformance with other environmental laws, and to ensure that the rules do not disproportionately impact low-income communities.
- Adopt a list of discrete, early action measures.

The Climate Change Scoping Plan is the roadmap to reach the GHG reduction goals required in Assembly Bill 32. This plan calls for an ambitious but achievable reduction in the state's carbon footprint by reducing GHG emissions to 1990 levels, which means cutting approximately 30 percent from business-as-usual emissions levels projected for 2020 or about 15 percent from today's levels (CARB 2010b). The Climate Change Scoping Plan considers the following key strategies:

- *Cap-and-Trade Program:* Broad-based to provide a firm limit on emissions; covers 85 percent of California's emissions: electricity generation, large industrial sources, transportation fuels, and residential and commercial use of natural gas, and provides regional linkage with WCI which allows greater environmental and economic benefits.
- *Transportation:* GHG emission standards for cars; low-carbon fuel standard (10 percent by 2020), better land-use planning (Senate Bill 375), and more efficient delivery trucks, heavy duty trucks and goods movement.
- *Electricity and Energy (imported included):* Improved appliance efficiency standards and other aggressive energy efficiency measures; 33 percent renewables by 2020; increased use of efficient "combined heat and power;" million solar roofs, solar hot water heating; green buildings; and water efficiency.
- *Industry (including cement):* Audit of the 800 largest emission sources in California to identify GHG reduction opportunities; regulations on refinery flaring, and fugitive emissions; considerations for cement to address "leakage."
- *High GWP Gases:* Capture refrigerants and other high GWP gases already in use; reduce future impact through leak-resistant equipment, restrictions on use, and fees.
- *Forestry:* Preserve forest sequestration and voluntary reductions possible from forestry projects.
- *Agriculture:* More efficient agricultural equipment, fuel use and water use through transportation and energy measures; reductions from manure digesters; address impacts on productivity of crops and livestock.
- *Waste and Recycling:* Reduce CH_4 emissions from landfills and move toward high recycling and zero waste.

California Senate Bill 97

Senate Bill 97 required the Governor's Office of Planning and Research (OPR) to prepare, develop and transmit guidelines for the feasible mitigation of GHG emissions or their effects, including, but not limited to, effects associated with transportation or energy consumption. The bill also required the OPR to develop draft CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." Amendments to the state CEQA Guidelines for GHG became effective on March 18, 2010. Some of the most important sections of the CEQA Guidelines amendments are:

- Section 15064: The amendments require a lead agency to make a "good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." The agency may use a quantitative or qualitative analysis (§ 15064.4(a).). This is a change from the originally proposed amendments, which omitted the reference to "scientific or factual data." The guidelines provide a list of factors to be considered in assessing the significance of the impact from GHG emissions, including increases or reductions in GHG caused by the project, the applicable thresholds, and the project's compliance with local, regional, or statewide GHG reduction plans (§ 15064.4(b)).

- Section 15093: The statement of overriding considerations may consider the region-wide or statewide environmental benefits.
- Section 15125: An EIR must discuss any inconsistencies between the Proposed project and regional blueprint plans and plans for GHG emission reduction.
- Section 15126.4: Mitigation measures may include measures in an existing plan or mitigation program, implementation of project features, offsite measures, including offsets or GHG sequestration. Mitigation in a plan may include project-specific mitigation.
- Section 15183: Projects may tier from programmatic-level GHG emissions analysis and mitigation. Section 15183 details what a GHG Emission Reduction Plan should contain. A later project may use the plan for its cumulative impacts analysis.
- Appendix G: "Greenhouse gases" was added to the list of categories.

Nevada

The State of Nevada has three agencies that independently manage their own air quality programs. At the state level the Nevada Division of Environmental Protection, Bureau of Air Quality Planning is responsible for air quality monitoring in all areas of the state except Clark and Washoe Counties. In Nevada, the Proposed Project would be located solely within Clark County. Clark County's air quality regulations are discussed in the next section.

On April 2007, the state of Nevada created the Climate Change Advisory Committee. The Committee, composed of 12 appointed members representing government and industry, was tasked with making recommendations to the Governor on reducing Nevada's GHG emissions and using renewable energy. The final report and recommendations completed in May 2008 evaluated 63 recommendations before reaching consensus on 28 ideas and prioritizing six of those. The recommendations are grouped into six sections: electricity consumption, residential/commercial/industrial, transportation, waste management, agriculture and "other." This "other" category included planning and policy recommendations, such as (i) Develop a State Climate Action Plan; (ii) Streamline Governmental Permitting and Review Process at State and Federal Levels; (iii) Sequestration Initiative; and (iv) Education and Outreach.

3.6.2.3 Local

Three local air quality management districts will be the primary enforcement agencies for the protection of air quality in the Proposed Project area. These districts are SCAQMD, MDAQMD and DAQEM. The potentially applicable air quality rules and regulations that are enforced by each district are summarized below.

Mojave Desert Air Quality Management District

Activities of the Proposed Project in San Bernardino County would be subject to MDAQMD rules and regulations, including:

Rule 1102 - Fugitive Emissions of VOCs from Components at Pipeline Transfer Stations

This rule applies to components at pipeline transfer stations which may be sources of fugitive VOC emissions. Its purpose is to control fugitive emissions of VOCs due to component leaks at facilities involved in the transfer and/or storage of petroleum products, crude oil or natural gas in pipelines.

Rule 403 - Fugitive Dust

A person shall not cause or allow the emissions of fugitive dust from any transport, handling, construction or storage activity so that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source (does not apply to emissions emanating from unpaved roadways open to public travel or farm roads). This exclusion shall not apply to industrial or commercial facilities.

Rule 403.2 - Fugitive Dust Control for the Mojave Desert Planning Area

This rule aims to ensure that the NAAQS for PM_{10} will not be exceeded due to anthropogenic sources of fugitive dust within the Mojave Desert Planning Area, and to implement the control measures contained in the Mojave Desert Planning Area Federal PM_{10} Attainment Plan.

Rule 402 - Nuisance

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Several regional and local climate plans and GHG reduction initiatives have been under development under CARB's guidance. In addition to these programs, California is involved in the Western Climate Initiative (WCI), a multi-state and international effort to establish a cap and trade market to reduce GHG emissions in the Western United States. WCI adopted a goal of an aggregate reduction of 15 percent below 2005 GHG levels by 2020. The MDAQMD is a voluntary participant in the California Climate Action Registry GHG Inventory Certification and has been named a Climate Action Leader for four consecutive years.

South Coast Air Quality Management District

Activities of the Proposed Project in San Bernardino County would also be subject to SCAQMD rules and regulations. Applicable regulations include:

Rule 1149 - Storage Tank and Pipeline Cleaning and Degassing

The purpose of this rule is to reduce VOCs and toxics emissions from roof landings, cleaning, maintenance, testing, repair and removal of storage tanks and pipelines. This rule applies to the cleaning and degassing of a pipeline opened to atmosphere outside the boundaries of a facility, stationary tank, reservoir, or other container, storing or last used to store VOCs.

Rule 403 - Fugitive Dust

The purpose of this rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

This rule limit the visible dust emissions from construction sites, prohibit emissions that can cause a public nuisance, and require the prevention and reduction of fugitive dust emissions. Additionally, depending on the location and size of the construction site(s) fugitive dust control plan(s) may be required to be submitted to SCAQMD for approval before initiating construction. The fugitive dust rules include measures that aim to reduce fugitive dust emissions from specific dust causing activities. These measures may include, adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers and/or ceasing all activities (such as during periods of high winds).

The SCAQMD, a member of the California Climate Action Registry, has voluntarily prepared a GHG inventory based on calendar year 2004, as well as a set of rules for Climate Change (Regulation XXVII), including the Southern California Climate Solutions Exchange (Rule 2701), and the Greenhouse Gas Reduction Program (Rule 2702).

Clark County Department of Air Quality and Environmental Management

The Clark County DAQEM has been delegated the authority, under the provisions of Nevada Revised Statute 445B.500 and by direction of the Clark County Board of County Commissioners, to implement and enforce an air pollution control program in Clark County, Nevada. DAQEM applies and enforces the Air Quality Regulations, which establish requirements for sources who emit or release air contaminants into the atmosphere. Air quality regulations applicable to the Proposed Project include:

Section 41 - Fugitive Dust

This section establishes that any person engaged in activities involving grading, clearing of land, public or private construction, the operation of machines and equipment, the grading of roads, trenching operations, the operation and use of unpaved parking facilities, and operation and use of raceways for motor vehicles shall take all reasonable precautions to abate fugitive dust from becoming airborne from such activities. Reasonable precautions may include sprinkling, compacting, enclosure, chemical, or asphalt sealing, cleaning up, sweeping, or such other measures as the control officer may specify to accomplish satisfactory results. Reasonable precautions are not limited to the conditions agreed upon by the department of air quality and environmental management permit for the Proposed Project.

Section 45 - Idling of Diesel Powered Motor Vehicles

This section sets the rules for diesel powered motor vehicle idling. A person shall not idle the engine of a diesel truck or a diesel bus for more than 15 consecutive minutes.

Section 91 - Fugitive Dust from Unpaved Roads, Unpaved Alleys, and Unpaved Easement Roads

The provisions of this regulation apply to unpaved roads, which includes unpaved alleys, unpaved road easements and unpaved access roads for utilities and railroads which are located in the PM_{10} non-attainment area, including Las Vegas Valley (HA 212).

Section 94 - Permitting and Dust Control for Construction Activities

The purposes of this section are (a) to limit the emission of particulate matter into the ambient air by preventing, controlling, and mitigating fugitive dust from construction activities; and (b) to establish fugitive dust control standards for Clark County, define reasonable precautions for the prevention and control of fugitive dust from all construction activities and to establish thresholds for enforcement of these standards.

Regarding GHG, in September 2008, the Clark County Commission took a step toward reducing GHG emissions by accepting a report with an expansive set of recommendations that focus on the following seven areas of conservation: air quality, water, water reduction and recycling, green building, energy use, transportation and land use/habitat protection (Clark County 2011). The group was asked to study the environmental impact of county facilities, take inventory of current sustainability efforts, make recommendations to reduce energy purchases at the county by 20 percent by 2015 and achieve the 2050 climate stabilization goal of reducing global warming emissions to 80 percent below current levels. None of the recommendations outlined by the Clark County report specifically address GHG emissions from construction or transmission of fuels.

3.6.3 Environmental Consequences

3.6.3.1 Requirements and Focus of NEPA versus CEQA Impact Analyses

Potential Impacts to be Evaluated Under NEPA

Air Quality

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential impacts to air quality have been identified for evaluation:

- Whether the Proposed Project is likely to conform with applicable federal, state, and local air quality laws, ordinances, regulations and standards (discussed as part of construction impacts in AQ-1a and operation and maintenance impacts in AQ-2 below); and
- Whether the Proposed Project is likely to cause new violations of ambient air quality standards or contribute substantially to existing violations of those standards (discussed as part of construction impacts in AQ-1b and operation and maintenance impacts in AQ-2 below).

The evaluation includes a determination of the need for a formal conformity determination under the CAA General Conformity Rule.

Greenhouse Gases

The Council on Environmental Quality (CEQ) issued draft guidance to federal agencies on February 18, 2010, regarding GHG emissions. The guidance states that in an agency's analysis of direct effects of GHG emissions, it would be appropriate to quantify cumulative emissions over the life of the project; discuss measures to reduce emissions, including consideration of reasonable alternatives; and qualitatively discuss the link between such emissions and climate change. In this guidance, the CEQ recommends that if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO_2e GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. The guidance also states that it is not currently useful for the NEPA analysis to attempt to link specific climatological changes to a particular project or emissions as direct linkage is difficult to isolate and to understand. This evaluation is included as AQ-4 below.

CEQA Significance Criteria

Air Quality

Under CEQA, the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to air quality, the relevant CEQA significance criteria provided in Section III of the checklist are based on whether the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan (addressed as part of AQ-1c and AQ-2 below);
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (addressed as part of AQ-1b and AQ-2 below);
- Result in a cumulatively considerable net increase of any criteria pollutant for which the region of the Proposed Project is nonattainment under an applicable federal or state ambient air quality standard. This includes the release of emissions that exceed quantitative thresholds for ozone precursors (addressed as part of AQ-1d and AQ-2 below);
- Expose sensitive receptors to substantial pollutant concentrations (addressed as part of AQ-1e and AQ-2 below); or
- Create objectionable odors affecting a substantial number of people (addressed as AQ-3 below).

SCAQMD and MDAQMD have established emissions thresholds to evaluate air quality impact significance. SCAQMD significance thresholds are presented in Table 3.6-8. MDAQMD significance thresholds, which address construction and operational emissions, are presented in Table 3.6-9. In addition, SCAQMD has developed a Localized Significance Threshold (LST) methodology to assist lead agencies with analyzing localized impacts associated with impacts in the SCAB. The LST methodology is applicable for emissions of NO_x, CO, PM_{10}, and $PM_{2.5}$ in the SCAB.

Table 3.6-8 SCAQMD Emissions Significance Thresholds

Threshold Category	Pollutant	Construction	Operations
Mass Daily Thresholds	NO_X	100 pounds per day (lbs/day)	55 lbs/day
	VOC	75 lbs/day	55 lbs/day
	CO	550 lbs/day	550 lbs/day
	PM_{10}	150 lbs/day	150 lbs/day
	$PM_{2.5}$	55 lbs/day	55 lbs/day
	Lead	3 lbs/day	3 lbs/day
	SO_X	150 lbs/day	150 lbs/day
TAC and Odor Thresholds	TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million; Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Hazard Index ≥ 1.0 (projected increments)	
	Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards	NO_2 (1)	0.18 ppm (1-hour average) 0.03 ppm (annual average)	
	PM_{10}	10.4 $\mu g/m^3$ (24-hour average) 1 $\mu g/m^3$ (annual average)	2.5 $\mu g/m^3$ (24-hour average) 1 $\mu g/m^3$ (annual average)
	$PM_{2.5}$	10.4 $\mu g/m^3$ (24-hour average)	2.5 $\mu g/m^3$ (24-hour average)
	Sulfate	1 $\mu g/m^3$ (24-hour average)	
	CO (1)	20 ppm (1-hour average) 9.0 ppm (8-hour average)	

Source: SCAQMD 2009

Notes:

TAC = toxic air contaminant

(1) SCAQMD is in attainment. The Proposed Project is significant if it causes or contributes to an exceedance of attainment standards.

Table 3.6-9 MDAQMD Emission Significance Thresholds

Air Pollutant	Annual Threshold (tpy)	Daily Threshold (lbs/day)
CO	100	548
NO_x	25	137
VOCs	25	137
SO_x	25	137
PM_{10}	15	82
$PM_{2.5}$	15	82
H_2S	10	54
Lead	0.6	3

Source: MDAQMD 2009

Notes:

Emission thresholds are given as daily and annual values so that multi-phased projects with phases shorter than one year can be compared to the daily value.

tpy = tons per year

Greenhouse Gases

Under CEQA, the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook.* With respect to greenhouse gas emissions, the relevant CEQA significance criteria provided in Section VII of the checklist are based on whether the proposed project would:

- Generate greenhouse gas emissions, either directly or directly, that may have a significant impact on the environment; and
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

In October 2008, CARB published recommended approaches for setting interim significance thresholds for GHG under CEQA for industrial, residential, and commercial projects (CARB 2008b). For industrial projects, CARB has derived an interim threshold of 7,000 metric tons of CO_2e per year for operational GHG emissions and performance standards for GHG emissions associated with construction and transportation activities.

SCAQMD adopted a proposal for interim CEQA GHG significance thresholds. This proposal includes a tiered approach for assessing the significance of GHG emissions from a project. For the purposes of determining whether or not GHG emissions from projects are significant, SCAQMD recommends calculation of project GHG emissions including direct, indirect, and to the extent information is available, life cycle emissions during construction and operation. Under Tier 3 of SCAQMD guidelines, construction emissions would be amortized over the life of the Proposed Project, defined as 30 years, added to the operation emissions, and then compared to the applicable interim GHG significance threshold of 10,000 metric tons of CO_2e per year.

3.6.3.2 Impact Analysis

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under NEPA and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Mitigation measures (MMs) are compiled in Section 3.6.4, Summary of Mitigation.

Proposed Project/Proposed Action (Alternative 1)

Impact AQ-1: Ambient Air Quality Impacts Caused by Construction Activities

Description of Construction Emissions

Construction of the Proposed Project would generate air pollutant emissions, such as equipment and vehicle exhaust and fugitive dust. These emissions would include criteria pollutants and diesel PM. Diesel engines emit a complex mix of pollutants, the most visible of which are very small carbon particles or "soot," known as diesel PM which are a subset of PM_{10}, and $PM_{2.5}$ emissions. In general, pipeline construction is a linear process where work crews and equipment are continually moving with installation of the pipeline. It is currently anticipated that construction activity would occur concurrently at several locations with the following multiple pipeline spreads and work crews:

- Two mainline pipeline spreads;
- Three street work pipeline spreads;
- One hammer bore crew;
- One auger bore crew;
- Three horizontal directional drill crews; and
- Two station work crews.

Given the use of numerous work crews, construction emissions would be spread out over wide intervals of the entire Proposed Project area. Overall, construction activities would occur for approximately eight months, after which they would cease.

During construction, emissions would be generated "on-site" within the boundaries of each work site (e.g., pipeline ROW, pump station). Combustion products would be emitted from diesel and gasoline-powered construction equipment. Fugitive dust would be generated from equipment movement, drilling and trenching, clearing, grading and backfilling activities. Beyond the boundaries of the pipeline ROW and station work sites, air pollutant emissions would also be generated "off-site" by the travel of delivery trucks and worker vehicles on local roads. Combustion products would be emitted from on-road vehicles and fugitive dust would be released from paved and unpaved roads.

Maximum daily and total air pollutant emissions were calculated for each construction pipeline spread and work crew. A summary of the estimated maximum daily construction emissions is presented in Table 3.6-10. These estimates assume that mitigation measures, including dust abatement and road watering efforts, are conducted by the Applicant. This table also includes a comparison of daily emissions to applicable SCAQMD and MDAQMD daily significance thresholds. A summary of the estimated total overall construction emissions is presented in Table 3.6-11. This table also includes a comparison of total emissions to applicable MDAQMD annual significance thresholds. A detailed summary of construction equipment and vehicle usage and associated emission calculations are provided as Appendix C.

Table 3.6-10 Daily Air Pollutant Emissions from Construction Activities of the Proposed Project

Air Basin	Parameter	Daily Emissions pounds per day (lbs/day)					
		VOC	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2
South Coast Air Basin	**Maximum Daily Construction Emissions**						
	Onsite Emissions						
	Street Work Spread Number (No.) 1	40	302	136	31	19	0.34
	Street Work Spread No. 2	40	302	136	31	19	0.34
	Hammer Bore Crew	5.9	61	21	12	4.3	0.07
	Auger Bore Crew	8.8	73	37	13	5.6	0.08
	HDD Crew No. 1	30	318	106	22	14	0.41
	Station Work Crew No. 1	28	183	85	20	12	0.22
	Offsite Emissions						
	Onroad Vehicles	39	300	268	11	9.3	0.43
	Fugitive Dust (Public/Access Roads)	-	-	-	504	52	-

Table 3.6-10 Daily Air Pollutant Emissions from Construction Activities of the Proposed Project

Air Basin	Parameter	Daily Emissions pounds per day (lbs/day)					
		VOC	NO$_x$	CO	PM$_{10}$	PM$_{2.5}$	SO$_2$
	Total of All Activities	190	1,538	789	644	135	1.9
	Average Over 12-Month Period	112	720	376	304	61	0.88
	SCAQMD Daily Significance Threshold	75	100	550	150	55	150
	Exceed Significance Threshold?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**
Mojave Desert Air Basin	**Maximum Daily Construction Emissions**						
	Onsite Emissions						
	Mainline Spread No. 1	144	1,195	513	118	71	1.3
	Mainline Spread No. 2	144	1,195	513	118	71	1.3
	Street Work Spread No. 2	40	302	136	31	19	0.34
	Hammer Bore Crew	5.9	61	21	12	4.3	0.07
	Auger Bore Crew	8.8	73	37	13	5.6	0.09
	HDD Crew No. 2	30	318	106	22	14	0.41
	HDD Crew No. 3	30	318	106	22	14	0.41
	Station Work Crew No. 1	28	183	85	20	12	0.22
	Station Work Crew No. 2	28	183	85	20	12	0.22
	Offsite Emissions						
	Onroad Vehicles	84	657	586	24	21	0.94
	Fugitive Dust (Public/Access Roads)	-	-	-	1,988	202	-
	Total	541	4,486	2,190	2,388	442	5.3
	Average Over 12-Month Period	272	2,216	1,088	1,272	224	2.6
	MDAQMD Daily Significance Threshold	137	137	548	82	82	137
	Exceed Significance Threshold?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**
Clark County	**Maximum Daily Construction Emissions**						
	Onsite Emissions						
	Mainline Spread No. 2	144	1,195	513	118	71	1.3
	Street Spread No. 3	40	302	136	31	19	0.34
	Hammer Bore Crew	5.9	61	21	12	4.3	0.07
	Auger Bore Crew	8.8	73	37	13	5.6	0.08
	HDD Crew No. 3	30	318	106	22	14	0.41
	Station Work Crew No. 2	28	183	85	20	12	0.22
	Offsite Emissions						
	Onroad Vehicles	50	390	348	14	12	0.56
	Fugitive Dust (Public/Access Roads)	-	-	-	1,082	110	-
	Total	306	2,522	1,247	1,313	247	3.0
	Average of 12-Month Period	92	616	320	288	56	0.8

Notes: Total emissions values are based on results presented in Appendix C, on a full decimal-based format. Results displayed on this table may not add up exactly due to rounding.

HDD = horizontal directional drilling

Table 3.6-11 Annual Air Pollutant Emissions from Construction Activities of the Proposed Project

County/State Air Basin	Parameter	Total Emissions (tons per year)					
		VOC	NO$_x$	CO	PM$_{10}$	PM$_{2.5}$	SO$_2$
South Coast Air Basin	Entire Basin	11	90	47	38	7.6	0.11
	General Conformity Applicability Threshold	**10**	**100**	**100**	**70**	**NA**	**NA**
	Exceeds General Conformity Applicability Threshold?	**Yes**	**No**	**No**	**No**	**No**	**No**
Mojave Desert Air Basin	*Inside Western Mojave Ozone Nonattainment Area*	*28*	*230*	*112*	*131*	*23*	*0.27*
	Outside Western Mojave Ozone Nonattainment Area	*5.9*	*48*	*24*	*27*	*4.9*	*0.05*
	Entire Basin	34	278	136	159	28	0.32
	MDAQMD Annual Emission Threshold	**25**	**25**	**100**	**15**	**15**	**25**
	Exceed Significance Threshold?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**
	General Conformity Applicability Threshold	**100**	**100**	**NA**	**100**	**NA**	**NA**
	Exceeds General Conformity Applicability Threshold?	**No**	**Yes**	**No**	**Yes**	**No**	**No**
Clark County	*HAs 164A, 164B, and 165*	*2.0*	*16*	*8.2*	*10*	*1.7*	*0.02*
	HA 212	*7.5*	*61*	*32*	*26*	*5.3*	*0.07*
	Entire County	10	77	40	36	7.0	0.09
	General Conformity Applicability Threshold	**100**	**100**	**100**	**70**	**NA**	**NA**
	Exceeds General Conformity Applicability Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: Total emissions values are based on results presented in Appendix C, on a full decimal-based format. Results displayed on this table may not add up exactly due to rounding.

Impact AQ-1a – Conformity with applicable federal, state, and local air quality laws, ordinances, regulations and standards

The estimated maximum daily emissions of VOC, NO$_x$, CO, PM$_{10}$, and PM $_{2.5}$ during all phases of construction of the Proposed Project are predicted to exceed corresponding SCAQMD and MDAQMD daily significance thresholds.

The majority of VOC, NO$_x$, and CO would be emitted from on-site construction equipment. The vast majority of PM$_{10}$, and PM$_{2.5}$ would be emitted as fugitive dust during vehicle traffic on local roads and Proposed Project access roads. The estimated emissions in Tables 3.6-10 are the absolute peak values, and would be unlikely to occur as it is highly improbable that all construction activities would occur simultaneously during the construction timeframe. In addition, as indicated above, these construction emissions would be generated at numerous locations throughout the Proposed Project area.

Emissions generated from construction activities are anticipated to cause localized temporary increases in ambient air pollutant concentrations. As indicated previously, SCAQMD has developed a LST methodology to analyze localized impacts associated with Proposed Project in the SCAB. The LST methodology was used to assess the significance of impacts caused by emissions of NO_x, CO, PM_{10}, and $PM_{2.5}$ during construction. LST mass rate look-up tables provided in SCAQMD guidance allow for a determination if the daily emissions for proposed construction activities could result in significant localized air quality impacts.

An LST analysis was performed for construction activities expected to have the highest level emissions in the SCAB. Since pipeline construction and other work crew activities would occur at different locations spread out over the length of the line, the LST analysis was performed on the activity most likely to cause the greatest amount of emissions at one single location. For construction activities, the equipment exhaust and fugitive dust emissions include in the LST analysis were limited to those generated on-site (i.e., emissions from off-site travel were not included as they occur at a different location). The results of the LST analyses are presented in Table 3.6-12. A detailed summary of the calculations used to estimate emissions for all construction activities is included in Appendix C. A summary of the calculations used for activity that is predicted to cause the highest daily emissions from street work spreads (i.e., pipe installation) is included in Appendix C.

Table 3.6-12 Comparison of Daily On-Site Construction Emissions to Localized Significance Threshold (LST) Thresholds

Construction Activity	Maximum Daily On-Site Emissions (lb/day)				LST Emission Threshold for Construction (1) (lb/day)			
	CO	NO_X	PM_{10}	$PM_{2.5}$	CO	NO_X	PM_{10}	$PM_{2.5}$
Street Work Spread (Pipe Installation) (2)	52	132	13.0	7.5	863	118	5	4
Hammer Bore Crew (3)	21	61	12.2	4.3	1328	148	14	6
Auger Bore Crew (3)	37	73	13.5	5.6	1328	148	14	6
HDD Crew (3)	106	318	22	14	1328	148	14	6
Station Work Crew (4)	85	183	20	11.9	2423	211	44	12

Notes:

(1) Thresholds for source/receptor areas: Northwest San Bernardino Valley, Southwest San Bernardino Valley, and West San Bernardino Mountains.

(2) LST threshold based on 1-acre site and distance of 25 meters to receptor.

(3) LST threshold based on 1-acre site and distance of 50 meters to receptor.

(4) LST threshold based on 1-acre site and distance of 100 meters to receptor.

Since emissions of NO_x, PM_{10}, and $PM_{2.5}$ are estimated to exceed LST threshold levels for some construction activities, the proposed construction is assumed to have a significant impact under CEQA on air quality of criteria pollutants. Further, the estimated maximum daily emissions of CO, NO_x, VOCs, PM_{10}, and $PM_{2.5}$ during construction of the Proposed Project are predicted to exceed corresponding, regional daily significance thresholds. Mitigation measures to address these impacts are provided below.

Construction emissions from the project would be a direct, adverse impact under NEPA. The impact would be temporary, and would cease at the completion of construction. The emission values in Table 3.6-11 show that annual emissions for NOx, CO, VOCs, and PM10 during construction would potentially exceed their General Conformity applicability thresholds. Therefore, the project would require a formal conformity determination as per the federal Clean Air Act (CAA) General Conformity Rule. The determination would be developed by the Applicant, and then BLM, in consultation with MDAQMD and the EPA would make the final conformity determination.

NO_x and VOC emissions generated from activities in the SCAB would exceed applicable *de minimis* emission thresholds for this ozone extreme nonattainment area; NO_x emissions generated from activities in the Western Mojave Desert Ozone Non-attainment Area would exceed applicable *de minimis* emission thresholds for this ozone moderate nonattainment area; and PM_{10} emissions in the MDAB would exceed applicable *de minimis* emission thresholds for this PM_{10} moderate nonattainment area. A General Conformity Determination needs to demonstrate that direct and indirect emissions associated with a federal action conform to the applicable SIP. There are several ways that conformity can be demonstrated, including, but not limited to:

- The emissions are specifically identified and accounted for in the applicable SIP's attainment or maintenance demonstration.
- The emissions are fully offset within the same nonattainment or maintenance area through a revision to the applicable SIP or a similarly enforceable measure that affects emissions reductions so that there is no net increase in emissions of that pollutant.
- The emissions are determined and documented by the state/local agency primarily responsible for the applicable SIP to result in a level of emissions that, together with all other emissions in the nonattainment or maintenance area, would not exceed the emissions budgets specified in the applicable SIP.

The BLM, as the lead Federal agency, would ensure that the General Conformity Determination is made available for agency and public comment in accordance with the General Conformity Rule. Upon completion of a draft conformity determination, a 30-day notice must be provided to the appropriate EPA regional office, state and local air agencies, and, where applicable, federal land managers, describing the proposed action and the draft conformity determination. Concurrently, a notice must be placed in a daily newspaper regarding the availability of the draft conformity determination. A 30-day period is then required for public comment. The federal agency must then document its responses to all comments on the draft conformity determination. Within 30 days of completion of the final conformity determination, the federal agency must notify the appropriate EPA regional office, state and local air agencies, and where applicable, federal land managers, and make public its final conformity determination by placing a notice in a daily newspaper. The comments and responses on the draft determinations must be provided upon request within 30 days of the final conformity determination.

Impact AQ-1b – Potential to cause new violations of ambient air quality standards or contribute substantially to existing violations of those standards

The Proposed Project would be regulated under permits with the SCAQMD, MDAQMD, and Clark County. These permits would include mitigation measures developed to reduce the impact of construction-related emissions. However, because the Proposed Project would occur in a non-attainment area, it would contribute incrementally to existing violations of air quality standards. These impacts would be temporary, but would be direct, adverse impacts.

Impact AQ-1c – Potential to Conflict with or obstruct implementation of the applicable air quality plan

Because Proposed Project construction PM_{10} emissions in the MDAB would exceed applicable *de minimis* emission thresholds for this PM_{10} moderate nonattainment area, these emissions could conflict with implementation of the existing SIPs available for PM_{10} and $PM_{2.5}$. This conflict would be temporary, and would cease following completion of construction. However, during construction, this impact would be significant under CEQA. Mitigation measure MM AQ-1a, defined below, would require compliance with measures specified in the SIPs, and would reduce this impact to less than significant under CEQA.

Impact AQ-1d – Potential to result in a cumulatively considerable net increase of any criteria pollutant for which the region of the Proposed Project is nonattainment

The evaluation of the potential for the Proposed Project to result in a cumulatively considerable increase in pollutants is evaluated in Section 3.18.6.4.

Impact AQ-1e – Potential to expose sensitive receptors to substantial pollutant concentrations

Sensitive receptors include schools, hospitals, and other sensitive uses. Most of the proposed pipeline route would be located in rural areas that would not be located in close proximity to sensitive receptors. However, portions the pipeline would be constructed in urban areas including approximately 11 miles in the Colton/Rialto area of the SCAB and approximately 10 miles in the Las Vegas metropolitan area. A description of sensitive receptors in the vicinity of the Proposed Project is provided in Sections 3.10 and 3.13. Given that construction activities would be transient and impact specific locations for only limited durations, long-term impacts would not occur. Short-term impacts would be mitigated by implementation of the mitigation measures presented below.

Mitigation Measures

In order to address these impacts, the following mitigation measures would be incorporated into Proposed Project to reduce emissions. In addition, emissions of nonattainment/maintenance pollutants from Proposed Project construction activities are potentially subject to General Conformity Rule requirements. Under this rule, applicable emissions that are not addressed in current SIPs may need to be offset.

- **MM AQ-1a: Construction Fugitive Dust Control Plan.** The Applicant shall prepare a Construction Fugitive Dust Control Plan that describes the fugitive dust control measures that would be implemented and monitored at all locations of Proposed Project construction. This plan shall comply with the mitigation measures described in the Fugitive Dust Control Rules enforced by MDAQMD (Rule 403.2), SCAQMD (Rule 403) and Clark County DAQEM (Section 93 of Clark County Air Quality Regulations), as well as the existing SIP available for PM_{10} and $PM_{2.5}$, and the BLM Fugitive Dust/PM_{10} Emissions Control Strategy for the Mojave Desert Planning Area. The plan shall be submitted to SCAQMD, MDAQMD, Clark County DAQEM, BLM, USFS, and San Bernardino County no less than 60 days prior to the start of construction. The plan shall be incorporated into all contracts and contract specifications for construction work. The plan shall outline the steps to be taken to minimize fugitive dust generated by construction activities by:

- Describing each active operation that may result in the generation of fugitive dust;
- Identifying all sources of fugitive dust, e.g., earth moving, storage piles, vehicular traffic;
- Describing the control measures to be applied to each of the sources identified. The descriptions shall be sufficiently detailed to demonstrate that the best available control measures required by the air quality districts for linear projects are used; and
- Providing the following control measures, in addition to or as listed in the applicable rules but not limited to:
  - Frequent watering or stabilization of excavation, spoils, access roads, storage piles, and other sources of fugitive dust (parking areas, staging areas, other) if construction activity cause persistent visible emissions of fugitive dust beyond the work area;
  - Use of street sweeping and trackout devices at all construction sites. Sweep streets daily (with water sweepers) if visible soil material is carried into adjacent public streets or wash trucks and equipment before entering public streets;
  - Apply chemical soil stabilizers or apply water to form and maintain a crust on inactive construction areas (disturbed lands that are unused for four consecutive days);
  - Cover stockpiles and suspend construction work when winds exceed 30 miles per hour;
  - Pre-watering of soils prior to clearing and trenching;
  - Pre-moisten, prior to transport, import and export dirt, sand, or loose materials;
  - Installing temporary coverings on storage piles when not in use. Cover loads in haul trucks or maintain at least six inches of free-board when traveling on public roads;
  - Dedicating water truck or high/capacity hose to any soil screening operations;
  - Minimizing drop height of material through screening equipment;
  - Reducing the amount of disturbed area where possible; and
  - Planting vegetative ground cover in disturbed areas as soon as possible following construction activities.

The Construction Fugitive Dust Control Plan shall also identify nearby sensitive receptors, such as land uses that include children, the elderly, the acutely ill, and the chronically ill, and specify the means of minimizing impacts to these populations, e.g., by locating equipment and staging areas away from sensitive receptors.

The Applicant or its designated representative shall obtain prior approval from the SCAQMD, MDAQMD and Clark County DAQEM prior to any deviations from fugitive dust control measures specified in the Construction Fugitive Dust Control Plan. A justification statement used to explain the technical and safety reason(s) that preclude the use of required fugitive dust control measures shall be submitted to the appropriate agency for review.

- **MM AQ-1b: Low-Emission Construction Equipment.** All off-road diesel-powered construction equipment with a rating greater than 50 horsepower would be required to utilize engines compliant with EPA Tier 3 or higher non-road engine standards. In addition, all retrofitted construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 2 or Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

- **MM AQ-1c: Construction Emissions Reduction Plan.** The Applicant shall prepare a Construction Emissions Reduction Plan to be incorporated into all contracts and contract specifications for construction work. This plan shall specify all mitigation measures related to construction equipment emission standards/controls as contractual requirements. The plan shall also outline additional specific measures, as contractual requirements, to reduce or eliminate potential impacts associated with construction-related emissions of criteria air pollutants and toxic air contaminants. At a minimum, the plan shall include the following additional specific measures:
  - The low-emission construction equipment requirements outlined in MM AQ-1b;
  - As feasible, reduce emissions of particulate matter and other pollutants by using alternative clean fuel technology such as electric, hydrogen fuel cells, and propane-powered equipment or compressed natural gas-powered equipment with oxidation catalysts instead of gasoline- or diesel-powered engines;
  - Ensure that all construction equipment is properly tuned and maintained and shut off when not in direct use;
  - Prohibit engine tampering to increase horsepower;
  - Locate engines, motors, and equipment as far as possible from residential areas and at least 300 feet from sensitive receptors, such as schools, daycare centers, and hospitals;
  - Provide carpool shuttles and vans to transport construction workers to and from construction sites, thus eliminating some private vehicle trips;
  - Arrange for food catering trucks to visit each site of the Proposed Project twice a day;
  - Reduce construction-related trips of workers and equipment, including trucks;
  - Require that on-road vehicles be less than 10 years old; and
  - Encourage the construction contractors to apply for SCAQMD "SOON" funds. The "SOON" program accelerates clean up of off-road diesel vehicles, such as heavy duty construction equipment. Information on this program can be found at the following website: http://www.aqmd.gov/tao/Implementation/SOONProgram.htm

  Prior to finalization of the plan, the Applicant shall also consult with the SCAQMD, the MDAQMD and the Clark County DAQEM to identify other potential control measures not identified above. The Applicant or its designated representative shall submit this plan and related construction contract specifications to the agencies involved in the environmental review and permitting process for the Proposed Project, to the extent applicable under rules and regulations (BLM, EPA, SCAQMD, MDAQMD, Clark County DAQEM), prior to construction activities.

- **MM AQ-1d: Construction Equipment Documentation.** The Applicant shall prepare and maintain documentation that demonstrates implementation of the proposed emission reduction measures and required mitigation measures. The following documents and/or files shall be submitted to the agencies involved in the environmental review and permitting process for the Proposed Project:

- Inventory of all equipment used during each construction activity. At a minimum, this inventory shall include an equipment description, equipment identification, identification of type of engine(s), and engine emission data; and
- Documentation certifying that the actual emission rates for the engine(s) of each equipment used during construction comply with mitigation measures as required. This documentation shall include EPA or CARB certification of engine emissions, source testing results for specific engines, or an equivalent means of certifying emission rates of air criteria pollutants from this equipment.

Although implementation of MM AQ-1a, MM AQ-1b, MM AQ-1c, and MM AQ-1d would reduce the level of significant impacts from construction of the Proposed Project, Impact AQ-1 would still be significant under CEQA, and would still represent a residual impact under NEPA. Also, even with the implementation of mitigation measures, it is anticipated that General Conformity Determination would be required for Project construction activities in the SCAB and the MDAB.

Impact AQ-2: Ambient Air Quality Impacts Due to the Emission of Air Criteria Pollutants During Operation and Maintenance of the Proposed Project

Description of Operations and Maintenance Emissions

Once construction is complete, operational emissions would result from vehicle use that would be necessary for periodic maintenance, repair, and inspection of components of the Proposed Project. Emissions from the existing pump station and proposed new pump station would be minimal as pipeline pumps are electrically powered.

Chapter 2 summarizes the planned maintenance activities on the Calnev Pipeline System over its lifetime period, including their expected frequency and disturbance area. After the Proposed Project is constructed, there would be three lines in service. Consequently, the Class I operational maintenance activities would increase. Maintenance and inspections activities would include both pipeline and related support facilities, and would be similar throughout the area of the Proposed Project. Aerial and road inspections, as well as the operation of pump stations are considered the main mobile and stationary emission sources during operation and maintenance activities for the Proposed Project.

Class II and III activities (repairs and replacements) also would occur on the Proposed pipeline. A conservative assumption would be that the operations and maintenance activities on the new pipeline would occur at no more than the same frequency as the existing Calnev System.

It is expected that operations related to the Proposed Project would not require new vehicle trips compared to the existing conditions. No new permanent employees would be needed to operate the Proposed Project. Therefore, it is expected that there would be no increase in emissions caused by vehicles for inspection and maintenance for the Proposed Project.

Impact Conclusions

Since estimated operational and maintenance emissions of air criteria pollutants are not expected to increase over current levels, there would be no direct adverse impacts associated with operational emissions of the Proposed Project (Impact AQ-2). Operational emissions would not have a significant impact under CEQA. Therefore, no mitigation measures are proposed for operation and maintenance activities.

Impact AQ-3: Create objectionable odors

Most of the proposed pipeline route would be located in rural areas that would not be located in close proximity to persons who could be impact by objectionable odors. However, portions the pipeline would be constructed in urban areas, including approximately 11 miles in the Colton/Rialto area of the SCAB and approximately 10 miles in the Las Vegas metropolitan area. Given that construction activities would be transient and impact specific locations for only limited durations, long-term impacts would not occur.

Impact AQ-4: Net Emission Increase of Greenhouse Gas Emissions during Construction and Operation of the Proposed Project

The Proposed Project would directly generate GHG emissions during construction and operational activities. CO_2 and CH_4 would be emitted from on-road vehicles and non-road equipment during project construction. In addition, fugitive emissions of SF_6 would potentially be emitted from circuit breakers installed at the new Silver Lake Pump Station. It is estimated that each circuit breaker would contain approximately 700 gal of SF_6. The SF_6 leakage rate for the new breakers is estimated at 0.5 percent per year.

It is anticipated that electricity used for the Silver Lake Pump Station would be predominantly generated from the regional hydro-electric generating station. In addition, a number of solar electric generating stations have been proposed for the Mojave Desert region. Thus, it is possible that over the life of the pipeline, virtually all of the electricity required to operate the pumps at Silver Lake Pump Station would be generated from non-GHG emitting facilities. However, as the identification of exact source(s) of electrical production for the new pump station is not part of the Proposed Project, potential indirect GHG emissions caused by the new pump station were estimated using regional emission factors associated with local electrical grids.

Estimated GHG emissions from temporary construction activities and long-term operations for the Proposed Project are summarized in Table 3.6-13. In this table, a total of approximately 45,000 metric tons of CO_2e GHG emissions from construction were amortized over a 30 year-period. A comparison of annual GHG emissions from the Proposed Project to interim SCAQMD GHG significance thresholds is also included in this table. A detailed summary of the calculations used to estimate GHG emissions from construction activities is included in Appendix C. A detailed summary of the calculations used to estimate GHG operational emissions is included in Appendix C.

Table 3.6-13 GHG Emissions during Operations and Maintenance of the Proposed Project

Parameter	Emission Type	GHG Emissions CO_2 Equivalent (metric tons/year)
Annualized Emissions from Proposed Project	Direct Construction Emissions (1) Direct Operational Emissions	1,500 440

Parameter	Emission Type	GHG Emissions CO_2 Equivalent (metric tons/year)
	Indirect Operational Emissions	4,600
	TOTAL	5,040
SCAQMD Interim GHG Threshold		10,000

Note:

(1) Total of 45,428 metric tons of Co_{2e} GHG emissions from construction were amortized over a 30 year-period.

Since estimated GHG emissions are at or less than the significance threshold levels, the Proposed Project would not have a significant impact under CEQA. The GHG emissions would contribute incrementally to total GHG emissions in the US, but would not create a direct or indirect adverse impact.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to air quality and greenhouse gas emissions associated with the seven route variations are described below:

Bloomington Alternative

The Bloomington Alternative route variation is 0.7 miles shorter than the Proposed route along West Valley Boulevard and Cactus Avenue. Therefore, the construction emissions associated with both hazardous pollutants and greenhouse gas emissions would be reduced in this area. This reduction would be small compared to the overall emissions associated with construction of the Proposed Project, and construction emissions would still be a direct, adverse impact under NEPA, and would be significant under CEQA, even after implementation of mitigation measures AQ-1a, AQ-1b, AQ-1c, and AQ-1d.

The emissions associated with the Bloomington Alternative route would also occur in a different location than the emissions associated with the Proposed Project in this area. Both areas are located in an urban part of the City of Rialto, so the affected environment and regulatory status of air quality would be the same in both areas. However, the emissions could potentially affect a different set of sensitive receptors. Neither route is located adjacent to hospitals or schools, but there is the potential for residences along the Alternative route to include more or fewer sensitive receptors than the Proposed Route.

Overall, the emissions associated with the Alternative route would be reduced as compared to the Proposed Project. However, the potential for emissions that do occur on either route to affect residents who could be sensitive receptors is unknown. Any impacts would be temporary, occurring only during construction, and would be reduced by implementation of mitigation measures MM AQ-1a, AQ-1b, AQ-1c, and AQ-1c.

Rialto Alternative

The Rialto Alternative route variation is 2.7 miles longer than the Proposed route through the City of Rialto. Therefore, the construction emissions associated with both hazardous pollutants and greenhouse gas emissions would be higher in this in this area than under the Proposed Project. This increase would be small compared to the overall emissions associated with construction of the Proposed Project. Construction emissions would still be a direct, adverse impact under NEPA, and would be significant under CEQA, even after implementation of mitigation measures AQ-1a, AQ-1b, AQ-1c, and AQ-1d.

The emissions associated with the Rialto Alternative route would also occur in a different location than the emissions associated with the Proposed Project in this area. Both areas are located in an urban part of the City of Rialto, so the affected environment and regulatory status of air quality would be the same in both areas. However, the emissions could potentially affect a different set of sensitive receptors. The Rialto Alternative route would avoid the location of several schools. With respect to schools, the Rialto Alternative would:

- Avoid the school planned as part of the Renaissance Project;
- Avoid the Community Christian Pre-School
- Avoid Carter High School;
- Be further from Grimes Elementary School; and
- Be further from Dunn Elementary School.

Overall, the emissions associated with the Alternative route would be higher than those associated with the Proposed Project. However, the potential for emissions that do occur on the Alternative route to affect sensitive receptors at the schools would be reduced from that of the Proposed Project Any impacts would be temporary, occurring only during construction, and would be mitigated by implementation of mitigation measures MM AQ-1a, AQ-1b, AQ-1c, and AQ-1c.

Wagon Train Road Alternative

The Wagon Train Road route, and the segment of the Proposed Project that it would replace through the unnamed riparian area, do not have any differences with respect to air quality and greenhouse gas emissions. The length of each route is approximately the same, so construction-related emissions of hazardous pollutants and greenhouse gases would be the same for both routes. Therefore, the potential air quality and greenhouse gas emission impacts associated with the Wagon Train Road route would be the same as those identified for the Proposed Project.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa route is 0.8 miles longer than the Proposed route along Baldy Mesa Road. Therefore, the construction emissions associated with both hazardous pollutants and greenhouse gas emissions would be higher in this in this area than under the Proposed Project. This increase would be small compared to the overall emissions associated with construction of the Proposed Project. Construction emissions would still be a direct, adverse impact under NEPA, and would be significant under CEQA, even after implementation of mitigation measures AQ-1a, AQ-1b, AQ-1c, and AQ-1d.

The emissions associated with the Phelan Road/Baldy Mesa Alternative route would also occur in a different location than the emissions associated with the Proposed Project in this area. Both routes are located in close proximity to each other in a residential neighborhood, so the affected environment and regulatory status of air quality would be the same in both areas. However, the emissions could potentially affect a different set of sensitive receptors. The Proposed route is located adjacent to the Baldy Mesa Elementary School and Quail Valley Middle School, while the Alternative route was designed to avoid being adjacent to these schools. Therefore, although the Alternative route may impact sensitive receptors in residences, it would avoid the potential to impact sensitive receptors in the schools.

Overall, the emissions associated with the Alternative route would be higher than those associated with the Proposed Project. However, the Alternative route would avoid emissions in close proximity to the schools. Any impacts would be temporary, occurring only during construction, and would be reduced by implementation of mitigation measures MM AQ-1a, AQ-1b, AQ-1c, and AQ-1c. Because it avoids emissions in close proximity to the schools, the Alternative route would have a reduced level of air emissions in a sensitive area than would the the Proposed route.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, do not have any differences with respect to air quality and greenhouse gas emissions. The length of each route is approximately the same, so construction-related emissions of hazardous pollutants and greenhouse gases would be the same for both routes. Therefore, the potential air quality and greenhouse gas emission impacts associated with the Zzyzx Alternative route would be the same as those identified for the Proposed Project.

Baker Alternative

The Baker Alternative route is 0.6 miles shorter than the Proposed route west and north of the Town of Baker. Therefore, the construction emissions associated with both hazardous pollutants and greenhouse gas emissions would be reduced in this area. This reduction would be small compared to the overall emissions associated with construction of the Proposed Project, and construction emissions would still be a direct, adverse impact under NEPA, and would be significant under CEQA, even after implementation of mitigation measures AQ-1a, AQ-1b, AQ-1c, and AQ-1d.

The emissions associated with the Baker Alternative route would also occur in a different location than the emissions associated with the Proposed Project in this area. The emissions associated with the Proposed route would occur in an undeveloped area outside of the Town of Baker, while some portion of the emissions associated with the Alternative route would occur within the developed area of Baker. Both areas are located in the same jurisdictional area, so the affected environment and regulatory status of air quality would be the same in both areas. However, the emissions could potentially affect a different set of sensitive receptors. Neither route is located adjacent to hospitals or schools, but there is the potential for residences along the Alternative route to include more sensitive receptors than the Proposed Route.

Overall, the emissions associated with the Alternative route would be reduced as compared to the Proposed Project. However, the potential for emissions that do occur to affect residents and sensitive receptors would be higher for the Alternative route, due to its route through a developed part of Baker. Any impacts would be temporary, occurring only during construction, and would be reduced by implementation of mitigation measures MM AQ-1a, AQ-1b, AQ-1c, and AQ-1c.

Silver Lake Pump Station Alternative

The alternative and Proposed Action locations for the proposed Silver Lake Pump Station would have the same emissions of hazardous pollutants and greenhouse gas emissions, regardless of the selected location. The design, construction methods, and operation of the pump station would be the same for either location, so the associated emissions would also be the same. The emissions would be small compared to the overall emissions associated with construction of the Proposed Project, and construction emissions would still be a direct, adverse impact under NEPA, and would be significant under CEQA, even after implementation of mitigation measures AQ-1a, AQ-1b, AQ-1c, and AQ-1d.

The emissions associated with the Silver Lake Pump Station Alternative location would occur in a different location than the emissions associated with the Proposed Project in this area. The emissions associated with the Proposed location would occur adjacent to the Baker Elementary and High School, while the emissions associated with the Alternative location would occur in an undeveloped area 2000 feet to the east. Both areas are located in the same jurisdictional area, so the affected environment and regulatory status of air quality would be the same in both areas. However, the emissions associated with the Alternative location would have a lower potential to impact sensitive receptors at the school.

Overall, the emissions associated with the Alternative location would be the same as the Proposed Project. However, the potential for emissions that do occur to affect residents and sensitive receptors would be reduced for the Alternative location, due to its distance from the school. Any impacts would be temporary, occurring only during construction, and would be reduced by implementation of mitigation measures MM AQ-1a, AQ-1b, AQ-1c, and AQ-1c. Because it avoids emissions in close proximity to the school, the Alternative location would have a lower level of emissions in close proximity to sensitive receptors than would the Proposed location.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation is 1.4 miles longer than the Proposed route along Valley View Boulevard and Hacienda Avenue. Therefore, the construction emissions associated with both hazardous pollutants and greenhouse gas emissions would be higher in this in this area than under the Proposed Project. This increase would be small compared to the overall emissions associated with construction of the Proposed Project. Construction emissions would still be a direct, adverse impact under NEPA, and would be significant under CEQA, even after implementation of mitigation measures AQ-1a, AQ-1b, AQ-1c, and AQ-1d.

The emissions associated with the Sunset Alternative route would also occur in a different location than the emissions associated with the Proposed Project in this area. Both areas are located in an urban part of the Las Vegas, so the affected environment and regulatory status of air quality would be the same in both areas. However, the emissions could potentially affect a different set of sensitive receptors. Neither route is located adjacent to hospitals or schools, but there is the potential for residences in apartments along the Alternative route to include more sensitive receptors than the Proposed Route.

Overall, the emissions associated with the Alternative route would be higher than those associated with the Proposed Project. However, the potential for emissions that do occur on either route to affect residents who could be sensitive receptors is unknown. Any impacts would be temporary, occurring only during construction, and would be reduced by implementation of mitigation measures MM AQ-1a, AQ-1b, AQ-1c, and AQ-1c.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to air quality or greenhouse gas emissions.

Summary

Overall, Alternative 2 would have an increase in the level of impacts as compared to the Proposed Project. This is due to the longer route of the pipeline in Alternative 2 (3.6 miles longer), which would result in a higher level of emissions of hazardous pollutants and greenhouse gases. This increase would be small compared to the overall emissions associated with construction of the Proposed Project. Construction emissions would still be a direct, adverse impact under NEPA, and would be significant under CEQA, even after implementation of mitigation measures AQ-1a, AQ-1b, AQ-1c, and AQ-1d.

The emissions associated with the Alternative 2 routes would occur in different locations than the emissions associated with the Proposed Project. In three locations (Rialto, Phelan Road/Baldy Mesa, and Silver Lake Pump Station), the Alternative route would be located further away from schools, thus reducing the potential for any adverse impacts to sensitive receptors at the schools. Therefore, although the Alternative 2 route would have a slightly higher level of total emissions, those emissions would occur a further distance from the schools than the emissions from the Proposed Project. Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. These mitigation measures would reduce the level of impacts, but the level of emissions would still be significant under CEQA.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative Location, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. Overall, Alternative 3 would have an increase in the level of impacts as compared to the Proposed Project, and to Alternative 2. This is due to the longer route of the pipeline in Alternative 3 (4.1 miles longer than the Proposed Project, and 0.5 miles longer than Alternative 2), which would result in a higher level of emissions of hazardous pollutants and greenhouse gases. This increase would be small compared to the overall emissions associated with construction of the Proposed Project. Construction emissions would still be a direct, adverse impact under NEPA, and would be significant under CEQA, even after implementation of mitigation measures AQ-1a, AQ-1b, AQ-1c, and AQ-1d.

The emissions associated with the Alternative 3 routes would occur in different locations than the emissions associated with the Proposed Project. In the Baker area, the Silver Lake Pump Station Alternative location would be located further away from the school, thus reducing the potential for any adverse impacts to sensitive receptors at that school. However, the Alternative 3 route would include the portion of the Proposed Project that traverses in close proximity to the Baldy Mesa Elementary School and Quail Valley Middle School. Any impacts would be temporary, occurring only during construction, and would be reduced by implementation of mitigation measures MM AQ-1a, AQ-1b, AQ-1c, and AQ-1c.

Overall, the Alternative 3 route would have a slightly higher level of emissions than both Alternatives 1 and 2, and it would also still cause emissions in close proximity to two schools. Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 3. These mitigation measures would reduce the level of impacts, but the level of emissions would still be significant under CEQA.

Water Source Alternative

As discussed in Section 3.5.3.2, Impact WR-3, water may not be available from some of the proposed water sources at the time of construction. If that occurs, the Applicant has proposed that 100 percent of project water would be accessed from the West Valley Water District, Mojave Water Agency, and Las Vegas Valley Water District, and would be transported by truck to its point of use. If implemented, this water source scenario would result in an increase in the total mileage driven by water trucks to support the project, and would therefore result in an increase in associated air emissions. Overall, total water truck miles would increase from 229,000 in the Proposed Project to 644,689 miles in the alternative water supply scenario, an increase of 180 percent in total truck miles (URS Corporation [URS] 2011).

None of this increase would occur in the SCAB, so there would be no change in attainment status or exceedance of thresholds in that area.

The truck miles within the MDAB would increase from 196,374 miles to 442,150 miles, an increase of 125 percent. As shown in Table 3.6-10, total emissions for the Proposed Project already exceed MDAQMD thresholds for VOCs, NOx, CO, PM10, and PM2.5, as well as the NAAQS threshold for NOx and PM10. The increase in emissions would not result in exceedance of any other thresholds. Therefore, although the increase in emissions would contribute to existing air quality conditions, it would not result in any change to the mitigation or regulatory requirements for the project. Project emissions would still be direct and adverse under NEPA, and would be greater than those of the Proposed Project.

The truck miles within Clark County would increase from 30,672 miles to 200,547 miles, an increase of 550 percent. As shown in Table 3.6-10, total emissions for the Proposed Project already exceed the NAAQS threshold for NOx and PM10. The increase in emissions would not result in exceedance of any other thresholds. Therefore, although the increase in emissions would contribute to existing air quality conditions, it would not result in any change to the mitigation or regulatory requirements for the project. Project emissions would still be direct and adverse under NEPA, and would be greater than those of the Proposed Project.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

The No Action Alternative assumes that the existing Calnev system would continue to be operational at its maximum feasible level and that additional needs would be provided to the market by other means. It is possible, for example, that the need for additional delivery of petroleum products could be met by truck or rail shipments. Potential impacts related to the No

Action Alternative are discussed in this section. Estimated increases in truck and rail traffic are used as the basis for analysis.

The anticipated fuel demand in Las Vegas, Nevada and the California High Desert resulting from population growth and/or tourism will eventually exceed the capacity of the existing Calnev Pipeline System. A portion of the demand could be met in ways identified in a report prepared by a Clark County Blue Ribbon Commission (BRC) to improve reliability of southern Nevada's fuel supply. Two alternative methods of fuel transportation were examined in the BRC report: delivery by rail or truck. The BRC also indicates that either of these options would require construction of new loading/off-loading facilities and/or new rail terminals.

The Proposed Project would increase system capacity up to approximately 44,000 barrels per day, and the following analysis assumes that this demand could potentially be met by the use of increased truck and rail deliveries. The BRC estimated that 50 truck loads per day would be needed to transport 10,476 barrels per day. The BRC also estimated it would take three trains per week (with 85 cars per train) to transport 29,922 barrels per day. In order to meet the equivalent of the Proposed Project, it is assumed that 210 truck loads per day or four trains per week would be need to transport 44,000 barrels per day.

A summary of the estimated daily emissions of criteria air pollutants for truck and rail transportation under the No Action alternative is presented in Table 3.6-15. A summary of the estimated annual emissions of criteria air pollutants for truck and rail transportation under the no action alternative is presented in Table 3.6-16. A summary of the estimated annual GHG emissions for truck and rail transportation under the no action alternative is presented in Table 3.6-17. A detailed summary of operational emission estimates associated with the No Action Alternative is presented in Appendix C. The emission estimates in these tables do not account for the construction necessary for new loading facilities or rail terminals. It is assumed that there could be substantial emissions associated with the construction of these facilities.

The following summary tables indicate that the criteria air pollutant and GHG emissions associated with truck or rail transport under the No Action alternative would be substantially greater than the corresponding emissions from operational activities of the Proposed Project.

Table 3.6-15 Daily Criteria Air Pollutant Emissions from the No Action Alternative

	Daily Emissions (lbs/day)					
Parameter	VOC	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2
Maximum Daily Emissions for Truck Transport						
SCAB	27	325	107	16	14	0.4
MDAB	171	2,090	691	101	87	2.7
Clark County, Nevada	42	520	172	25	22	0.7
Total	240	2,935	970	142	123	3.8
Maximum Daily Emissions for Rail Transport						
SCAB	9.5	182	47	6.2	6.2	1.8
MDAB	61	1,171	300	40	40	12
Clark County, Nevada	15	291	74	9.9	9,9	2.9
Total	85	1,644	421	56	56	16

Note: Total emissions values are based on results presented in Appendix C, on a full decimal-based format. Results displayed on this table may not add up exactly due to rounding.

Table 3.6-16 Annual Criteria Air Pollutant Emission Increases from the No Action Alternative

Parameter	Annual Emissions (tons/year)					
	VOC	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2
Maximum Annual Emissions for Truck Transport						
SCAB	4.8	59	20	2.9	2.5	0.08
MDAB	31	382	126	18	16	0.50
Clark County, Nevada	7.7	95	31	4.6	4.0	0.12
Total	44	536	177	26	22	0.7
Maximum Annual Emissions for Rail Transport						
SCAB	0.98	19	4.8	0.64	0.64	0.19
MDAB	6.3	122	31	4.1	4.1	1.2
Clark County, Nevada	1.6	30	7.7	1.0	1.0	0.30
Total	8.9	171	44	5.7	5.7	1.7

Note: Total emissions values are based on results presented in Appendix C, on a full decimal-based format. Results displayed on this table may not add up exactly due to rounding.

Table 3.6-17 Greenhouse Gas Emissions from No Action Alternative

Parameter	Emission Type	GHG Emissions CO_2 Equivalent (metric tons/year)
Annualized Emissions from Truck Transport	Direct Construction Emissions	TBD
	Direct Operational Emissions	66,300
	TOTAL	66,300
Annualized Emissions from Rail Transport	Direct Construction Emissions	TBD
	Direct Operational Emissions	17,400
	Total	17,400
SCAQMD Interim GHG Threshold		10,000

Note: Total emissions values are based on results presented in Appendix C, on a full decimal-based format. Results displayed on this table may not add up exactly due to rounding.

TBD = To be determined based on more detailed information about construction of the Proposed Project.

SCAQMD = South Coast Air Quality Management District

If increased truck and rail deliveries are used to meet increased demand under the No Action Alternative, these activities would result in emissions of hazardous air pollutants and greenhouse gases, and would therefore be a direct, adverse impact. If the No Action Alternative were to be selected, it is possible that fuel deliveries by truck and rail would increase in the future to meet demand. These increased deliveries would result in an increase in emissions of both hazardous air pollutants and greenhouse gases. These impacts would be direct, adverse impacts under NEPA, and would be significant under CEQA . Mitigation of these increased emissions would be outside of the jurisdiction of the agencies responsible for the EIS/EIR. Overall, the No Action/No Project Alternative would have greater impacts with respect to air quality and greenhouse gas emissions than Alternatives 1, 2, or 3.

3.6.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.6-18, there are differences in impacts based on the route variations.

Table 3.6-18 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative	Alternative Water Supply Scenario
Temporary impacts from increased air pollutant and greenhouse gas emissions from construction activities.	Slightly higher level of temporary construction emissions due to longer route, but avoids two sensitive receptors.	Slightly higher level of emissions than Alternatives 1 and 2 due to longer route.	Increase in fuel deliveries by truck and rail to meet demands would result in increased air pollutant and greenhouse gas emissions.	Increased transportation mileage would result in increased emissions associated with water trucks in MDAB and Clark County.

3.6.4 Summary of Mitigation

A complete list of mitigation measures is presented by impact in Table 3.6-19. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.6-19 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Impact AQ-1: Temporary Ambient Air Quality Impacts Caused by Construction Activities. Air pollutants emitted during construction activities would temporarily increase ambient criteria pollutants concentrations in the Proposed Project area.	**MM AQ-1a:** Construction Fugitive Dust Control Plan	All construction locations.	BLM, USFS, SCAQMD, MDAQMD, and Clark County DAQEM	Plan needs to be submitted prior to start of construction with adequate time for review and comment by all responsible agencies
	MM AQ-1b: Low-emission Construction Equipment	All construction locations.	BLM, USFS, SCAQMD, MDAQMD, and Clark County DAQEM	Ongoing - throughout the duration of construction
	MM AQ-1c: Construction Emissions Reduction Plan	All construction locations.	BLM, USFS, SCAQMD, MDAQMD, and Clark County DAQEM	Plan needs to be submitted prior to start of construction with adequate time for review and comment by all responsible agencies
	MM AQ-1d: Construction Equipment Documentation	All construction locations.	BLM, USFS, SCAQMD, MDAQMD, and Clark County DAQEM	Ongoing - throughout the duration of construction

References

California Air Resources Board (CARB). 2005. *Air Pollution Sources, Effects and Control: Fact Sheet.*. Accessed October 17, 2008.

California Air Resources Board (CARB). 2007. *California Greenhouse Gas Inventory- Summary by Economic Sector*. (Updated: November 19, 2007).

California Air Resources Board (CARB). 2008a. *Climate Change Scoping Plan*. December.

California Air Resources Board (CARB). 2008b. *Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act*. October.

California Air Resources Board (CARB). 2009. *Fact Sheet: The Greenhouse Effect and California.*

California Air Resources Board (CARB). 2010a. *California Greenhouse Gas Inventory for 2000-2008 - by Category as Defined in the Scoping Plan*. (Updated: May 12, 2010).

California Air Resources Board (CARB). 2010b. *Fact Sheet. California's Climate Plan.*

Clark County. 2011. *Sustainability Plan.* http://www.clarkcountynv.gov/Depts/eco_county/Pages/default.aspx. Accessed February 2, 2011.

City of Colton. 1992. *City of Colton General Plan: Air Quality Element*. Adopted January 1992.

Environmental Protection Agency (EPA). 2011a. *National Ambient Air Quality Standards.* http://epa.gov/air/criteria.html. Accessed January 28, 2011.

Environmental Protection Agency (EPA). 2011b. *Monitor Values Report: Criteria Air Pollutants.* http://www.epa.gov/air/data/monvals.html. Accessed February 3, 2011.

Environmental Protection Agency (EPA). 2011c. *Overview of EPA's Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act.* http://epa.gov/climatechange/endangerment.html. Accessed February 2, 2011.

Intergovernmental Panel on Climate Change (IPCC). 2007. *Working Group III Contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report, Climate Change 2007: Mitigation of Climate Change*. May.

Mojave Desert Air Quality Management District (MDAQMD). 2009. *California Environmental Quality Act and Federal Conformity Guidelines*. February.

Nevada Division of Environmental Protection (NDEP). 2008. *Nevada Statewide Greenhouse Gas Emissions Inventory and Projections, 1990 to 2020*. December.

South Coast Air Quality Management District (SCAQMD). 2007. Final Air Quality Management Plan. Appendix II Current Air Quality. June.

South Coast Air Quality Management District (SCAQMD). 2009. *Air Quality Significance Thresholds*. March.

United States Forest Service (USFS). 2005. *Part 2: San Bernardino National Forest Strategy*.

URS Corporation. 2011. Draft Groundwater Monitoring Plan. July 26, 2011.

3.7 Biological Resources

This section identifies the biological resources that may be affected by the Proposed Project, and its alternatives. Information in this section is largely based on the *Calnev Expansion Project Biological Resources Technical Report* (URS Corporation 2010a), the *Calnev Expansion Project Biological Assessment* (URS Corporation 2010b) and the *Calnev Expansion Project Biological Assessment Supplement Non-Federal Special Status Species* (URS Corporation 2010c). A detailed description of survey methods utilized by the Applicant to identify the biological resources within the Project can be found in the *Calnev Expansion Project Biological Resources Technical Report* (URS Corporation 2010a).

During the scoping period, government agencies and members of the public identified the following issues and concerns related to biological resources: potential adverse impacts to Cleghorn Canyon; the application of herbicides; potential impacts to protected plant and wildlife species and their habitats including Bighorn sheep, desert tortoise, migratory birds, the Western burrowing owl, the banded Gila monster, Santa Ana Specked dace, arroyo toad, southwestern willow flycatcher, least Bell's vireo, San Bernardino kangaroo rat, coastal California gnatcatcher, and other Forest Service Sensitive Species; potential impacts from the use of the Vulcan Materials road within the Cajon Creek Habitat Conservation Management Area; consideration of Southern California Association of Governments (SCAG) goals; cumulative effects of developments along the I-15 corridor; the effects of emergency actions, repeated maintenance, project facilitated unauthorized vehicle routes, and consideration of Conservation Management Categories established for the pipeline study area (see Appendix A for Scoping Summary Report). These comments are addressed and mitigation measures proposed in Section 3.7.3, Environmental Consequences.

This EIS/EIR analyzes the impacts of the Proposed Project to wildlife and vegetation communities, as well as impacts to special-status vegetation and wildlife species. For purposes of this EIS/EIR, special-status species for which impacts are analyzed individually include:

- USFWS Threatened and Endangered species;
- BLM Sensitive species (in California, this includes California Native Plant Society [CNPS] List 1 species);
- USFS Management Indicator Species (MIS) and Region 5 Sensitive Wildlife Species; and
- California and Nevada state-designated protected species.

The special-status vegetation species which are likely to occur within the Proposed Project area, based on identification in surveys or presence of modeled habitat, are identified in Table 3.7-1 and described in Section 3.7.1.1.2. The special-status wildlife species which are likely to occur within the Proposed Project area are identified in Table 3.7-2 and described in Section 3.7.1.2.1.

3.7.1 Affected Environment

This section discusses biological resources near the Proposed Project area. The pipeline route and alternatives would primarily traverse undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States Forest Service and the Department of Defense (DoD). Lands under the jurisdiction of the State of California, the State of Nevada; the County of San Bernardino, and Clark County would also be crossed by the proposed pipeline. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

The Project traverses through two primary eco-regions, the Cismontane Southern California region from Colton to Cajon Pass and the Mojave Desert region from Cajon Pass to Las Vegas. The Transverse and Peninsular Ranges constitute the major subregions of the Cismontane Southern California region. The southern portion of this Project is located within the Transverse Ranges subregion. The Transverse Ranges are so named because the mountain ranges run along an east-west axis, and was created by uplift associated with the San Andreas Fault system. Forming the northern border of the Los Angeles Basin, the mountains have a large granitic component, similar to the Sierra Nevada to the north. However, the Transverse Ranges are subject to less erosional forces than the Sierra (e.g. precipitation and glaciation), primarily due to a drier rainfall regime. The Cajon Pass is located at the juncture between the San Gabriel and San Bernardino Mountains, both Transverse Ranges.

The Transverse Ranges support ecologically unique conditions. The south-facing slopes are dominated by chaparral vegetation, and the mountain tops and north-facing slopes in the rain shadow support coniferous forests. This vegetation arrangement results from evaporation rates that are much higher on south-facing slopes than on north-facing slopes. Therefore, drought-tolerant vegetation predominates on the southern slopes, while the more mesic coniferous forests occupy the zone of slow snowmelt near the summits and on the less insolated northern slopes. Typical of the Mediterranean climate zone in southern California, chaparral habitat on mountain slopes is adapted to a comparatively short fire return to remain a productive, diverse community (Schoenherr 1992). However, areas that burn too frequently risk habitat type conversion. The US Forest Service (USFS) has indicated that excessive burning may be occurring in some areas of Cajon Pass (USFS 2008a).

Within the Cajon Pass is Cajon Creek, an ecologically rich wooded riparian corridor. Dominated by dense riparian woodland in some patches, and unvegetated in others, Cajon Creek supports diverse assemblages of species that are becoming rare in southern California. According to the USFS, Cajon Creek supports a higher concentration of federally listed species than almost anywhere else on the San Bernardino National Forest (SBNF) (USFS 2008a). Riparian woodlands consist principally of willows, sycamores, and cottonwoods, support nesting migratory birds and provide cover for large mammals, such as deer and mountain lion (*Puma concolor*). Other species associated with the creek include many USFS Region 5 Sensitive species of insects, fish, and amphibians. Cajon Creek is a disturbance-prone habitat. Many species are adapted to occasional scouring floods. The population of parasitic Brown-headed Cowbirds (*Molothrus ater*) impacts multiple riparian bird species of management concern in the Wash.

Below MP-20 Cajon Creek becomes an ephemeral wash. Flood control measures, sand mining, efforts and a human population increase have created threats to rare species occurring within or adjacent to the wash such as the San Bernardino kangaroo rat.

North of the San Gabriel and San Bernardino Mountains lies the Mojave Desert, often known as California's high desert, that contains elevational extremes. At lower elevations, the desert is dominated by creosote bush (*Larrea tridentata*), named for its distinctive odor. The lowest points in the desert are occupied by playas or alkali sinks, dry lake beds where evaporation leaves wide expanses of soils with high alkalinity or salinity. The Mojave Desert supports many endemic species, including desert tortoise (*Gopherus agassizii*), Mojave Fringe-toed Lizards (*Uma scoparia*), and Joshua tree (*Yucca brevifolia).*

On average, the Mojave Desert received an average of approximately 5 inches per year. Rainfall conditions in the Proposed Project area during 2007 and 2008 differed considerably, typical of high interannual and regional variability. According to the National Weather Service, the Proposed Project area experienced 2-6 inches less precipitation than average between January and December of 2007. From January to December of 2008, a majority of the Proposed Project area experienced average or above average rainfall conditions (0-2 inches greater than average). Near the California-Nevada border, rainfall was reported between 2-4 inches less than average in 2008.

3.7.1.1 Vegetation

The study area supports 26 distinct vegetation communities, 24 of which are characterized by Holland (1986) and discussed below. One additional community not recognized by Holland, Badlands, is also discussed. The majority of the Proposed Project area consists of Mojave creosote bush scrub and bare/ground native grassland. The remaining vegetation communities occur in smaller areas intermittently along the length of the Project route. All plant species observed within the Proposed Project area during the course of Calnev surveys are noted in the *Calnev Expansion Project Biological Resources Technical Report* (URS Corporation 2010a).

3.7.1.1.1 Plant Communities

Riversidean Sage Scrub (Holland Code 32700)
Riversidean sage scrub in the Mediterranean climate zone is one of the most xeric (i.e., found on dry, typically steep, thin soils, on south-facing exposures) forms of coastal sage scrub. This community is generally open, dominated by California sage brush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*), with an herbaceous understory of non-native grasses such as red brome (*Bromus madritensis* ssp. *rubens*). Riversidean sage scrub is also found in clay soils that release moisture at a slow rate (Holland 1986). Examples of this vegetation type are found in some of the non-riparian portions of the Cajon Pass area.

Riversidean Alluvial Fan Sage Scrub (Holland Code 32720)
Riversidean alluvial fan sage scrub vegetation communities occur on alluvial outwash fans (i.e., water-deposited material that accumulates at the base of a topographic feature) and floodplains of the San Gabrieland San Bernardino mountains. These plant communities are composed of a variety of drought-deciduous shrubs with a large component of larger, evergreen shrubs typically found in chaparral (Kirkpatrick and Hutchinson 1977; Smith 1980) and adapted to survival in the presence of intense periodic flooding. Examples of this vegetation type are found near in the Cajon Pass area.

Riversidean Sage Scrub/Chaparral (Holland Code 37G00)
This mixed community includes both drought-deciduous sage scrub species and woody chaparral species, and is often a post-fire successional community. Total vegetative cover includes roughly equal amounts of both scrub and chaparral species (Holland 1986). Characteristic dominant species include chamise (*Adenostoma fasciculatum*), California sagebrush (*Artemisia californica*), ceanothus (*Ceanothus* spp.), black sage (*Salvia mellifera*), and poison-oak (*Toxicodendron diversilobum*). Examples of this vegetation type are found in the Cajon Pass area.

Blackbush Scrub (Holland Code 34300)
Blackbush scrub, generally dominated by blackbush (*Coleogyne ramosissima*) and often monotypic, is characterized as having low, intricately branched shrubs with open canopy and little to no understory. This vegetation type typically occurs on dry, well-drained slopes and flats with calcareous soils (i.e., formed of weathered rock often containing chalk or limestone) (Holland 1986). Species associated with this vegetation type include budsage (*Artemisia spinescens*), spiny saltbush (*Atriplex confertifolia*), Mormon tea (*Ephedra nevadensis*), bladder sage (*Salazaria mexicana*),). An example of this vegetation type is found near Shadow Valley Desert Wildlife Management Area (DWMA).

Mojave Creosote Bush Scrub (Holland Code 34100)
Mojave creosote bush scrub is a community dominated by creosote bush and few other species. Shrubs are typically widely spaced within expanses of bare ground. An annual herb layer may flower in late March and April with sufficient winter rains. Other species commonly found in this habitat includes burrobush (*Ambrosia dumosa*), desert senna (*Senna armata*), Mormon tea, and cheesebush (*Hymenoclea salsola*). This habitat is usually found on well-drained alluvial or colluvial soils with very low available water holding capacity on slopes, fans, and valleys. This vegetation type is widespread throughout the Mojave Desert portion of the Proposed Project area.

Desert Saltbush Scrub (Holland Code 36110)
Desert saltbush scrub is a low, sparse mixture of microphyllous (i.e., small-leaved) shrubs and occasional succulent species. Stands of shrubs are usually widely spaced and are strongly dominated by a single *Atriplex* (saltbush) species. Other species can include spiny hopsage (*Grayia spinosa*), cheesebush, Anderson thornbush (*Lycium andersonii*), and mesquite (*Prosopis* sp.). This habitat usually forms on fine-textured, poorly draining soils with high alkalinity and salinity, usually surrounding playas on elevated ground (Holland 1986). Examples of this vegetation type are found near Ivanpah Dry Lake.

Mojave Wash Scrub (Holland Code 34250)
Mojave wash scrub is a low, shrubby, open community with a scattered to locally dense overstory of microphyllous trees. It is usually found on sandy bottoms of wide canyons and sandy, braided, shallow washes of lower bajadas (i.e., spreading debris from water flows at the base of topographical features) (Holland 1986). Some typical species found in this habitat include catclaw (*Acacia gregii*), desert willow (*Chilopsis linearis*), mesquite (*Prosopis* ssp.), blackband rabbitbrush (*Chrysothamnus paniculatus*), cheesebush, and skunkbush (*Rhus trilobata*). An example of this vegetation type is found near the Valley Wells Pumpstation.

Mojave Mixed Steppe (Holland Code 34220)
Mojave mixed steppe is a fairly dense grassland community dominated by big galleta (*Pleuraphis rigida*). Intermixed within this grassland community are annuals, scattered shrubs, (burrobush, Mormon tea, California buckwheat) and Indian rice-grass (*Achnatherum hymenoides*). This habitat occurs on upper bajadas and the lower slopes of the mountains of the eastern Mojave Desert. An example of this vegetation type is found near Mountain Pass, CA.

Southern Mixed Chaparral (Holland Code 37120)
Southern mixed chaparral is the most mesic form of chaparral in southern California and can grow densely. This community is composed of a mix of evergreen and sclerophylous (i.e., hard-leaved) shrubs that are adapted to low precipitation (Holland 1986). Shrub species commonly found in this community usually include laurel sumac (*Malosma laurina*), scrub oak (*Quercus berberidifolia*), chamise, birch-leaf mountain mahogany (*Cercocarpus betuloides*), holly-leaf

cherry (*Prunus ilicifolia*), and southern honeysuckle (*Lonicera subspicata*). Examples of this vegetation type are found in the Cajon Pass area.

Scrub Oak Chaparral (Holland Code 37900)
Scrub oak chaparral is a dense, evergreen chaparral association that is dominated by scrub oak. This habitat occurs on more mesic sites than other chaparral associations, which tend to allow scrub oak chaparral to recover from fire more quickly than do other chaparral types. Additional shrub species found in scrub oak chaparral include manzanitas (*Arctostaphyllos* spp.), toyon (*Heteromeles arbutifolia*), mountain-mahogany, and holly-leaf redberry (*Rhamnus ilicifolia*). Understory species include poison-oak, and bedstraws (*Galium* spp.). Examples of this vegetation type are found in the Baldy Mesa area.

Mule Fat Scrub (Holland Code 63310)
Mule Fat scrub is characterized as a tall, herbaceous riparian scrub strongly dominated by mule fat (*Baccharis salicifolia*). This community is found within intermittent stream channels with fairly coarse substrate with the water table at moderate depth. It is maintained by frequent flooding (Holland 1986). Mule fat scrub may also contain several willow species (*Salix* spp.), including arroyo willow (*Salix lasiolepis*), narrow-leaf willow (*S. exigua*), or red willow (*S. laevigata*). Examples of this vegetation type are found in the Cajon Pass area.

Southern Willow Scrub (Holland Code 63320)
Southern willow scrub contains dense, broad-leaved deciduous trees, dominated by willows and associated with seasonally flooded or saturated stream or river corridors. It typically forms thickets in riparian zones along alluvial fan stream channels, adjacent sandy or gravelly floodplains, and in low stream terraces in Southern California (Holland 1986). Southern willow scrub is an early developmental community to southern cottonwood-willow riparian forest, and may be dominated by a single willow species, depending on location and elevation. Examples of this vegetation type are found in the Cajon Pass area.

Tamarisk Scrub (Holland Code 63810)
Tamarisk scrub is a weedy, moderate to dense scrub habitat dominated by tamarisk species (*Tamarix* spp.). This habitat typically occurs in sandy or gravelly braided washes or intermittent streams where high evaporation has increased the stream's salt content and often follows in the aftermath of disturbance (Holland 1986). Tamarisk is highly invasive and frequently out-competes native scrub species such as willows and mule fat. Other species typically associated with tamarisk scrub include salt grass (*Distichilis spicata*), arrow-weed (*Pluchea sericea*), quailbush (*Atriplex lentiformis*), and narrow-leaved willow. Examples of this vegetation type are found near Yermo, CA.

Southern Cottonwood-Willow Riparian Forest (Holland Code 61330)
Southern cottonwood-willow riparian forest is open, broadleaved, winter deciduous riparian forest dominated by Fremont cottonwood (*Populus fremontii*) and several species of willow trees. The canopy consists of Fremont cottonwood, black willow (*Salix gooddingii*), and California sycamore (*Platanus racemosa*). The understory is usually dominated by shrubby species such as narrow-leaved willow, arroyo willow, tamarisk, and mule fat. This community occurs along perennial streamsides in the Transverse Range (Holland 1986), although if sufficient water persists, the community can also establish in the Mojave Desert. Examples of this vegetation type are found in the Cajon Pass area and at the Mojave River.

Riparian Woodland (Holland Code 62000)
Riparian woodlands are characterized by tree species, with sycamores as the dominant trees, along with willows and cottonwoods. This association occupies broader drainages or floodplains

of permanent streams but rarely forms closed canopies. Riparian woodlands can occur as a stand of scattered trees within one of the other habitats within the Proposed Project area (e.g. willows, mule fat, and other shrubby species). Riparian woodland is equivalent to Holland's (1986) southern sycamore alder riparian woodland habitat type, although white alder (*Alnus rhombifolia*) does not occur within this association in the study region. The understory is often comprised of forbs and non-native grasses, with shrub species accounting for only a small portion of the cover. Examples of this vegetation type are found in the Cajon Pass area and at the Mojave River.

Open Channel (Holland Code 13200)
Unvegetated drainage channels are generally considered "waters of the U.S./State" by the Army Corps of Engineers and the California Department of Fish and Game (CDFG), which have jurisdiction under federal and state wetlands permitting laws. The lack of vegetative cover in such areas can be attributed to either natural processes such as flooding, or to human activities, such as stream channelization for flood control. Areas are designated as disturbed flood channels if the channel has been artificially cleared or disturbed, or if the channel is dominated by non-native trees and lacks any native riparian component. Examples of this vegetation type are found in the Cajon Pass area.

Coast Live Oak Woodland (Holland Code 71160)
Coast live oak woodland is characterized by an open to locally dense evergreen plant community dominated by coast live oak trees (*Quercus agrifolia*), which can reach from 30 feet to over 80 feet. This community typically has a poorly developed understory of shrubs, which can include toyon, Mexican elderberry (*Sambucus mexicana*), lemonade berry (*Rhus integrifolia*), and poison oak, among others. The herb layer is relatively continuous and includes bedstraws, nettles (*Urtica* spp.), and various native and non-native grasses. Oaks are typically found in well drained, north-facing slopes and in more protected, shaded ravines (Holland 1986). An example of this vegetation type can be found in the Cajon Pass area.

Joshua Tree Woodland (Holland Code 73000)
Joshua tree woodland is an open woodland dominated by Joshua trees and numerous shrub species, with little to no herbaceous understory during most of the year. This vegetation type occurs on sandy, loamy, or gravelly well-drained gentle alluvial slopes in desert. Dominant species typically consist of sclerophyllous evergreen trees and shrubs, semi-deciduous shrubs, semi-succulents, and succulents (Holland 1986). Characteristic species of this vegetation type include buckwheat, juniper (*Juniperus californica*), Mojave yucca (*Yucca shidigera*), diamond cholla (*Opuntia ramosissima*), bladder sage, and Mormon tea. Examples of this vegetation type are found in the Baldy Mesa and Mountain Pass areas.

Dry Lake Bed/Playa (Holland Code 46000)
Dry lake bed/playa habitat is characterized by having low, grayish, microphyllous, and succulent shrubs at low density, and few understory species. This vegetation type typically occurs on poorly drained soils with high salinity or alkalinity due to water evaporation. A high water table and salt deposits are usually present (Holland 1986). Vegetation species associated with this habitat type include spiny saltbush and iodine bush (also known as pickleweed; *Allenrolfea occidentalis*). Examples of this vegetation type are found near Ivanpah Dry Lake.

Open Channel
Not recognized by Holland because it generally lacks vegetation, this community was comprised of open, sandy areas adjacent and within washes and drainages, with a sparse cover of riparian and/or upland plant species. Examples of this vegetation type are found in the Cajon Pass area.

Badlands

Not recognized by Holland because it generally lacks vegetation, badlands consist of extremely rough terrain and are found in arid and semiarid regions. This land form is generally sparsely vegetated, and formed on soft, semi-consolidated soils with low permeability and cohesion. Intricate erosion and drainage patterns made up of gullies and sharp-crested ridges with steep slopes are formed from erosion and scouring. The soils that are typically found in desert badlands include interbedded clay shale, silty shale, and sandy/gravelly units. An example of this habitat type is found near MP 171.5.

Valley and Foothill Grassland (Holland Code 42000)

Valley and foothill grassland habitat is typically dominated by perennial, tussock-forming native grasses. Native and non-native annuals usually occur between the perennial grasses, often exceeding the bunch grasses in total percentage of area cover. This community usually occurs on fine-textured or clay soils that are moist to water-logged during winter, but dry during the summer (Holland 1986). Examples of this vegetation type are found in the Cajon Pass area.

Non-Native Grassland (Holland Code 42200)

Non-native grassland habitat generally occurs on fine-textured loam or clay soils, which are moist or even waterlogged during the winter rainy season and very dry during the summer and fall. It is characterized by a dense to sparse cover of annual grasses, often with native and non-native annual forbs (Holland 1986). Typical grasses within the study region include wild oat (*Avena* sp.), soft chess (*Bromus mollis*), red brome, ripgut brome (*Bromus diandrus*), and foxtail fescue (*Vulpia megalura*). Characteristic forbs include red-stem filaree (*Erodium cicutarium*), mustard (*Brassica* sp.), tarweed (*Hemizonia* sp.), California goldfields (*Lasthenia chrysostoma*), and owl's clover (*Orthocarpus purpurascens*). Examples of this vegetation type are found in the Cajon Pass area.

Ornamental (Holland Code 11000)

Ornamental vegetation consists of landscape plantings typically associated with development such as buildings and roads. Pepper trees (*Schinus* spp.), oleander (*Nerium oleander*), eucalyptus (*Eucalyptus* spp.), and ice plant (*Carpobrotus* spp.) are common ornamental species found associated with this vegetation type. Examples of this vegetation type are found in or near developed areas throughout the Proposed Project area.

Eucalyptus woodland, a subtype of the ornamental community, is typically characterized by dense stands of gum trees. Plants in this genus, imported primarily from Australia, were originally planted in groves throughout many regions of coastal California as a potential source of lumber and building materials, for windbreaks, and for their horticultural novelty. They have expanded through natural regeneration, particularly in moist areas sheltered from strong coastal winds. Gum trees naturalize readily in the state and, where they form dense stands, tend to completely supplant native vegetation, greatly altering community structure and dynamics. Very few native plants are compatible with eucalyptus. An example of this vegetation type is found near Glen Helen Park.

Disturbed Vegetation / Degraded Bare Ground (Holland Code 11300)

A disturbed vegetation community typically develops on sites with heavily compacted soils following intense disturbance such as grading. This habitat type is typically dominated by non-native, broad-leaf herbaceous species including Russian thistle (*Salsola tragus*), mustards (*Brassica* or *Hirschfeldia* spp.), filaree (*Erodium* spp.), thistles (*Centaurea* or *Cirsium* spp.), and occasionally with a subdominant percent cover of non-native annual grasses. Interspersed through this habitat type are areas of degraded bare ground that are usually created by some form of physical disturbance that inhibits the growth of vegetation. Examples of this habitat type are found in or near developed areas throughout the Proposed Project area.

Developed (Holland Code 12000)
Developed areas include roads, built structures, and associated infrastructure. Areas generally considered developed include dirt and paved roads, transmission lines, underground gas pipelines, railroads, and any other permanent structures. Examples of this habitat type are found throughout the Proposed Project area, with the highest concentrations found near the Colton, CA and Las Vegas, NV areas.

3.7.1.1.2 Special-Status Plant Species

The following analysis in the EIS/EIR considers impacts to special-status plant species. Special-status plant species are defined herein as those species listed by the United States Fish and Wildlife Service (USFWS), BLM, and USFS as being of elevated conservation concern. All special-status plant species have been identified due to dwindling populations, or merely unknown population status and the need for additional study. For purposes of this EIS/EIR, special-status species are defined as USFWS Federally Threatened (T) or Endangered (E); BLM Sensitive (S) species; and USFS Region 5 Sensitive (S) or Management Indicator Species (MIS). In addition, the USFS has designated species as Watch List (WL) species. The BLM and USFS designations include species in certain categories as defined by the CNPS. Nevada maintains a list of Critically Endangered plant species, and species may be designated as Threatened or Endangered under the California Endangered Species Act (CESA).

Table 3.7-1 lists the special-status plant species that were identified during surveys within the Proposed Project area, or are likely to be present due to the presence of modeled habitat within or near to the Proposed Project area. The following paragraphs provide descriptions of the occurrence and life histories of these species.

Federal Threatened and Endangered Species

There were six USFWS E or T plant species that were identified as either known to occur or have the potential to occur within the Proposed Project area due to the presence of modeled habitat within or near to the Proposed Project area. These species are Braunton's milkvetch (*Astragalus brauntonii* (E)), Nevin's barberry (*Berberis nevinii* (E)), San Bernardino bluegrass (*Poa atropurpurea* (E)), Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum* (E)), slender-horned spineflower (*Dodecahema leptoceras* (E)) and thread-leaved brodiaea (*Brodiaea filifolia* (T)). These species all occur in the Mediterranean climate zone.

Of these six species, the slender-horned spineflower, the Santa Ana River woolly-star, and the Nevin's barberry were determined to occur within the Proposed Project area and are discussed further below. The three remaining species; Braunton's milkvetch, San Bernardino bluegrass, and thread-leaved brodiaea were determined not to occur within the Proposed Project area, because the Proposed Project does not overlap modeled or designated critical habitat nor were any of these species observed during the 2008 and 2009 botanical surveys (URS Corporation 2010a). These three federally protected plant species are not discussed further in this document, but a detailed discussion of each of these species can be found in the *Calnev Expansion Project Biological Resources Technical Report* (URS Corporation 2010a).

Slender-horned Spineflower (*Dodecahema leptoceras*)
USFWS: E; CDFG: CA-E; CNPS: List 1B.1

This short-lived annual occurs on alluvial benches in alluvial scrub habitat between 656 and 2,297 ft in elevation. The small white flowers with pink and yellow accents bloom from April to June. Plants are typically found in areas with no exotic species or obvious ground disturbance, although occurrences in alluvial benches and streambanks receive annual scouring. Much of this plant's habitat has been lost to channelization and flood control projects, sand and gravel mining, development, and off-highway vehicle activity. Presence of this species is assumed through the USFS modeled habitat for this species because the 2008 and 2009 botanical surveys (URS Corporation 2010a) were unable to determine absence of this species based on USFS Habitat Suitability and Survey Requirements. A population of several hundred individuals of this species was found in the Cajon Pass area during the 2008 botanical survey. There is also a historical CNDDB location for this species adjacent to the Proposed Project, just to the north of Glen Helen Park and a known historic population outside of the Proposed Project area near Devore, California.

Nevin's Barberry (*Berberis nevinii*)
USFWS: E

Nevin's Barberry (NEBA) is listed as Endangered by the USFWS (USFWS 1998a). This evergreen perennial shrub generally grows on sandy soils in low-gradient washes, alluvial terraces, and canyon bottoms, along gravelly wash margins, or on coarse soils on steep, generally north-facing slopes in association with the following plant communities: alluvial scrub, chamise chaparral, coastal sage scrub, oak woodland, and/or riparian scrub or woodland (USFWS 2009b). Characterizing NEBA habitat is difficult due to the varied soils, bedrock substrates, and topography on which this species naturally occurs (USFWS 2008b). This endemic southern California species is typically found between 427 and 518 m (1,400 and 1,700 ft) in elevation, although one population in the vicinity of Vail Lake exists at 823 m (2,700 ft).

Many historical occurrences have been extirpated. Known occurrences are scattered within southern California, with native populations found in the vicinity of Vail Lake (Riverside County), San Timoteo Canyon Area near Loma Linda (Riverside/San Bernardino County), Cobal Canyon, and Lopez Canyon near the San Fernando Valley (Los Angeles County) (USFWS 2009b). According to the USFS, suitable habitat for this species would most likely occur along the lower edges of the SBNF adjacent to the San Timoteo Canyon population in the Crafton Hills area and on the west side of the San Jacinto Mountains in the badlands area along the San Jacinto fault towards Bautista Canyon (USFS 1999).

Botanical surveys were conducted along the proposed 16 inch line route in 2008 and 2009, and no NEBA individuals were detected. The nearest known occurrence of this species is approximately 15 miles south of the proposed Project in the San Timoteo Canyon/Loma Linda area. USFS modeled habitat exists within the action area up to an altitude of approximately 2,800 ft, which occurs along the proposed alignment in the vicinity of MP 22 (just upstream of Blue Cut Narrows). Much of the undisturbed native chaparral and sage scrub habitat within the action area up to MP 22 has the potential to support this species because the known habitat preferences of this species are relatively broad.

Threats to this species include urbanization, off-road vehicle use, horseback riding, and road widening (USFWS 1998a).

Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*)
USFWS: E

Santa Ana River woolly-star (SARWS) is listed as Endangered by the USFWS (USFWS 1987). This perennial herb grows to approximately one meter in height, and has a gray-green stem and leaves. The flowers are bright blue and found on heads of about 30 blossoms each (USFWS 1987). SARWS occurs in sandy soils on river floodplains or terraced fluvial deposits at the base of the San Bernardino Mountains. This species occurs between 91 to 610 m elevation and flowers between May and September (CNPS 2008). It is known to occur in southern California within the Santa Ana River watershed between the City of Riverside and the mouth of Santa Ana Canyon. Currently, other extant occurrences are recorded at Lytle Creek and within Cajon Wash south of Institution Road. The CNPS inventory notes these occurrences as one extended but fragmented population.

SARWS was not detected during botanical surveys in 2008 and 2009. A CNDDB record from 2006 occurs within the action area approximately 0.3 mile north of MP 23. However, upon further review of the CNDDB record, it is apparent that the plant was misidentified at this location (CNDDB 2008). In 2009, botanists confirmed that the specimen is indeed giant woolly-star and not SARWS. The nearest extant records for SARWS are within Cajon Wash, downstream of Institution Road (Wood and White 2008). These records do not exist within the action area. The Project, however, borders the western edge of the Santa Ana River Preserve along Institution Road. Calnev will avoid this preserve by reducing the width of their construction area and restricting ground disturbing activities to an existing road, to the extent practicable. Additional suitable habitat for this species exists in the vicinity of the Lytle Creek crossing (MP 11-12), and where the Proposed Project crosses Cajon Wash along Institution Road. No SARWS individuals were detected during surveys of these areas.

Threats to this species include flood control projects, sand and gravel mining, urbanization, and farming. An estimated 90 percent of its original habitat has been eliminated (Stephenson and Calcarone 1999).

Other Special-Status Plant Species

In addition to the six federal T&E plant species discussed above, coordination with the agencies, results of a California Natural Diversity Database (CNDDB) query (CDFG 2008a, 2008b), and a review of the CNPS Inventory of Rare and Endangered Plants resulted in identification of an additional 107 special-status plant species that were determined to have some potential to occur within the Proposed Project area (URS Corporation 2010a). Of these, 8 special-status plant species were detected within and/or directly adjacent to the Proposed Project during the 2008 and 2009 botanical surveys (Table 3.7-1).

The following subsections provide a brief species account for the 8 special-status plant species observed during the botanical surveys conducted in 2008 and 2009. In addition, the *Calnev Expansion Project Biological Resources Technical Report* (URS Corporation 2010a) lists all other special status plant species that were identified as having the potential to occur in the Proposed Project area, but were not observed during 2008 and 2009 botanical field surveys.

Plummer's Mariposa Lily (*Calochortus plummerae*)
USFS: S; CNPS: List 1B.2

This bulbiferous herb is a member of the lily family and occurs in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grasslands between 328 and 5,577 ft in elevation. The blooming period is May through July, with most populations beginning to bloom in early June. Seven individuals were found within the Horizontal Directiopn Drill (HDD) work area near MP 25.5 on a ridge approximately 150 feet east of the Wagon Train alternative. One individual was found near MP 26 (but outside of the Project study area).

Parry's Spineflower (*Chorizanthe parryi* var. *parryi*)
USFS: S; BLM: Sensitive (CA); CNPS: List 1B.1

This annual herb is a member of the buckwheat family and occurs in rocky or sandy openings found in chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands from 902 to 4,003 ft in elevation. Blooming occurs April through June. A population of approximately 134 individuals of Parry's spineflower was found in the Cajon Pass area.

White-bracted Spineflower (*Chorizanthe xanti* var. *leucotheca*)
USFS: S; BLM: Sensitive (CA); CNPS: List 1B.2

This annual herb is a member of the buckwheat family and typically occurs in sandy or gravelly areas within Mojave Desert scrub and pinyon-juniper woodland from 984 to 3,937 ft in elevation. Blooming occurs April through June. Eight white-bracted spineflower were found in the Cajon Pass, and one additional individual was observed approximately 300 feet east of the Proposed Project area in the Cajon Pass.

Southern California Black Walnut (*Juglans californica*)
USFS: WL; CNPS: List 4.2

Southern California black walnut is a deciduous tree with pinnate leaves endemic to Southern California. It can be found in chaparral, sage scrub, and cismontane woodland, between 164 and 2,953 ft in elevation. Inflorescences in the form of catkins bloom in March through August. Five individual trees, consisting of both mature trees as well as saplings, were found in the Cajon Pass area.

Crowned Muilla (*Muilla coronata*)
CNPS: List 4.2

Crowned muilla is a bulbiferous annual herb in the Lily Family. This species is typically found above 2500 ft, and is associated with a variety of habitats, including pinyon and juniper woodland, Mojave desert scrub, chenopod scrub, and Joshua tree woodland. The flowers are white with yellow stamens. Blooming occurs from March through April. A small population of about ten was observed in the vicinity of Nepo, CA. Another small population of five was observed near Sloan, NV.

Short-joint Beavertail Cactus (*Opuntia basilaris* var. *brachyclada*)
USFS: Sensitive; BLM: Sensitive (CA); CNPS: List 1B.2

This California endemic cactus has showy pink flowers that appear in April through June. It is typically found in chaparral habitat. This species is threatened by development, collecting, and off-highway vehicle use. The Cajon Pass area supported two populations, one population of about 200 individuals and a second population of about 150 individuals.

White-margined Beardtongue (*Penstemon albomarginatus*)
BLM: Sensitive (CA and NV); CNPS: List 1B.2

White-margined beardtongue is a perennial herb, 6 to 12 in tall, with a distinctively pallid color. The spatula-shaped leaves and the calyx lobes are conspicuously white-margined. Pink-lavender flowers with darker purple accents appear in March through May. White-margined beardtongue is found typically in open sandy soils that are not regularly disturbed. This herb is a BLM special status species and is covered under the Clark County Multiple Species Habitat Conservation Plan, which has a conservation goal of no net unmitigated loss of occupied habitat for this species. A large population of about 1,000 individuals was observed near Jean, NV in creosote bush scrub with winterfat (*Krascheninnikovia lanata*), big galleta (*Pleuraphis rigida*) and burroweed (*Ambrosia dumosa*); growing on silty sand. The largest concentration was about 200 individuals.

Coulter's Matilija Poppy (*Romneya coulteri*)
CNPS: List 4.2

This rhizomatous herb is a member of the poppy family and occurs in chaparral and coastal scrub, often following fire, from 65 to 3,900 ft in elevation. It has tall stems up to 6.6 ft long with large white flowers that are up to 6 in across and have a bright yellow center. One individual exists on the edge of the Proposed Project area between the Cajon Pass and Baldy Mesa areas.

Table 3.7-1 Special-Status Plant Species Recorded[1] or with a High Potential to Occur in the Proposed Project Area

Common Name	Scientific Name	STATUS				HABITAT ASSOCIATIONS	Location Name or MP of Occurrence
		Federal	California	Nevada	CNPS		
slender-horned spineflower	*Docecahema leptoceras*	FE	E	None	1B.1	Chaparral, cismontane woodland, coastal scrub (alluvial fan)/sandy. Elevation 656-2,493 ft. Blooming period Apr-Jun.	Present in Cajon Pass. Includes modeled habitat (URS 2010a)
Nevin's barberry	*Berberis nevinii*	FE	E	None	1B.1	Chaparral, cismontane woodland, coastal scrub, riparian scrub on sandy or gravelly soils. Elevation 274-825 meters. Blooming period Mar-Jun.	Includes modeled habitat (URS 2010a)
Santa Ana River woolly-star	*Eriastrum densifolium* ssp. *sanctorum*	FE	E	None	1B.1	Chaparral, Alluvial scrub. Elevation 91-610 meters. Blooming period May-Sep.	Includes modeled habitat (URS 2010a)
Plummer's mariposa lily	*Calcochortus plummerae*	USFS:S	None	None	1B.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Elevation 328-5,577 ft. Blooming period May-July.	Present in Cajon Pass
Parry's spineflower	*Chorizanthe parryi* var. *parryi*	USFS:S BLM: S(CA)	None	None	1B.1	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Elevation 328-5,577 ft. Blooming period May-July.	Present in Cajon Pass
white-bracted spineflower	*Chorizanthe xanti* var. *leucotheca*	USFS:WL USFS:S BLM:S(CA)	None	None	1B.2	Mojave desert scrub, pinyon and juniper woodland. Elevation 984-3,937 ft. Blooming period April-June.	Present in Cajon Pass
Southern California black walnut	*Juglans californica*	USFS:WL	None	None	4.2	Chaparral, cismontane woodland, coastal scrub. Elevation 164-2,953 ft. Blooming period Mar-Aug.	Present in Cajon Pass
crowned muilla	*Muilla coronate*	USFS:WL	None	None	4.2	Associated with a variety of habitats, including pinyon and juniper woodland, Mojave desert scrub, chenopod scrub, and Joshua tree woodland. Above 2,510 ft, Blooming period Mar-Apr.	Present in Nepo, CA and Sloan, NV
short-joint beavertail cactus	*Opuntia basilaris* var. *brachyclada*	USFS:S BLM: S (CA)	None	None	1B.2	Chaparral, alluvial scrub, Joshua tree woodland, Mojave desert scrub, pinyon and juniper woodland. Elevation 1,394-5,906 ft. Blooming period April-June.	Present in Cajon Pass
white-margined beardtongue	*Penstemon albomarginatus*	BLM: S (CA and NV)	None	S2	1B.2	Mojave desert scrub, desert scrub; elevation 2,100 - 3,494 ft; blooming period is March-May.	Present near Jean, NV
Coulter's matilija poppy	*Romneya coulteri*	None	None	None	4.2	Chaparral and coastal scrub. Elevation 66 to 3,937 ft. Blooming period May-July.	Present between Cajon Pass and Baldy Mesa

Table 3.7-1 Special-Status Plant Species Recorded[1] or with a High Potential to Occur in the Proposed Project Area

		STATUS					
Common Name	*Scientific Name*	Federal	California	Nevada	CNPS	HABITAT ASSOCIATIONS	Location Name or MP of Occurrence

[1] The special-status plant species were observed during the 2008 and 2009 botanical field surveys.

Key:
FE = federally endangered
BLM: S = BLM Sensitive
USFS:S = United States Forest Service (USFS) sensitive
USFS: WL = USFS watch list
E = California endangered
Nevada: S2 = Nevada Imperiled

California Native Plant Society (CNPS) Ranking System:
List 1A: Plants Presumed Extinct in California
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
List 3: Plants About Which We Need More Information - A Review List
List 4: Plants of Limited Distribution - A Watch List

3.7.1.2 Wildlife

Spanning over 234 miles, the pipeline ROW crosses varied habitats, which together support a diversity of wildlife species. Common species observed during the field surveys in the segment of the Proposed Project from Colton to Cajon Pass included the painted lady butterfly (*Vanessa cardui*), amphibians including the California chorus frog (*Pseudacris cadaverina*) and Pacific chorus frog (*Pseudacris regilla*), reptiles such as the western fence lizard (*Sceloporus occidentalis*), California side-blotched lizard (*Uta stansiburinana elegans*), and striped racer (*Masticophus lateralis*), birds, including the Belted Kingfisher (*Megaceryle alcyon*), California Quail (*Callipepla californica*), Common Raven (*Corvus corax*), Western Scrub-Jay (*Aphelocoma californica*), Lawrence's Goldfinch (*Spinus lawrencei*), White-throated Swift (*Aeronautes saxatalis*), and Wrentit (*Chamaea fasciata*). Mammals include the California ground squirrel (*Spermophilus beecheyi*), mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), mountain lion, and bobcat (*Lynx rufus*). Aquatic invertebrates and fish were also observed and included dragonflies, damselflies, and the Santa Ana speckled dace (*Rhinicthys osculus* spp.).

Common species observed during field efforts along the portion of the Proposed Project that is within the Mojave Desert include bullfrog (*Rana catesbeiana*), California toad (*Anaxyrus boreas halophilus*), desert horned lizard (*Phrynosoma platyrhinos*), desert spiny lizard (*Sceloporus magister*), Great Basin whiptail (*Aspidoscelistigris tigris*), red coachwhip (*Masticophus flagellum piceus*), Mojave rattlesnake (*Crotalus scutalatus*), Black-throated Sparrow (*Amphispiza bilineata*), Turkey Vulture (*Cathartes aura*), Scott's Oriole (*Icterus parisorum*), desert kangaroo rat (*Dipodomys deserti*), and desert kit fox (*Vulpes macrotis arsipus*). A list of all wildlife species encountered during surveys is provided in the *Calnev Expansion Project Biological Resources Technical Report* (URS Corporation 2010a). Protected species or species of concern identified during agency consultation are discussed in more detail below.

3.7.1.2.1 Special-Status Wildlife Species

Special-status wildlife species are defined herein as those species listed by the United States Fish and Wildlife Service (USFWS), BLM, United States Forest Service (USFS), California Department of Fish and Game (CDFG), and the Nevada Department of Wildlife (NDOW) as being of elevated conservation concern. These lists include categories such as threatened, endangered, sensitive, and "species of concern". All special-status wildlife species have been identified due to declining populations, or merely unknown population status and the need for additional study. Specific to each agency, special-status species are defined by the USFWS as Federally Threatened (FT), Endangered (FE), or birds of conservation concern (BCC); by the BLM as Sensitive (S) species; by the USFS as Sensitive (S), Watch List (WL), or Management Indicator Species (MIS). The CDFG list includes Threatened species (CA-T), Endangered species (CA-E), Species of Special Concern (SSC), Watch List (WL) and Fully Protected species (FPS). Nevada maintains a list of Protected wildlife species.

To support analysis in this EIS/EIR, the U.S. Forest Service has identified 35 special status wildlife species with potential to occur in the Proposed Project area. Of these species, 29 are USFS-watch list species and 6 are classified by USFS as Region 5 sensitive wildlife species (Table 3.7-2a and 2b).

Table 3.7-2a USFS Watch List Species within the Proposed Project Area in the San Bernardino National Forest

Species USFS identified as known to occur	Desert night lizard, merlin, western screech owl, purple martin, yuma myotis, long-legged myotis, western small-footed myotis, and western spotted skunk, coast patch-nosed snake, American dipper, MacGilivray's warbler, ringtail, and American badger.
Species USFS identified as possible to occur	greenest tiger beetle, San Gabriel Mountains blue butterfly, arboreal salamander, garden slender salamander, Great Basin collared lizard, common snipe, turkey vulture [breeding], northern harrier, sharp-shinned hawk [breeding], ferruginous hawk, northern pygmy owl, northern saw-whet owl, Mexican whippoorwill, Lewis' woodpecker, California horned lark [breeding], and southern grasshopper mouse.

Table 3.7-2b USFS Region 5 Sensitive Wildlife Species within the Proposed Project Area in the San Bernardino National Forest

Species USFS identified as known to occur	San Diego cactus wren, San Bernardino ringneck snake, two-striped garter snake, and American peregrine falcon.
Species USFS identified as possible to occur	California leaf-nosed bat and western red bat.

Species accounts are provided for the following special-status wildlife species for which focused surveys were conducted, for which sightings were recorded during general or other species-specific wildlife surveys, and for those species of particular concern as noted by discussions with resource agencies, even though these species may have moderate or low occurrence potential. There are a total of 34 special-status wildlife species that were identified based on the criteria above and for which species accounts are provided. Each species account includes a habitat description for each species, as well as a description of the location of the species as identified during the field surveys; refer to Table 3.7-3 for a summary of the special-status wildlife species discussed in this section. For a detailed description of survey methods that were used by Calnev, please refer to the *Calnev Expansion Project Biological Resources Technical Report* (URS Corporation 2010a).

Federal Threatened and Endangered Species

Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*)
USFWS: FE

The Delhi Sands flower-loving fly (DSFLF) is found in habitat characterized by wholly or partly consolidated dunes containing sands of the Delhi series. This soil series covers about 40 square miles in San Bernardino and Riverside counties, over 97 percent of which has been converted to agriculture, developed for urban or commercial uses, or otherwise adversely altered (USFWS 1996). This fly is now restricted to several isolated locations in the San Bernardino area, included around the cities of San Bernardino, Colton, West Colton, and Rialto. The remaining population sites are small areas vulnerable to development. The species' habitat is characterized by the presence of three plant species: California buckwheat, California croton (*Croton californicus*), and telegraph weed (*Heterotheca grandiflora*) (AMEC 2007).

The results of the AMEC 2007 and 2008 focused surveys indicate that DSFLF was identified on parcels immediately adjacent to the North Colton Terminal. Occupied DSFLF habitat also occurs in the vicinity of the existing CALNEV 8-inch pipeline near the North Colton Terminal. Surveys for the DSFLF adjacent to these existing lines did not detect any individuals. Based on the survey results, likely occupied DSFLF habitat occurs just outside the northeast corner of the North Colton Terminal where a new 400 ft long transmission line would be constructed to provide power to the new Silver Lake Pump Station. Though permission was not granted by the landowner to survey this area, it is likely occupied by DSFLF because it supports suitable habitat and the adjacent parcels are occupied.

Arroyo Toad (*Bufo californicus*)
USFWS: FE; USFS: MIS; CDFG: SSC

The arroyo toad is threatened by habitat destruction and alteration due to short- and long-term changes in river hydrology, including construction of dams and water diversions; alteration of riparian wetland habitats by agriculture and urbanization; construction of roads; site-specific damage by off-highway vehicle use and other recreational activities; overgrazing; and mining activities. Arroyo toads are also threatened by introduced nonnative predators (*e.g.,* bullfrogs and predatory fish); drought; periodic fires; unseasonal water releases from dams; livestock grazing; and light and noise pollution from adjacent developments and campgrounds (USFWS 2009a).

Historically, arroyo toads occurred from the upper Salinas River system on Fort Hunter Liggett Military Reservation, Monterey County, at the northern end of its range, south through the Santa Ynez, Santa Clara, and Los Angeles River Basins; the coastal drainages of Orange, Riverside, and San Diego counties; to the Arroyo San Simeon system in Baja California, Mexico (Campbell et al., 1996). Historical and some recent occurrences of arroyo toad near the Proposed Project have been noted in the Mojave River and its tributaries, Cajon Wash, and Deep, Horsethief, and Little Horsethief Creeks in San Bernardino County.

The overall coloration of this relatively small toad ranges from olive green or gray, to light brown with dark spots. Recognized until recently as one of two subspecies of the southwestern toad, (*Anaxyrus microscaphus),* the arroyo toad is now recognized as its own species, *Anaxyrus californicus.* The species is distinguished from other toads by the pale, V-shaped coloration that crosses the top of the head between the eyes, the pale coloration on the anterior portion of the parotoid glands behind the eyes, and the lack of a white mid-dorsal stripe.

Slow flowing, shallow, sandy pools along low-gradient sections of streams with sand-gravel flood terraces are essential breeding habitat for this species (USFWS 1999). After the breeding season (March to July and sometimes into September), Arroyo toads move from their breeding habitat and burrow in flood terraces and adjacent upland habitats. Foraging and overwintering habitats include valley-foothill and desert riparian, and open mixed chaparral and sage scrub upland habitats from sea level to just above 4,000 ft in elevation. They emerge from their summer hibernation after the first major winter rain events. Toad burrows are typically within 4,921 ft of their breeding habitat and less than 82 ft in elevation above the stream channel (Sweet 1991, 1993).

No arroyo toads were observed during the limited 2008 surveys, which focused on tributaries to Cajon Wash and not in Cajon Wash itself. Arroyo toads were already known to occur in Cajon Wash and as such, presense/absence for Cajon Wash were not conducted.. A habitat assessment was conducted on April 22, 2008 of the various tributaries to Cajon Wash. Habitat suitability, based on USFS modeled habitat, is shown on Figure 3.7-1. USFS modeled habitat occurs from MP 12 through MP 28 within the Proposed Project area. According to the USFS, arroyo toad occupied habitat within the Proposed Project area occurs from MP 15 through 26 (USFS 2008a). DCH was designated for this species in 2005 and modified in 2011 (USFWS 2011). The Proposed Project would traverse through this DCH from MP-17a to MP-25.

Tributaries that lacked surface flows were eliminated by Calnev as potential breeding habitat since arroyo toad breeding cannot occur without water. Some of these dry washes may provide potential upland foraging and aestivation habitat for arroyo toads (Figure 3.7-1), which are known to travel up to 0.6 mi from their breeding habitat (USFWS 1999b). However, the USFWS Survey Protocol for the arroyo toad (1999a) is designed to detect toads during their breeding season in breeding habitat, when and where they are most likely to be observed.

Two tributaries to Cajon Wash were determined to potentially support arroyo toad breeding, including Crowder Canyon and Cleghorn Canyon. Crowder Canyon had observable surface flow throughout the duration of the arroyo toad surveys, except for the last two. Surveys did note that flow was intermittent at the downstream end of this canyon near the confluence with Cajon Wash. Flow varies each year. Upstream from the surveyed portion this drainage supported a modest flow. Crowder Canyon is relatively narrow, but the thalweg consists of medium to fine sands distributed throughout. The channel, which is near MP 24.5, widens to approximately 15-20 ft of sandy substrate just upstream of the large culvert under I-15 and the confluence with Cajon Wash. This substrate, combined with modest sheet flow, is suitable for arroyo toad breeding.

Cleghorn Canyon is located near MP 23 and conveyed more flow than Crowder Canyon. The substrate of Cleghorn Canyon is primarily large rocks and boulders, with occasional patches of gravel and sand. This substrate facilitates the creation of pools and slower moving water, which could potentially support arroyo toad breeding. However, no arroyo toads or arroyo toad calling was observed within this drainage, including in the vicinity of its confluence with Cajon Wash.

Focused arroyo toad surveys were not conducted at the Mojave River because this species has not been documented within this general vicinity for some time (Stebbins 1951; CDFG 2008a), and because the habitat at this location is degraded. Extant populations of arroyo toad are present between Silverwood Lake and Victorville (USFWS 2009a). Introduced American beavers (*Castor canadensis*) are present in this area and are actively felling trees along the river to create dams and deep midstream ponds. In between the deep pools, the stream has a relatively high and concentrated flow that precludes the formation of breeding pools. Numerous known arroyo toad predators are also present, including non-native fish, crayfish (*Procambarus* spp.), and bullfrogs. Within the Proposed Project area, the uplands adjacent to the site are developed with ostrich farms on the east side, and the west side supports disturbed desert scrub. The site also receives a fair amount of recreational use, with off-highway vehicle tracks, trash, and campsites present throughout.

Desert Tortoise (*Gopherus agassizii*)
USFWS: FT; CDFG: CA-T; NV-T

The desert tortoise inhabits areas of the Mojave including parts of California, Nevada, and Utah. This member of the genus *Gopherus* is one of three found in the U.S. and is relatively large, with adults measuring up to 15 inches in shell length. Desert tortoise habitat consists of firm but not hard ground, usually soft sandy loams and loamy sands, to allow for burrow construction (Karl 1983). They are not found in areas of very cobbly soil or in dry lakes (Karl 1983, 1988). Desert tortoise prefer gravelly desert washes, arid grasslands, rocky hillsides, and canyon bottoms in association with creosote bush, Joshua tree woodland, and saltbush scrub vegetation communities. The species generally occurs below 4,000 ft elevation (Karl 1983; Stebbins 1985).

Desert tortoises are usually most active from early March through early June and again between September and early November (Marlow 1979). The species is herbivorous and is most active when plants are available for foraging or when pooled water is available for drinking. They typically have home ranges from 27-131 acres and these figures probably underestimate the actual area familiar to the tortoise (Berry 1986). Individuals commonly traverse 1,476-2,625 ft/day within their home range and males have been recorded to travel 0.6 miles within their home range. Desert tortoises have been confirmed to disperse extended distances up to 2 miles in 16 days and 4.5 miles in 15 months (Berry 1986). A desert tortoise matures at approximately 15-18 years of age (Turner et al., 1987), and can live 50 to 100 years.

This widespread and once common species is rapidly declining in numbers because of various factors, including the spread of a fatal respiratory disease, livestock grazing, increases in raven populations that prey on juvenile tortoises, illegal collection, habitat destruction in the form of urban development, conversion of land for agricultural use, and off-road vehicle use. The Project crosses through several areas of DCH for desert tortoise in California (USFWS 1994).

Approximately 200 miles of the project occur within the range of the desert tortoise, and 30 miles of the project are within critical habitat. Calnev assumed presence of the desert tortoise within DCH, and did not conduct surveys in those areas (Figure 3.7-2). Of the area surveyed, 39 desert tortoises were observed in 2008 in the Proposed Project area. These desert tortoises were distributed along the proposed alignment between Mojave River, CA and Sloan, NV. In addition to the live tortoises, 201 burrows, 28 carcasses, nine scat locations, and one set of desert tortoise tracks were observed along the Project alignment during focused surveys. Additional tortoise and tortoise sign were observed incidentally during the other biological surveys that were conducted within the Proposed Project area, bringing the totals to 56 tortoises, 209 potential burrows, 29 carcasses, 13 scat locations, and 1 track location.

USFS modeled habitat for desert tortoise exists within the Proposed Project area, from approximately the upper portion of the Cajon Pass through the Baldy Mesa area (approximately MP-26 to MP-31). USFS did not require desert tortoise surveys within this area; however, desert tortoises are known to occur in low densities on USFS land within the Baldy Mesa area. A desert tortoise burrow was found within this area by a USFS employee (USFS 2008a), and also in 2011 (K. Meyer pers. comm.), observations of desert tortoises occurred along FS roads 3n21, 3n24, and just east of FS land in 1999, 2001, and 2011.

Coastal California Gnatcatcher (*Polioptila californica californica*)
USFWS: FT; CDFG: SSC

The Coastal California gnatcatcher (CAGN) is a small gray songbird that is a non-migratory resident to coastal sage scrub and Riversidean sage scrub habitats in southern California. The species ranges from Ventura and Los Angeles Counties south to approximately 30° north latitude in Baja California. Studies of the species' habitat preferences indicate that California sagebrush (*Artemisia californica*), flat-topped buckwheat (*Eriogonum fasciculatum*), and Encelia (*Encelia* spp.) are the primary plants used by CAGNs when foraging for insects (Atwood and Bontrager 2001, Mock 2004). The territory size requirements of CAGN vary with habitat quality. Documented home ranges have varied from 6 to 45 acres in San Diego County (Mock 2004). The USFWS has estimated that sage scrub habitat has been reduced by 70 to 90 percent of its historical extent (USFWS 1991), and the United States CAGN population is estimated between 1,800 and 2,500 pairs (Atwood 1990, 1992). In 1980, the estimated population of CAGN in San

Bernardino County was 50 pairs. The current CAGN population in San Bernardino County is unknown because of a lack of spatially unbiased surveys within potential habitat (Davis et al. 1998). In the vicinity of the Proposed Project, current populations are known from Lytle Creek, Cajon Wash, Santa Ana River Wash, Jurupa Hills, Etiwanda Wash, and Rialto.

The primary cause of this species' decline is the cumulative loss of sage scrub vegetation to urban and agricultural development. Other factors contributing to the loss of habitat include wildfire and habitat type conversion. This species is nearly extirpated from Ventura and San Bernardino counties and is declining proportionately with the continued loss of sage scrub habitat in the four remaining southern California counties located within the coastal plain. Revised critical habitat for CAGN was designated in 2007 (USFWS 2007). No DCH is present within the survey area for the Project. The nearest areas of DCH exist approximately 2 miles southeast and approximately 3 miles southwest of the Colton terminal.

No CAGN were observed during the 2008 surveys, but USFS modeled habitat does exist within the Proposed Project area in the vicinity of MP 15 through MP 19 (USFS 2001). Calnev assessed these areas for CAGN suitability. Based on Calnev's analysis, the habitat from MP 15 through MP 17 was not considered suitable habitat for CAGN at the time of the surveys, due to scouring and/or fire. The vegetation on the slope in proximity to MP 17 had been burned recently, and sage scrub vegetation has been replaced by non-native grasses. Of the portions of the alignment where permission to survey was granted, URS biologists identified approximately 281.1 acres of suitable CAGN habitat. The suitable habitat exists at the southern end of the alignment (locations between MP-10.5 and MP-19). The habitat onsite was considered to be moderate quality for CAGN and could become occupied in the future, especially if burned areas recover. The suitable gnatcatcher habitat identified within the Proposed Project area is part of a large block of natural open space, with natural connectivity to off-site areas of Riversidean sage scrub habitat known to support gnatcatchers.

Least Bell's Vireo (*Vireo bellii pusillus*)
USFWS: FE; USFWS: BCC; CA-E

The least Bell's vireo is a gray migratory songbird and one of four known subspecies of Bell's Vireo (Vireo bellii). The least Bell's vireo arrives in southern California in late March and early April and leaves for its wintering ground in September. Least Bell's vireo is restricted to riparian habitat and is most frequent in areas that combine an understory of dense young willows or mule fat with a canopy of tall willows. Because least Bell's vireos build their nests in dense shrubbery 3 to 4 ft above the ground (Salata 1984), they require young successional riparian habitat or older habitat with a dense understory. Nests are also often placed along internal or external edges of riparian thickets (USFWS 1998a).

Historically this subspecies of Bell's vireo was a common summer visitor to riparian habitat throughout much of California. Currently, least Bell's vireo is found only in riparian woodlands in southern California, with the majority of breeding pairs in San Diego, Orange, Santa Barbara, and Riverside counties. Populations of least Bell's vireo have been noted in Prado Basin and contiguous areas of the Santa Ana River, at the Mojave River, and Whitewater River. Breeding has been documented in Cajon Wash in the recent past near MP 21, Lost Lake, and also between MP 22 and MP 23 (USFS 2008a).

Least Bell's vireo's decline is due to loss, degradation, and fragmentation of riparian habitats within its range, combined with brood parasitism by the brown-headed cowbird. However, the most recent five year review has recommended that this species be down-listed to threatened status due to increases in population size and distribution (USFWS 2006). There is no DCH for least Bell's vireo within the Proposed Project area. The nearest area of DCH exists approximately 7 miles southwest of the Colton Terminal along the Santa Ana River.

Based on the surveys completed by Calnev, nesting least Bell's vireo were observed only at the Mojave River survey location, although suitable habitat also exists at Cajon Wash. Additionally, USFS modeled habitat occurs in the vicinity of MP 16 through MP 22.5 within the Proposed Project area (USFS 2001). Historic CNDDB and USFWS records of least Bell's vireo occur both near MP 21 and near MP 23. During the course of project surveys, a transient least Bell's vireo was observed in April 2008 near MP 10.7. No breeding activities were documented and this individual was not observed on subsequent visits to this location.

At the Mojave River survey location, two least Bell's vireo nesting territories were observed, both approximately 300 ft from the proposed alignment, near MP 54. These territories remained occupied from May through July 2008. Nesting success was not confirmed, but considered likely since squeak calls and other behaviors indicative of interaction with fledglings were observed. Concurrent with the least Bell's vireo observations, brown-headed cowbirds were also commonly observed throughout both the Mojave River and Cajon Wash survey locations. Due to potential brood parasitism, the presence of brown-headed cowbirds could adversely affect the long-term success of least Bell's vireo breeding within these riparian areas. This species is considered present in the project Area in Cajon Pass and the Mojave River.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)
USFWS: FE; CA-E (all subspecies); Nevada Protected, FS Sensitive (Migrant)

The southwestern willow flycatcher is a summer breeding resident in riparian habitats in southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, and southwestern Colorado (USFWS 1995). It is most commonly found in riparian willows (*Salix* spp) dominated woodlands, with a well-developed herbaceous understory and the nearby presence of flowing or standing water, or minimally, soils that have periodically held water prior to the breeding season. In general, the riparian habitat of this species tends to be rare, isolated, small and/or linear patches, separated by vast expanses of arid lands. The southwestern willow flycatcher was listed as FE in February 1995 because of "extensive loss of riparian breeding habitat, brood parasitism by the brown-headed cowbird, and lack of adequate protective regulations" (USFWS 1995). This subspecies, along with all other subspecies of the willow flycatcher that occur within California, was listed as CA-E in December 1990. The number of southwestern willow flycatcher in Southern California was estimated to be less than 80 pairs in the early 1980s (Unitt 1984).

Spring migration of the endangered subspecies is relatively late, beginning in early May and extending through June (Unitt 1984). Another subspecies that breeds to the north in the northern Sierra Nevada Mountains and the Cascade Range (*E.t. brewsteri*) migrates through Southern California between early May and mid June. There is a period of overlapping occurrence in Southern California riparian habitats for these two very similar looking subspecies during spring and fall migration. Fall migration of both subspecies occurs rather early, beginning as early as late July for *extimus* and extending through mid-October for juvenile *brewsteri*. Most *extimus* have departed the state by mid-September. Eggs are typically laid between the end of May and the end of June. Dense willow thickets are generally required for nesting, and nests are often near standing water (Zeiner et al. 1990). A documented exception to this habitat requirement exists along the Upper San Luis Rey River, where the largest known colony in San Diego County primarily nests in coast live oak (*Quercus agrifolia*; Haas 2001). The USFS has identified occupied southwestern willow flycatcher habitat near MP 20, MP 21 through MP 22, and at MP 24. The extent of USFS-modeled habitat extends from approximately MP 14 to MP 29 (USFS 2008a; 2008b).

No confirmed breeding southwestern willow flycatchers were observed during the 2008 surveys, although suitable habitat was identified at both the Cajon Wash and Mojave River survey locations. Habitat on the west side of the freeway in Cajon Wash within the project area is considered excellent and the species has nested in Cajon Creek in the past. Additionally, the species is known from Lost Lake and in Sheep Creek (a tributary to Lone Pine Canyon). The habitat in Sheep Creek burned in 2009 but is expected to recover rapidlyMigrant willow flycatchers (*Empidonax traillii*, CA-E) were observed at Cajon Wash near MP 23 and the Mojave River near MP 54. Two calling individual migrant willow flycatchers were observed at the Mojave River site in June 2008 and one individual migrant willow flycatcher responded to a recorded vocalization at Cajon Wash in June, 2008. No evidence of nesting was observed for these individuals, and they were not observed during subsequent surveys. However, suitable habitat is present and presence will be assumed.

DCH for the southwestern willow flycatcher exists outside the Proposed Project area approximately 3.5 miles upstream (south) of the proposed crossing at MP 54 along the Mojave River near La Delta. Based on the field surveys, the Mojave River crossing supports high quality habitat for southwestern willow flycatcher, although recreational activities commonly occur at this site, as indicated by landowners nearby, along with trash and ubiquitous off-highway vehicle tracks. These activities may cause enough of a disturbance to preclude southwestern willow flycatcher breeding.

Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)
USFWS Candidate; USFS: S; CA-E; BLM-Sensitive California; Nevada Protected

Cuckoos are restricted to dense, tall cottonwood and willow riparian woodlands found along the broad, lower flood-plains of larger river systems. Typical habitat consists of large stands of cottonwoods, often mixed with willows, with a dense, well-developed understory often supporting blackberry (*Rubus* spp.), nettles (*Urtica* spp.), or wild grape (*Vitis* spp.). Patch size is a very important feature of cuckoo breeding habitat in California outside the Colorado River, with 9.5% occupation of 21 sites 49.4-98.8 acres in size, 58.8% occupation of 17 patches 101.3-197.7 acres in size, and 100% occupation of 7 patches greater than 197.7 acres in size. This tendency towards large patch size was found to be significant ($t=3.63$, $p<0.001$) (Laymon and Halterman 1989). The largest populations of breeding cuckoos in California occur along the Colorado River and at the edge of the Mojave Desert along the south fork of the Kern River near Weldon (Laymon 1998; Zeiner *et al.* 1990). Large populations of WYBC also occur along the Sacramento River from Red Bluff to Colusa (Laymon 1998). This species was formerly much more common and widespread throughout lowland California but has decreased drastically in abundance due to riparian habitat loss. Cuckoos primarily feed by gleaning for insects in foliage, and occasionally prey on frogs and lizards, or feed on fruit (Zeiner *et al.* 1990).

No WYBC were observed during the 2008 surveys, although suitable habitat exists at the Mojave River survey location (near MP 54). Suitable habitat for this species is not present at Cajon Wash. Contiguous riparian habitat following the course of the Mojave River extends well beyond the Proposed Project area, with a large patch in the Project vicinity extending beyond 670 acres. Within the Proposed Project area; however, the habitat is relatively constrained, with a minimum width of 450 ft, and maximum width of approximately 1,500 ft. The understory of the riparian habitat at the Mojave River within the Proposed Project area consists of nettles, willow weed (*Polyganum lapathifolium*), cattails, and willows. Historical CNDDB WYBC records in the Project vicinity occur in the Mojave River 0.6 miles northwest of Hodge in 1986, and in the "upper narrows" southeast of Victorville in 1978. The record near Hodge is approximately 15 miles from where the Project alignment crossed the Mojave River, and the record near Victorville is approximately 5-7 miles away. Habitat modification by beavers, weekend recreational activities (mentioned above in the SWFL survey results section), and the relative narrowness of the riparian habitat may all be factors that preclude WYBC breeding in this area.

At Cajon Wash, habitat patch size was considered too small (largest patches of contiguous riparian habitat near the Project in Cajon Pass are 10-20 acres in size), and the area lacks a dense, well-developed understory with the appropriate species. During the 2008 survey, recreational activities in the Cajon Wash riparian habitat area were also a source of disturbance, including the running of generators in support of gold sluicing. No historical WBYC locations occur in the vicinity of Cajon Wash.

San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*)
USFWS: FE; CDFG: SSC

San Bernardino Merriam's kangaroo rat is one of 19 recognized subspecies of Merriam's kangaroo rat (*Dipodomys merriami*), three of which are known to occur in California. San Bernardino kangaroo rat use alluvial terraces or slopes with sparse to moderate canopy coverage and sandy to gravelly substrates in flood plains, Riversidean alluvial fan sage scrub, and along washes with nearby sage scrub. San Bernardino kangaroo rat is nocturnally active year-round, and constructs burrows with two to five entrances that are most often at bases of shrubs. Sandy soils are preferred, but rocky flats are used provided a burrow can be excavated. San Bernardino kangaroo rats are granivorous, feeding opportunistically on the seeds of plants in relation to their availability and abundance.

The historical range of the San Bernardino kangaroo rat is thought to include the extensive alluvial fan terraces at the bases of the San Gabriel, San Bernardino, and San Jacinto mountain ranges in San Bernardino and Riverside Counties, California. The northern extent of this subspecies range was likely the Cajon Pass in San Bernardino County and the southernmost extent is in Menifee in Riverside County (USFWS 1998b). Currently occupied habitat occurs at City Creek, Etiwanda, Lytle and Cajon Washes, Santa Ana River, Reche Canyon, South Bloomington, and San Jacinto River (USFWS 1998b).

Threats to San Bernardino kangaroo rat include sand and gravel mining, flood control structures and operations, agricultural activities, urban and industrial development, water conservation activities, and off-road activity (USFWS 1998b). The Proposed Project crosses through DCH for San Bernardino kangaroo rat (USFWS 2002).

San Bernardino kangaroo rat is known to occur within the Project survey area according to California Natural Diversity Database (CNDDB) trapping records. USFS modeled habitat extends from the area south of Devore (MP 17 to near MP 20.5. The Project traverses through identified San Bernardino kangaroo rat habitat from approximately MP 10.5 to MP 20.5 (USFWS 2008, CDFG 2008a). The southernmost historical location for San Bernardino kangaroo rat exists near MP 10.5, and the northernmost historical location for San Bernardino kangaroo rat exists within Cajon Wash near MP 17.5 (CDFG 2008a). The USFWS assumes San Bernardino kangaroo rat DCH (USFWS 2008) to be occupied .

No presence/absence trapping was conducted by the Project proponent because the distribution of San Bernardino kangaroo rat is well known within the Proposed Project area, and because presence/absence trapping would not provide relevant information for writing a take statement for this species. In APMM BIO-40, the applicant has proposed to conduct pre-construction trapping surveys for the species. The results of detailed habitat assessment are provided below, along with the results of a recent trapping effort conducted in 2005.

URS Senior Biologist, Dr. Richard Friesen conducted a habitat assessment survey in February and March 2008 when the soils were dried after several rain storms that had occurred several weeks earlier. Habitat for San Bernardino kangaroo rat exists intermittently from the Rialto Municipal Airport (near MP 8) to the Blue Cut Narrows (MP 20.5). Within this area, three categories were identified. The first category is called Suitable Habitat (SH), which indicates that the basic habitat elements for San Bernardino kangaroo rat are present, however, no diagnostic Heteromyid sign was observed during the assessment. The second category is called Heteromyid Sign Present (HSP), and represents areas that support the basic habitat elements for San Bernardino kangaroo rat, and had evidence of Heteromyid use, including scat, tracks, tail drags, and appropriately sized burrows. The last Category is called Known Presence (KP), and represents areas where San Bernardino kangaroo rat is known to be present. Areas not considered to be viable San Bernardino kangaroo rat habitat (e.g. cleared and developed parcels, too steep or too densely vegetated) are indicated on the maps.

The habitat boundaries were subjectively determined because they reflect the blending of vegetation and habitat physical conditions (physiognomy) in many places. Although the primary habitat for San Bernardino kangaroo rat is found within the floodplain, adjacent upland areas may provide refugia from environmental, demographic, or catastrophic events. These refuges may not be occupied during "typical" conditions, but may conserve the species during major flood events.

It should be noted that in areas where there is more than one species of kangaroo rat (which is the case in the Proposed Project area), because of overlapping size characteristics and sign, only a trapping program can be used to determine the species of kangaroo rat present.

<u>Other Special-Status Wildlife Species</u>

Fish

Santa Ana Speckled Dace (*Rhinichthys osculus*)

USFS Sensitive; CDFG: SSC

The Santa Ana speckled dace is a member of the Cyprinidae family. This small fish species has a long, streamlined body that is flattened below and grows to approximately 11 cm in length (Page and Burr 1991). It is typically found in the headwaters of the Santa Ana and San Gabriel Rivers, often in isolated stocks. This species may be extirpated from the Los Angeles River system. Santa Ana speckled dace requires permanent flowing streams with summer water temperatures of 17-20 degrees Celsius and usually inhabits shallow cobble and gravel riffles.

No focused surveys for this species were required by USFS, as the distribution of Santa Ana speckled dace is well known through the Cajon Wash. The dace is known to occur within waterbodies traversed by the Proposed Project between MP 20 through MP 25. Its distribution would be limited to those streams with permanent flowing water in any given year. Santa Ana speckled dace was incidentally observed within Cajon Wash during other special status species surveys. Cajon Wash near Swarthout Canyon Road was one such location where Santa Ana speckled dace was incidentally observed while surveying for other special status species.Dace also occur in the bottom reaches of Lone Pine Canyon.

Reptiles

Coast Horned Lizard (*Phrynosoma blainvillii*)
BLM Sensitive Species-CA: USFS: S; CDFG: SSC

In California, coast horned lizards range from San Mateo County and the northern Sierra Nevada foothills to the Mexican border west of the deserts, and can occur along the extreme western desert slope of the Peninsular Ranges (Jennings and Hayes 1994). The species range from sea level to about 8,000 feet in elevation, and can be found in a wide variety of habitats with loose sandy soils. Those habitats include valleys, foothills and semiarid mountains, grasslands, coniferous forests, woodlands, and chaparral. They occur frequently along sandy washes with scattered shrubs and along dirt roads. The species breeds from May through early July each year.

Coast horned lizards were found opportunistically during surveys conducted along riparian areas for other species. Coast horned lizards were observed during the riparian bird surveys in the spring and summer of 2008. Two lizards were observed during the riparian bird surveys within sandy beaches along Cajon Wash near MP 22. Additionally, a dead coast horned lizard was found near Kenwood Avenue. They are known to occur throughout Cajon Pass, including in Cajon Creek and at Baldy Mesa.

Coastal Rosy Boa (*Lichanura trivirgata rosafusca*)
USFS: S

The coastal rosy boa inhabits rocky areas in desert environments, chaparral, and coastal sage scrub from southern California and western Arizona. This species can also be found in mixed habitats, riparian areas and in oak woodlands. Coloration of this species includes variations of gray, tan, or reddish brown with a pattern that includes three length-wise, dark stripes on a lighter background; one central and two lateral. Desert-dwelling species often display more distinct patterns of stripes. Individuals rarely grow in length greater than 3 feet and have thick builds, short tails, and small heads (SDNHM 2011a). Active from April to September, rosy boas feeds primarily on small mammals such as mice and rats, as well as birds. The coastal rosy boa occurs in the Proposed Project area, although this species was not included in previous project-specific surveys.

Southwestern Pond Turtle (*Emys marmorata pallida*)
USFS: S; BLM: S; CDFG: SSC

The southwestern pond turtle inhabits slow moving rivers, streams, and ponds of coastal California from San Francisco Bay area and the central valley south and into northern Baja California,with outlier populations in the Mojave Desert (e.g., Mojave River in Afton Canyon). It most often occurs in smaller pools and permanent or intermittent streams. In intermittent streams, the turtles rely on small pools that persist through the dry season. Emergent marsh vegetation along the water course is needed for cover. A dense riparian canopy does not allow sufficient sunlight through for basking. Water levels must be deep enough to provide cover and foraging habitat for a population. Turtles have been observed to move as much as 1 mile along a drainage in one season (Rathbun 1992), but movement can be restricted by long stretches of dry streambed in intermittent creeks. Other important habitat requirements are protruding rocks, vegetation mats, or partly submerged logs for sunning. Nests are excavated outside of the watercourse in banks or in open upland areas up to 1,312 ft from the water (Storer 1930). Nesting and oviposition typically occurs from May through July. Incubation times in Washington have been recorded at 90 to 104 days (Holland 1991). Most young are believed to overwinter in the nest and emerge the following March or April (Holland 1985).

Much of this species' habitat has been disturbed by urban and agricultural development. Introduced aquatic predators such as bullfrogs, bass, and catfish are a threat to hatchings and young turtles, which measure only 0.9 to 1.2 inches at birth (Holland 1991). Turtles occupying habitat adjacent to urbanized areas are vulnerable to collection for pets, predation by domestic dogs, and competition with introduced exotic turtles. Nest sites and overland routes between the nest site and the water are especially vulnerable to disturbance. The eggs and overwintering young are vulnerable to predation by urban edge predators such as raccoon and skunk, and the adult female is vulnerable to roadkill or crushing by off highway vehicles. Depending on the topography and land use, it has been suggested that habitats up to 1,640 ft on either side of a utilized watercourse could be considered potential nesting habitat (Rathbun 1992). The female southwestern pond turtle reaches sexual maturity at 9 to11 years of age. Records based on recaptured turtles indicate known lifespan of at least 40 years (Holland 1991).

Suitable habitat for southwestern pond turtle exists at the proposed Mojave River crossing at La Delta; however, this species was not observed during general surveys. Based on the field survey data, habitat modification by beavers in the Mojave River may be contributing to the habitat suitability for this species. Modifications resulting from beaver activity, though, would be considered a temporary change, which would limit the long term stability of a population at this location.

San Bernardino ringneck snake (*Diadophis punctatus modestus*)
USFS: S

The San Bernardino ringneck snake is a mildly venomous, small, thin snake with smooth scales (californiaherps.com 2011c). The coloring of this species is typically a gray-blue to blackish hue with a bright orange to red underside, speckled with black markings. They are a particularly secretive species, often found hiding under rocks, behind bark, or other types of surface debris; however, when disturbed, the San Bernardino ringneck snake will coil its tail to expose its underside. Endemic to California, this reptile species occurs specifically from Santa Barbara south along coastal areas to San Diego and inland into the San Bernardino Mountains. Habitat characteristics include moist areas such as wet meadows, woodlands, chaparral, gardens, and mixed coniferous forests. They forage on salamanders, frogs, tadpoles, lizards, worms, slugs, and insects (californiaherps.com 2011c). Project-specific surveys were not conducted for this species; however, the San Bernardino ringneck snake has been reported to be present in the project area by Forest Service personnel.

Two-striped gartersnake (*Thamnophis hammonii*)
USFS: S

This diurnal, primarily aquatic reptile, is generally found near pools, creeks, and other water sources within rocky areas, oak woodlands, chaparral, and/or coniferous forests (californiaherps.com 2011d). With a diet consisting of small frogs, newts, tadpoles, and fish, the two-striped gartersnake is believed to forage for food in and underwater. The coloring of this medium-sized snake species is variable; there are striped and unstriped morphs, which both have a dull, olive/brown or dark gray color. Gartersnakes produce toxin-containing saliva which can be fatal to prey, but their bite is not considered dangerous to humans. A California state-protected species, the two-striped gartersnake ranges continuously from Salinas, CA south along the coast and east through the Transverse Ranges (including the desert in Victorville, CA). Project-specific surveys were not conducted for this species; however, the two-striped garter snake has been reported to be present in the project area by Forest Service personnel.

Birds

Bald Eagle (*Haliaeetus leucocephalus*)
CA-E; CDFG: FP; NV:S1 (Imperiled Breeding Bird)

There is the potential for the bald eagle to occur year around along the portions of the Proposed Project from approximately MP 0 through 20, and for the species to occur as a transient species along the remaining portions of the Proposed Project. Bald eagles occur in a variety of habitats and are typically observed in Southern California during the winter months. Key habitat components are large water bodies, rivers with abundant fish, and large trees or snags with heavy limbs or broken tops. Dense stands of conifers are used for communal roosts. Winter roosts may be 10 to 12 miles from feeding areas. Bald eagles feed on fish, carrion, and occasionally small mammals. Breeding territories have been recorded ranging from 27 to 111 acres. Bald eagles breed from February to July, with peak activity from March to June. Many eagles spend the winter at Big Bear Lake, Baldwin Lake, Erwin Lake, Lake Arrowhead, Lake Gregory, Grass Valley, and Green Valley. Some also spend the winter at Jenks Lake and possibly Silver Lake. Bald eagles are occasionally seen along the Mojave River during migration.

No bald eagles were observed during the general wildlife surveys that were conducted during the time period of February through March 2008, May 2008 and September 2008. USFS modeled habitat exists near MP 14.2 to MP 18.3; however, no suitable breeding habitat was observed within the Proposed Project area. Wintering bald eagles may forage within those portions of the Proposed Project area in the vicinity of the ponds at Glen Helen Regional Park (near MP 15) and elsewhere in Cajon Pass.

Bendire's Thrasher (*Toxostoma bendirei*)
USFWS BCC; USFS: WL; BLM: S (California); CDFG SSC; NV S1 (Imperiled)

Bendire's thrasher is an uncommon resident of desert succulent shrub and Joshua tree woodland habitats from San Bernardino County to western Kern County (Remsen 1978). Breeding season extends from late February to early August. The diet of Bendire's thrasher consists of terrestrial caterpillars, beetles, other insects, and other small invertebrates (Bent 1948). Cactus and spiny desert shrubs are typically used for cover, with nests commonly found in cholla, yucca, palo verde, or thorny shrubs and trees in flat desert areas.

Bendire's thrashers ware incidentally observed in creosote bush scrub habitat during botanical surveys in the Proposed Project area from MP 142 to MP 144 just west of Baker and from MP 183 to MP 186, just west of the Nipton Road exit on I-15.

Burrowing Owl (*Athene cunicularia*)
USFS: WL; USFWS BCC; BLM S (California); CDFG SSC; Nevada Protected

The breeding range of the North American subspecies of burrowing owl extends south from southern Canada into the western half of the United States and down into Baja California and central Mexico (Johnsgard 1988). Burrowing owls inhabit open areas such as grasslands, pastures, coastal dunes, desert scrub, and the edges of agriculture fields (Unitt 1984). Burrowing owls use rodent, sciurid, badger, fox, or coyote burrows, or, rarely in the western United States, create their own burrows. They require burrows throughout the year for nesting and for shelter from weather and predators. In Southern California, the most commonly used burrow is that of the California ground squirrel (*Spermophilus beecheyi*) (Collins 1979). The burrowing owl nesting distribution is strongly correlated to local burrow availability. Nesting densities vary from eight pairs per square kilometer in optimal habitat to one pair per 22 square miles in poor quality habitat (Johnsgard 1988). They form short term pair bonds with male territoriality peaking during pair formation and declining after egg-laying. Not all individuals capable of breeding do so every year. Burrowing owls have declined through much of their range because of habitat loss due to urbanization, agricultural conversion, and destruction of ground squirrel colonies (Remsen 1978). The incidental poisoning of burrowing owls and the destruction of their burrows during eradication programs aimed at ground squirrel colonies has also been a large factor in their decrease (Collins 1979; Remsen 1978; Zarn 1974). Although burrowing owls can be tolerant of low levels of human activity, there are human-related impacts such as shooting and the introduction of non-native predators which are also causes of their decline (Zarn 1974). This species often nests and perches near roads where they are vulnerable to roadside shooting, being hit by cars, road maintenance operations, and general harassment (Remsen 1978).

Potential burrowing owl habitat exists throughout the Proposed Project area. Eleven potential burrowing owl burrows were observed within the Proposed Project area; however, no owls were observed during surveys conducted by Calnev (URS Corporation 2010a). All signs in the form of potential burrows identified were determined to be inactive through use of a fiber optic scope, and sign such as whitewash or pellets that were observed were determined to be relatively old. However, the surveys were conducted in August 2008, which was during the latter part of the breeding season for the burrowing owl (February through August). Two incidental sightings of burrowing owls were noted during other Project surveys. One burrowing owl was observed in March 2008 during the special-status plant surveys, near MP 79.5. A second burrowing owl was observed during the Delhi sands flower-loving fly surveys, on the parcel south of the Colton Terminal (AMEC 2007), although the report did not provide a specific location of the occurrence.

Golden Eagle (*Aquila chrysaetos*)
USFWS: BCC; USFS: WL; BLM:S (CA), CDFG: WL; Nevada Protected

Throughout most of the western United States golden eagles are mostly year-round residents, breeding from late January through August with peak activity in March through July (Kochert et al. 2002). Migratory patterns are usually fairly local in California where adults are relatively sedentary, but dispersing juveniles sometimes migrate south in the fall.

Habitats for this species typically include rolling foothills, mountain areas, and deserts. Golden eagles need open terrain for hunting and prefer grasslands, deserts, savanna, and early successional stages of forest and shrub habitats. Golden eagles primarily prey on lagomorphs and rodents but will also take other mammals, birds, reptiles, and some carrion (Kochert et al. 2002). This species prefers to nest in rugged, open habitats with canyons and escarpments, with overhanging ledges and cliffs and large trees used as cover. This species has nested in Cleghorn Cajon in the past. Observations of golden eagles foraging throughout Cajon Pass are fairly regular. Thus, this species is known to occur.

Le Conte's thrasher (*Toxostoma lecontei*)
USFWS: BCC; USFS: WL; CDFG: SSC

Le Conte's thrasher is an uncommon resident of desert scrub, desert wash, and alkali desert scrub habitats from Inyo County to the Mexican border. The species is especially wary of humans and is susceptible to human disturbance (Remsen 1978). Breeding season extends from late January to June. The diet of Le Conte's thrasher primarily consists of terrestrial arthropods, but also includes seeds, small lizards, and other small vertebrates (Sheppard 1970). Cactus and desert shrubs are typically used for cover, with nests commonly found in dense spiny shrubs or cholla in desert wash habitat.

Le Conte's thrasher was incidentally observed in creosote bush scrub habitat during botanical surveys in the Proposed Project area between MP 128 and MP 133. No point location data is available for this species.

Least Bittern (*Ixobrychus exilis*)
USFS: WL; CDFG: SSC; BLMS: Nevada; NV: S2 (Breeding)

The least bittern is the smallest heron found in North America. This tiny, secretive heron with blackish back and conspicuous buff wing patches and underparts is found in freshwater marshes where cattails and reeds predominate. Nests consist of a flimsy platform of dead cattails or reeds, usually about a foot above the water, on which two to seven pale blue or green eggs are placed in mid May. Young hatch in 19 to 20 days, fledge in 25 days and are cared for by both parents. The least bittern relies on its cryptic coloration to avoid detection and seldom flies, and then does so only for a few seconds before it drops out of sight. It is a skilled climber and can be found several feet above the water, grasping onto reeds with its long toes. It spends most of its time picking its way quietly through the densest marshes, feeding on frogs, crayfish, and other small aquatic creatures. Least bitterns are known to be declining primarily because of habitat destruction.

One least bittern was observed during riparian bird surveys along the Mojave River near MP 54.They have also been observed at Lost Lake, in Lone Pine Canyon.

Loggerhead Shrike (*Lanius ludovicianus*)
USFWS BCC; USFS: WL; CDFG: SSC; Nevada Protected

The breeding range of the loggerhead shrike extends throughout Canada and the United States (Shuford and Gardali 2008). In Southern California and Nevada, they breed from early January to July. Breeding abundance has been noted to be higher in portions of the California Central Valley, Coast Ranges, and the southeastern deserts. Shrikes are generally more numerous in the southern deserts of California than on the coast, and are widespread on the desert floor, in desert scrub habitats, and in sparse riparian woodland. Habitat requirements include shrublands or open woodlands with both grass cover and areas of bare ground, and tall shrubs or trees for perching and nesting.

Loggerhead shrikes were observed at four locations along the proposed alignment during the California gnatcatcher, burrowing owl, and desert tortoise surveys. One loggerhead shrike was observed near Lytle Creek Wash (MP 11) during the California gnatcatcher surveys. Other locations included sightings near MP 89, MP 171, and MP 184.

Long-eared Owl (*Asio otus*)
USFS: WL; CDFG: SSC; Nevada Protected

These brownish-gray, medium-sized owls have long ear tufts that give them their name. They exhibit distinctive rufous-orange facial disks, have buff wings, and mainly gray breasts and bellies with dark patches. The breeding range of this species is fairly widespread across North America, although some consider this species to be resident throughout its breeding range (Seattle Audubon Society 2008b). These owls are associated with the following habitat types:

coniferous and mixed coniferous-deciduous forests, especially near water and riparian habitat. They prefer to roost or nest in dense vegetation during the winter and they eat assorted small animals such as mice and voles, and less frequently, birds and reptiles. Long-eared owls are chase-predators indicating they hunt by flying back and forth, while low to the ground before swooping down and seizing their prey with their talons (Seattle Audubon Society 2008b). Previous surveys indicate the species has a moderate potential to occur in the Proposed Project area.

Song Sparrow (*Melospiza melodia*)
USFS: MIS

Song sparrows occur throughout the U.S. in a variety of genetically distinct subspecies populations. In California, approximately 11 subspecies breed throughout the state, approximately 8 are endemic and approximately 4 winter in the state. Five subspecies that occur in California are listed as Species of Special Concern in the state. Song sparrows were not identified beyond species during survyes. Habitat requirements include a source of water, moderately dense vegetation, light, and exposed ground or leaf litter. The species forages primarily on the ground picking food from the ground or scratching the ground with its feet. The sparrows forage on open ground, in litter, at the bases of bushes, in the mud, and in shallow water along streams. Species disturbances can occur from fire, flooding, grazing, changes in land use causing habitat loss, chemical pollutants, and an increase in predators (California Partners in Flight 2004). Several song sparrows were observed throughout the riparian habitat associated with Cajon Wash during the URS surveys. The species has been observed to be present in the Proposed Project area during previous surveys.

Several song sparrows were distributed throughout the riparian habitat associated with Cajon Wash.

Summer Tanager (*Piranga rubra*)
USFS: WL; CDFG SSC

The summer tanager is a rare summer resident in the western United States. The male is bright rose or orange-red throughout the year, and the female is olive above and orange-yellow below. Some females gain complete male pigmentation as they advance in age. The breeding season begins in early May, and extends into mid-July. Breeding habitat in the West includes riparian woodlands of cottonwoods, willows, or mesquites, and it is also sometimes found in orchards, parks, and roadside trees. The summer tanager is primarily insectivorous, with the primary component of the summer tanager's diet being bees and wasps. However, this species will also eat fruits such as blackberries and citrus. Habitat fragmentation and cowbird nest parasitism are potential factors contributing to the decline of this species.

A lone Summer Tanager was observed flying overhead along the Mojave River near MP 54.

Swainson's Hawk (*Buteo swainsoni*)
USFWS: BCC; USFS: S; CA-T; BLM Sensitive Species-California; Nevada Protected

Swainson's Hawks breeding range stretches from southwestern Canada to northern Mexico and includes the western and central U.S. The majority of the species migrates to South America for the winter, though some small populations winter in the Sacramento-San Joaquin River Delta in central California and other isolated areas of the southern U.S. Nesting individuals arrive in early March through April while migrations begin in late August into September. Numbers of nesting and breeding individuals in California have declined significantly since the earliest records. Foraging habitats include open stands of grasslands and sparse shrublands. The hawks will forage in certain agricultural areas such as alfalfa fields. The species nests primarily in trees typically along the edges between woodlands and grass or shrublands. In the Mojave Desert nesting areas include Joshua tree woodlands, riparian woodlands, and ornamental plantings. Threats to the species viability in California include chemical pollutants; habitat loss or degradation of nesting, foraging, and winter habitats; disturbances in breeding grounds; and increased competition with other species (BLM 2011). Previous surveys indicate the species has a high potential to occur in the Proposed Project area.

Yellow warbler (*Setophaga petechia*)
USFS: WL; CDFG: SSC

The yellow warbler breeds widely throughout North and South America and is considered the most abundant warbler in North America (Shurford and Gardali 2008). In California, the species is a migrant and summer resident from March to October. The yellow warbler is rarer in the Mojave Desert area, occurring in local patches in the Mojave River near Victorville and most likely breeding in canyons of the Panamint Mountains. The species is associated with riparian vegetation, including willows and cottonwoods and other shrubs along water courses and in wet meadows.

The yellow warbler was observed opportunistically during surveys conducted for other target species. Yellow warbler were commonly observed during the least Bell's vireo surveys at the Mojave River survey location near MP 54, with typically 2 to 4 individuals observed frequently during a given survey. Yellow warblers were also very common along the Cajon Wash area during California gnatcatcher surveys. Thirteen locations of yellow warbler occurrence were mapped between MP 24 and MP 25 (URS Corporation 2010b). Southern willow scrub habitat located just outside the Proposed Project area near MP 10.7 was also observed to be occupied by yellow warbler throughout the breeding season.

Yellow-breasted chat (*Icteria virens*)
USFS: WL; CDFG: SSC; Nevada Protected

The yellow-breasted chat is another species restricted to riparian woodland, where it frequents dense undergrowth. This species is the largest of the wood warblers with an unusually stout, tanager-like bill, and a loud, often-raucous call (Dunn and Garrett 1997). The yellow-breasted chat is a summer visitor to California, typically arriving in early April. Chats are primarily insectivorous, but eat berries as well (Ehrlich et al., 1988). The presence of yellow-breasted chat is considered indicative of good quality, dense riparian habitat.

Yellow-breasted chat was relatively common at the Mojave River, with two to four individuals observed frequently during Project surveys (URS Corporation 2010a).

San Diego Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*)
USFS: S

The Cactus Wren can occur in arid and semiarid regions of both Southern California and Southern Nevada; however, the San Diego cactus wren has a much more limited distribution, occurring in only extreme northwestern Baja California north through the coastal areas of San Diego and Orange Counties (Shuford and Gardali 2008). The range of this subspecies is also restricted to thickets of chollas and prickly pear cacti, which must be tall enough to support and protect birds' nests. In general, this species' habitat requirements consist of coastal sage scrub at elevations below 1,500 ft with prominent cacti communities. Cactus wren are primarily insectivorous ground-foragers, with diets made up of beetles, ants, wasps, grasshoppers, with little vegetation (Shuford and Gardali 2008). Project-specific surveys were not conducted for this species; however, the San Diego cactus wren has been reported to be present in the project area by Forest Service personnel.

American peregrine falcon (*Falco peregrines anatus*)
USFS: S

The American peregrine falcon is medium-sized, with long-pointed wings, a dark crown and nape, and a dark wedge which extends below its eye. This long-distance migrant species actively nests in coastal California near Santa Barbara and in other mountains of northern California. Migrants occur along the coasts, and breeding takes place primarily in woodland, forest, and coastal habitats. Other important non-breeding habitats for this species include riparian areas and coastal/inland wetlands (Polite and Pratt 2011). They are a carnivorous species, preying on a variety of other birds (up to as large as ducks), that forage/hunt near or over the water. Project-specific surveys were not conducted for this species; however, the American peregrine falcon has been reported to be present in the project area by Forest Service personnel.

Mammals

Los Angeles Pocket Mouse (*Perognathus longimembris brevinasus*)
USFS S; CDFG: SSC

The Los Angeles pocket mouse is a resident of the Los Angeles Basin and San Bernardino Valley. Individuals of this species are one of the smallest mammals in the world, being about the size of the little finger on a human hand. Preferred habitats include riparian, wash, and alluvial scrub habitat within sandy soils. Elevations range from sea level to 5,577 ft. The Los Angeles pocket mouse is predominantly granivorous; however, green vegetation of grasses, forbs, or shrubs is consumed in spring (Bradley and Mauer 1973). In coastal scrub, grass seeds are eaten in summer, fall, and winter, and forb seeds are eaten in spring (Meserve 1976). Individuals search for seeds mainly beneath shrub canopy (Brown and Lieberman 1973). Los Angeles pocket mouse prefer sandy soil for burrowing (Hall 1946), but the species is also found commonly on gravel washes and on stony soils (Beatley 1976; Miller and Stebbins 1964). Active at night, Los Angeles pocket mouse burrows are plugged during the day. This apparently provides protection and conserves water by keeping humidity high. Predators include snakes, owls, and predatory mammals, including grasshopper mice. It is sympatric with a large number of other rodent species, including San Bernardino kangaroo rat.

URS Senior Biologist Dr. Richard Friesen conducted a habitat assessment survey in February and March, 2008 when the soils were dried after several rain storms that had occurred several weeks earlier. No formal trapping was conducted to confirm the presence/absence of the species. Potential habitat for Los Angeles pocket mouse exists intermittently from the Rialto Municipal Airport (near MP 8) to the Blue Cut Narrows (MP 20.5).

The boundaries of suitable habitat were subjectively determined because they reflect the blending of vegetation and habitat physical conditions (physiognomy) in many places. Although the primary habitat for Los Angeles pocket mouse is found within the floodplain, adjacent upland areas may provide refugia from environmental, demographic, or catastrophic events. These refuges may not be occupied during "typical" conditions, but may conserve the species during major flood events.

It should be noted that there is more than one species of family Heteromyidae (kangaroo rats, pocket mice, and relatives) present in the Project study area and confirmation of Los Angeles pocket mouse presence can only be determined with a trapping survey, due to overlapping size characteristics and sign of potential species. CNDDB records for this species exist for Cajon Wash.

Mohave Ground Squirrel (*Spermophilus mohavensis*)
CA-T; BLM Sensitive-California

The Mohave ground squirrel is a relatively small species that is active in the spring and summer. They are restricted to the western Mojave Desert, and feed on the leaves, fruits, and seeds of native plants. Mohave ground squirrels can be found in a variety of desert scrub habitats, including creosote bush scrub, desert saltbush scrub, and desert sink scrub. The primary cause of the decline of the species is loss of habitat from the intense urban development occurring within its range (Gustafson 1993).

No Mohave ground squirrel trapping surveys were conducted and no Mohave ground squirrels were observed during focused surveys or as incidental observations during surveys for other special-status species where the habitats overlapped. In APMM BIO-18, Calnev has committed to conducting a trapping program for Mohave ground squirrels in consultation with CDFG, to be conducted within one year prior to construction activities. If the Mohave ground squirrel trapping survey results are positive within some portions of the route, the applicant would follow CDFG habitat compensation requirements to compensate for loss of habitat.

Mountain Lion (*Puma concolor*)
USFS: WL, MIS; Special Legal Status in California – may not be hunted

Mountain lions typically occur in remote, hilly or mountainous areas but can occur in other areas as well. . They require open water sources such as streams or rock pools, large foraging areas and rocky shelters or caves for denning. Home range of mountain lions can cover areas as large as 25 to 96 square miles for males and 3-12 square miles for females with a typical minimum home range of 15 square miles per individual (Russell 1978). Mountain lions are chiefly nocturnal, but may also be about during the day if undisturbed. This cat is active year round and in the case of males, may travel up to 25 miles per night in search of food. Prey includes mule deer (up to 60%-80% of diet), rabbit, rodents, coyotes, snakes, and occasionally livestock. Because of its large home range size, this species is susceptible to increased human pressures. Project surveys identified mountain lion tracks within Crowder Canyon, near MP 24.4. There are lots of records for mountain lion in Cajon pass including at least 2 road killed pumas in past 2 years, a radio-collared male from the San Gabriels, and numerous other tracks. They are also known from the Moutnain Pass area in the Mojave Desert.

San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*)
CDFG: SSC

The California Department of Fish and Game considers the black-tailed jackrabbit a Species of Special Concern. The species is found in rangelands throughout the central and western United States. It is the most common hare in California and occurs throughout the state up to elevations of 12,000 feet (SDNHM 2011c). Individuals of the subspecies have been observed to be present in Los Angeles, Riverside, San Bernardino, and San Diego counties and numerous watersheds within southern California (NatureServe 2010b). The jackrabbit is most active during the cooler night hours. Females of the species are generally larger than males.

The San Diego Black-tailed Jackrabbit was observed to be present in the Proposed Project area during the Delphi survey and other surveys.

San Diego Desert Woodrat (*Neotoma lepida intermedia*)
USFS: WL; CDFG: SSC

The San Diego Desert woodrat is listed as a Species of Concern by the USFWS. The San Diego desert woodrat is suspected to be present in Southern California and northwestern Baja California though its range is not well defined. It is presumed that the woodrat's habitat has declined as a result of urban and agricultural development. The woodrat's habitat includes sagebrush scrub and chaparral (NatureServe 2010c). Previous surveys indicate the species has a high potential to occur in the Proposed Project area.

Southern Mule Deer (*Odocoileus hemionus fulignata*)
USFS: MIS

Mule Deer habitat ranges from desert to forest to brushlands. Mountain populations have separate summer and winter ranges migrating to higher elevations during warm months. Those in milder climates do not migrate. The species generally lives in small social groups of approximately three individuals most of the year. In the winter, groups may come together to fee in open areas. Males grow new and bigger antlers each year and tend to be larger than females (SNMNH 2011). Mule deer sign (track, scat) was observed along Cajon Wash. This species is expected to be present throughout the Proposed Project area.

Townsend's Big-eared Bat (*Corynorhinustownsendii*)
USFS: S; BLM: S-California and Nevada; CDFG: SSC; NV: S2

The Townsend's Big-eared Bat is listed as a Species of Special Concern by California's Department of Fish and Game. The Townsends's Big-eared bat occurs from southern British Columbia to central Mexico. Isolated populations are found in the south and southeastern U.S. Habitat locations vary and occur from sea-level locations to elevations of 10,800 feet. This species roosts on open surfaces and is frequently observed in caves and abandoned mines throughout its range. Colonies include maternity colonies between March and June to mixed colonies the rest of the year. Colonies can range in size from a single individual to several thousand. Local migration may occur though it is poorly understood. Individuals may travel up to 10 miles from the roost during nightly foraging. Disturbance of roost sites (including but not limited to mine reclamation, recreational caving, and timber harvesting) appears to be the largest threat to the species resulting in declining populations (Texas Parks and Wildlife Department [TPWD] 2009). Previous surveys indicate the species has a high potential to occur in the Proposed Project area.

Western Mastiff Bat (*Eumops perotis californicus*)
USFS: S; BLM: S(California and Nevada); CDFG: SSC; NV-S1

The western mastiff bat is the largest North American free-tailed bat, approximately 2 to 3 inches in length. This bat issues a loud call easily heard by observers. Based on reports of the call, severe declines in this species have been reported in the Los Angeles basin and the western mastiff bat is considered a Species of Special Concern in California (TPWD 2009b). The species' range extends from central Mexico across the southwestern United States from Texas to California and north to southern Utah. The species moves over short distances seasonally and does not migrate over long distances (TPWD 2009b). The bat generally roosts during the day in vertical or nearly vertical cliffs, up to 1,300 feet in elevation, that have an unobstructed drop space below the cliff opening to allow the bats to gain momentum to become airborne. Habitat areas include dry desert washes, flood plains, chaparral, oak woodlands, open ponderosa pine forest, grassland, montane meadows, and agricultural areas. The western mastiff bat is unable to achieve flight from the ground and typically remains airborne all night at altitudes up to 8,800 feet. Colony sizes vary from a few to up to 70 individuals of the species and may contain both males and females or may be maternity colonies (TPWD 2009b, Texas Tech 1997). Loss of open water drinking sites appears to be the primary threat to this species in addition to activities that disturb or destroy cliff habitats including recreational climbing (TPWD 2009b). Previous surveys indicate the western mastiff bat has a high potential to occur in the Proposed Project area.

Table 3.7-3 **Special-Status Wildlife Species Observed or with a High Potential to Occur in the Project Area**
(Table also includes species that are of specific conservation concern to the agencies)

SPECIES		STATUS			HABITAT ASSOCIATIONS	POTENTIAL TO OCCUR
Common Name	*Scientific Name*	Federal	California	Nevada		
Invertebrates						
Delhi Sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	FE	None	None	Found only in areas of the Delhi Sands formation in southwestern San Bernardino and northwestern Riverside Counties. Requires fine, sandy soils, often with wholly or partly consolidated dunes, and sparse vegetation. Oviposition requires shade.	Present (on parcels adjacent to Colton North Terminal, MP 0)
Fish						
Santa Ana speckled dace	*Rhinicthys osculus ssp.*	USFS:S	CDFG:SSC	None	Streams (i. e., Cajon Wash).	Present (Cajon Wash; at least MP 20 through 25). Includes modeled habitat (URS 2010a)
Amphibians						
arroyo toad	*Anaxyrus californicus*	FE, USFS:MIS	CDFG:SSC	None	Riparian habitats with sandy streambeds usually associated with cottonwood, sycamore, live oak, and willows. Uplands adjacent.	Present in Cajon Wash
Reptiles						
coast horned lizard	*Phrynosoma coronatum (blainvilli)*	USFS:S	CDFG:SSC	None	Annual grasslands, coastal sage scrub, chaparral, oak woodland, riparian, pinyon-juniper woodlands, and coniferous forest.	Present (Cajon Wash; Near MP 22 and MP 23)
coastal rosy boa	*Lichanura trivirgata rosafusca*	USFS:S; BLM: S(CA)	None	None	Coastal sage scrub, chaparral, oak and pine woodlands, pinyon-juniper woodlands, and desert. Rocky areas.	Present
desert tortoise	*Gopherus agassizii*	FT	CA-T	BLM:SSS**	River washes, rocky hillsides, and flat desert having sandy or gravelly soil with creosote bush, burro bush, saltbush, Joshua tree, Mojave yucca, cacti, other shrubs, grasses, and wildflowers.	Present (Near MP 53 - 220) and within modeled habitat on USFS land near Baldy Mesa (URS 2010a)

Table 3.7-3 **Special-Status Wildlife Species Observed or with a High Potential to Occur in the Project Area**
(Table also includes species that are of specific conservation concern to the agencies)

SPECIES		STATUS			HABITAT ASSOCIATIONS	POTENTIAL TO OCCUR
Common Name	*Scientific Name*	Federal	California	Nevada		
southwestern pond turtle	*Actinemys marmorata pallida*	BLM:S (CA), USFS:S	CDFG:SSC	None	Inhabits permanent or nearly permanent bodies of water in many habitat types; below 6,000 ft in elevation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks. Need suitable nesting sites.	High (Mojave River near MP 54)
San Bernardino ringneck snake	*Diadophis punctatus modestus*	USFS: S	None	None	Habitat characteristics include moist areas such as wet meadows, woodlands, chaparral, gardens, and mixed coniferous forests.	Reported to be present by USFS
Two-striped gartersnake	*Thamnophis hammonii*	USFS: S	None	None	Generally found near pools, creeks, and other water sources within rocky areas, oak woodlands, chaparral, and/or coniferous forests	Reported to be present by USFS
Birds						
bald eagle	*Haliaeetus leucocephalus*	USFS:S	CA-E	None	Woodlands, marshes, meadows, rivers, and large lakes in open areas.	Modeled habitat is present (URS 2010a)
Bendire's thrasher	*Toxostoma bendirei*	USFWS:BCC, USFS:WL BLM: S(CA)	CDFG:SSC	None	Desert, especially with tall cholla cactus, yucca, and creosote bush.	Present (MP 142 - 144 and MP183 – 186)
burrowing owl	*Athene cunicularia*	USFS:WL, USFWS:BCC BLM: S(CA)	CDFG:SSC	Protected	Open grasslands and agricultural areas with suitable mammal burrows for nesting.	Present (Near MP 79.5 and in the parcel south of the Colton Terminal)
coastal California gnatcatcher	*Polioptila californica californica*	FT	CDFG:SSC	None	Sage scrub.	Moderate Potential, including modeled habitat (URS 2010a)
golden eagle	*Aquila chrysaetos*	USFS:WL, USFWS:BCC BLM: S(CA)	CDFG: WL	Protected	Desert scrub near cliff nest sites.	High Potential
Le Conte's thrasher	*Toxostoma lecontei*	USFWS:BCC, USFS: WL BLM: S(CA)	CDFG:SSC	None	Desert washes where large shrubs occur for nesting.	Present (MP 128 – 133)

Table 3.7-3 Special-Status Wildlife Species Observed or with a High Potential to Occur in the Project Area
(Table also includes species that are of specific conservation concern to the agencies)

SPECIES		STATUS			HABITAT ASSOCIATIONS	POTENTIAL TO OCCUR
Common Name	***Scientific Name***	**Federal**	**California**	**Nevada**		
least Bell's vireo	*Vireo bellii pusillus*	FE, USFWS:BCC	CA-E	None	Successional riparian scrub.	Present Mojave River and Cajon Pass, including modeled habitat (URS 2010a)
least bittern	*Ixobrychus exilis*	USFS: WL	CDFG:SSC	None	Colonial nester in marshlands and borders of ponds and reservoirs which provide ample cover. Nests usually placed low in tules, over water.	Present (Mojave River near MP 54), High Potential (Cajon Pass)
loggerhead shrike	*Lanius ludovicianus*	USFS:WL, USFWS:BCC	CDFG:SSC	Protected	Desert, farmland; nests in cholla and thorny bushes.	Present (Near MP 11, MP 89, MP 171, and MP 184)
long-eared owl	*Asio otus*	USFS:WL	CDFG:SSC	Protected	Coniferous and mixed coniferous-deciduous forests, especially near water, riparian habitat.	High Potential
song sparrow	*Melospiza melodia*	USFS:MIS	None	None	Riparian habitat, scrub, and thickets.	Present (Cajon Pass MP 12-26 and Mojave River near MP 54)
Southwestern willow flycatcher	Empidonax traillii extimus	FE; USFS:S (Migrant)	CA-E	None	Willow riparian forests and woodlands with openings and a dense understory, often near water	Present in Cajon Wash. Includes modeled habitat (URS 2010a)
summer tanager	*Piranga rubra*	USFS:WL	CDFG:SSC	None	Summer resident of desert riparian along lower Colorado River, and locally elsewhere in California deserts. Requires cottonwood-willow riparian for nesting and foraging; prefers older, dense stands along streams.	Present (Mojave River near MP 54)
Swainson's hawk	*Buteo swainsoni*	USFS:S, USFWS:BCC	CA-T	Protected	Grasslands, prairies, and other wide-open ranges with minimal tree cover.	High Potential
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	USFS:S, USFWS: Candidate	CA-E	Sensitive	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	High Potential (Mojave River near MP 54)

Table 3.7-3 **Special-Status Wildlife Species Observed or with a High Potential to Occur in the Project Area**
(Table also includes species that are of specific conservation concern to the agencies)

SPECIES		STATUS			HABITAT ASSOCIATIONS	POTENTIAL TO OCCUR
Common Name	***Scientific Name***	**Federal**	**California**	**Nevada**		
yellow warbler	*Dendroica petechia brewsteri*	USFS:WL	CDFG:SSC	None	Riparian forest, and mixed coniferous forests.	Present (Near MP 10.7; MP 24 – 25 at Cajon Wash; near MP 54 at the Mojave River)
yellow-breasted chat	*Icteria virens*	USFS:WL	CDFG:SSC	Protected	Dense riparian scrub, along streams.	Present (Near MP 53.5 and MP 54)
San Diego Cactus Wren	*Campylorhynchus brunneicapillus sandiegensis*	USFS: S	None	None	Coastal sage scrub at elevations below 1,500 ft with prominent cacti communities.	Reported to be present by USFS
American peregrine falcon	*Falco peregrines anatus*	USFS: S	None	None	Riparian areas and coastal/inland wetlands.	Reported to be present by USFS
Mammals						
Los Angeles pocket mouse	*Perognathus longimembris brevinasus*	USFS:S	CDFG:SSC	None	Riparian, wash, and alluvial scrub habitat within sandy soils typically at elevations ranging from sea level to 5,500 feet.	High Potential (within suitable habitat between MP 8 – 20.5)
Mohave ground squirrel	*Spermophilus mojavensis*	BLM: S(CA)	CA-T	None	Mojave desert scrub west of Barstow.	Moderate Potential
mountain lion	*Puma concolor*	USFS:WL, MIS	None	None	Mixed coniferous forests, woodlands, chaparral, and desert.	Present (Near MP 24.4 at Crowder Canyon in Cajon Pass)
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	FE	CDFG:SSC	None	Washes and alluvial fans.	Assumed Present (extent to be determined), and in modeled habitat (URS 2010a)
San Diego black-tailed jackrabbit	*Neotoma lepida intermedia*	USFS:WL	CDFG:SSC	None	Open areas, such as grasslands, agricultural fields, or sparse coastal scrub	Present (Calnev South and Calnev North Parcels)
San Diego desert woodrat	*Neotoma lepida intermedia*	USFS:WL	CDFG:SSC	None	Cliffs and rocky outcrops, desert, chaparral, and coastal sage scrub.	High Potential
southern mule deer	*Odocoileus hemionus fulignata*	USFS:MIS	None	None	Forest, woodlands, shrublands and grasslands.	Present (Cajon Pass MP 12-26)
Townsend's big-eared bat	*Plecotus townsendii*	USFS:S BLM: S(CA)	CDFG:SSC	None	Desert scrub and coniferous forests, roosts in caves, abandoned mines, and buildings.	High Potential for Foraging Individuals
western mastiff bat	*Eumops perotis*	BLM: S(CA)	CDFG:SSC	None	Rocky areas and cliff faces, roosts in cliff crevices, buildings.	High Potential for Foraging Individuals.

Table 3.7-3 Special-Status Wildlife Species Observed or with a High Potential to Occur in the Project Area

(Table also includes species that are of specific conservation concern to the agencies)

SPECIES		STATUS			HABITAT ASSOCIATIONS	POTENTIAL TO OCCUR
Common Name	*Scientific Name*	Federal	California	Nevada		

Notes:
* ** Special-Status Species.

Key:
FE = federally endangered
FT = federally threatened
CA-E = California endangered
CA-T = California threatened
SSC = species of special concern
BLM:S = Bureau of Land Management sensitive
USFS:S = United States Forest Service (USFS) sensitive
USFS: WL = USFS watch list
USFS:MIS = USFS management indicator species
USFWS:BCC = United States Fish and Wildlife Service Bird of Conservation Concern

California Native Plant Society (CNPS) Ranking System:
List 1A: Plants Presumed Extinct in California
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
List 3: Plants About Which We Need More Information - A Review List
List 4: Plants of Limited Distribution - A Watch List

Threat Ranks
0.1-Seriously threatened in California (high degree/immediacy of threat)
0.2-Fairly threatened in California (moderate degree/immediacy of threat)
0.3-Not very threatened in California (low degree/immediacy of threats or no current threats known)

3.7.1.2.2 Wildlife Linkages

Wildlife linkages are defined as a corridor, or a linear landscape feature that allows animal movement between two patches of habitat or between habitat and geographically discrete resources (e.g., 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 oftentimes lack the habitat components necessary for select species.
Important distinctions exist between regional and local corridors. Regional corridors link two or more large areas of natural open space and serve to maintain demographic and genetic exchange between wildlife populations residing within these geographically distinct areas, whereas local corridors give resident animals access to essential resources (e.g., water, food, cover, or den sites) within a large habitat patch and may also function as secondary connections to the regional corridor system. The term “corridor” must be used in a species-specific context (Beier and Loe 1992; Beier et al. 2006). For example, a landscape feature that functions as a corridor for a songbird may not suffice for a mountain lion or a reptile. A useful distinction can be drawn between natural and manmade corridor elements. Natural elements are natural features of the landscape, such as canyons or riparian strips, conducive to animal movement. Manmade elements, such as roadway bridges and drainage culverts, are often structures wildlife might need to navigate to traverse through part of a corridor. Wildlife corridors in a partially developed landscape generally include both natural and manmade elements. Cajon Pass is considered a wildlife linkage, specific routes traveled by animals to cross from the San Gabriel to San Bernardino Mountains are not known.

Cajon Pass
Cajon Pass represents a major landscape linkage in Southern California that connects two large areas of natural open space: the San Bernardino Mountains and the San Gabriel Mountains (Beier et al. 2006). However, there is a substantial anthropogenic disturbance regime (e.g., four operational train tracks, adjacent multiple lane highway, and other development). Environmental consequences of a new underground pipeline would occur within a setting that has already been degraded and disturbed since the mid-1900s. Yet Cajon Pass still functions as active and important wildlife link. Cajon Pass connects the San Bernardino and San Gabriel Mountains, serving as a habitat linkage that facilitates movement of wildlife. For this reason, the Cajon Pass is crucial to the viability of wildlife traveling east and west between these core areas and is an important genetic linkage between the desert and coastal habitats. There are multiple routes that potentially accommodate wildlife movement within the Cajon Pass.

Existing barriers to movement within the linkage include I-15, State Route 138, and Route 66. There are 249 kilometers (154 mi.) of paved roads in the linkage area. Of them, I-15 and State Route 138 are the roads that pose the most substantial barriers to wildlife movement because of the speed and volume of traffic, which is generally constant both day and night.

There are also four major rail lines through Cajon Pass, roughly parallel to I-15. In general, the four rail lines run on the west bank of Cajon Wash, while Route 66 runs along the east bank. From Blue Cut to Cajon junction, the four rail lines, old Route 66, and the I-15 Freeway form a 1,640 feet band of linear development that potentially constrains animal movement. One of the rail lines is operated by UP and takes 17 trains a day vs BNSF tracks that carry much more traffic.

However, wildlife movement through the linkage area that includes the Cajon Wash (i.e., the San Bernardino to San Gabriel Mountain Linkage) is still ongoing in spite of hindrance by existing barriers including I-15, State Route 138, Route 66, and other busy paved roads (Penrod et al. 2004).

Mojave Desert
In general, the pipeline alignment parallels I-15 and a railroad, and these are existing barriers to wildlife movement. These linear developments present constraints to wildlife movement, particularly terrestrial species such as tortoise. Areas of habitat fragmentation occur in the Adelanto/Victorville area, Barstow area, and Las Vegas area. Where the Proposed Project deviates from existing highways in the Mojave Desert, the Proposed Project is unrestricted and conducive to live-in habitat and movement of wildlife. The Mojave River is an important regional wildlife corridor, connecting the Transverse Ranges with the Mojave Desert interior east of Barstow (Beier et al. 2006). Other linkages within the Mojave Desert are perpendicular to the alignment and occur in the vicinity of MP 109, MP 132, MP 145, MP 153, and MP 176 (Beier et al. 2006).

3.7.1.2.3 Big Game Ranges

Big game species that have the potential to occur within or around the Proposed Project area include Nelson's bighorn sheep and southern mule deer (URS Corporation 2010a).

Nelson's bighorn sheep is a subspecies of bighorn sheep that occurs in the Southwest desert regions of the U.S. They live in semi-open, precipitous terrain with rocky slopes, ridges, and cliffs or canyons. Steep slopes and cliffs are used to escape from predators such as coyote and mountain lion. However, they are known to move down onto less steep terrain occasionally, when in pursuit of diminishing resources in the mountains, when dispersing to other mountain ranges, or to escape human activity and predators. The Nelson subspecies has become well adapted to the desert mountain environment; they are typically found in small bands with little or no permanent water. Their diet consists of grasses, forbs, and sedges. The species is polygamous; the dominant ram does most of the courting and mating. Mating may take place at any time in the desert if climatic conditions are suitable. The gestation period is approximately 180 days. These animals began their decline in the mid-1800s at the time of heavy human settlement of the West (SNMNH 2008). This can be attributed at least in part to degradation of their habitat due to development, road-building, water-management practices, and recreational activities. The bighorns have also been affected by disease, sometimes passed on to them by domestic sheep, and are often preyed upon by mountain lions and likely by domestic dogs as well. In some places where bighorn populations have gone extinct, new herds have been reintroduced, but many parts of their original range are no longer suitable (SNMNH 2008). The Cady Mountains located approximately five miles south of MP 110 is an actively managed area for bighorn sheep according to the Society for the Conservation of Bighorn Sheep (SCBS 2008). They have also been regularly observed in the Clark Mountains located to the north and south of MP 180. No Nelson's bighorn sheep were observed during the 2008 surveys within the Proposed Project area. However, Calnev estimated that approximately 25 acres of suitable habitat has been reported as being utilized by Nelson's bighorn sheep within the 500-ft buffer of the Project alignment. Based on the existing range maps developed by CDFG and NDOW, approximately 10,250 acres of Nelson's bighorn sheep home range exists within a 500-foot buffer from the center of the ROW, through these two mountain ranges.

The southern mule deer is widely distributed throughout most of California, but is not common in the Mojave Desert, San Joaquin Valley, and heavily farmed areas that provide no cover. Its range covers coniferous forests, desert shrub, chaparral, and shrubby grasslands of the western United States and includes northern Mexico and Baja California as well as western Canada (Burt and Grossenheider 1976). Mule deer consume leaves of shrubs and trees, berries, forbs, and grasses. Young are born between June and July; the gestation period is about seven months. The mule deer is considered the most important big game mammal of the western United States (Burt and Grossenheider 1976). Incidental southern mule deer sitings were made in the Lytle Creek and Cajon Pass portions of the Proposed Project area. Calnev estimated that approximately 2,850 acres of mule deer home range exists within the 500 foot buffer of the Proposed Project area (URS Corporation 2010a).

3.7.1.2.4 Nesting Raptors

Suitable habitat to support nesting raptors occurs throughout the alignment in areas with tall structures (e.g., trees, powerlines, buildings, telephone poles, etc.) and a variety of open habitat capable of supporting sufficient prey species. Potential nesting raptors that may nest within the Proposed Project area or in the vicinity of the alignment are American kestrel (*Falco sparverius*), bald eagle, barn owl (*Tyto alba*), burrowing owl Cooper's Hawk, golden eagle, great horned owl (*Bubo virginianus*), long-eared owl, peregrine falcon (falco peregrinus), prairie falcon (*Falco mexicanus*), red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), turkey vulture and Western Screech-Owl (*Megascops kennicottii*) (CDFG 2010). Active red-tailed hawk nests were observed in 2008 at the Mojave River near MP 54, at the Valley Wells/Cima Pumpstation, near MP 174.4, and along the alignment between MP 88 and MP 89 alongside Dagget Yermo Road.

USFS modeled habitat exists for the bald eagle; however, this species was not observed during the 2008 surveys.

3.7.1.3 Special Management Areas (Biological Resources)

Components of the Proposed Project traverse a number of areas requiring special management considerations as discussed below and presented in Figure 3.11-1.

BLM Areas of Critical Environmental Concern (ACEC) and Desert Wildlife Management Areas (DWMAs). The Proposed Project area crosses several BLM ACECs including those associated with the Mojave monkeyflower, Mojave fringe-toed lizard, Calico Early Man Site, Parish's Phacelia, Manix, and Cronese Basin. The management objectives for these ACECs, as well as the potential impacts and associated mitigation measures related to these special management areas are discussed in further detail in Section 3.11. The Mojave monkeyflower, Mojave fringe-toed lizard, and Parish's Phacelia were not detected during the applicant's surveys in these areas.

Proposed Project area crosses several BLM DWMAs including those associated with the Shadow Valley DWMA, Ivanpah DWMA, and the Soda Mountain Wilderness Study Area. The management objectives for these DWMAs, as well as the potential impacts and associated mitigation measures related to these special management areas are discussed in further detail in Section 3.11.

In addition, the Proposed Project would use the Vulcan Materials Road through a portion of the Cajon Creek Habitat Conservation Management Area. The Cajon Creek Habitat Conservation Management Area is a conservation and mitigation bank managed by Vulcan Materials, and approved by the California Department of Fish and Game. The banks are operated to allow agencies and developers to meet mitigation requirements for the California Endangered Species Act (CESA), Stream Bed Alteration agreements, and CEQA mitigation requirements. Twenty four sensitive species are identified as potentially present in the Cajon Creek Habitat Conservation Management Area, which is characterized as Riversidian Alluvial Fan Sage Scrub. The area potentially includes 4 listed species: San Bernardino Kangaroo Rat, Santa Ana River woolly-star, Coastal California gnatcatcher, and Slender-horned Spineflower.

3.7.2 Applicable Regulations, Plans, and Policies

This section provides an overview of the applicable laws, regulations, and standards that influence the management of biological resources at the federal, state, and local levels.

3.7.2.1 Federal

Endangered Species Act, Section 7. The ESA was passed by the U.S. Congress in 1973, and has since been amended several times. 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. Procedures for addressing federally listed species follow two principal pathways, both of which require consultation with the USFWS, which administers the ESA for all terrestrial species. The first pathway (ESA Section 10(a), Incidental Take Permit) is set up for situations in which a non-federal government entity (where no federal nexus exists) must resolve potential adverse impacts to species protected under the ESA. The second pathway (ESA Section 7, Consultation) involves projects with a federal connection or requirement; typically these are projects sponsored or permitted by a federal lead agency. For the Project, the federal lead agency (the BLM) initiates and coordinates the steps below for Section 7:

- Preparation of biological assessment assessing potential for the project to adversely affect listed species
- Coordination between resource agencies to assess impacts and proposed mitigation
- Development of appropriate mitigation for adverse impacts on federally listed species

The USFWS ultimately issues a final Biological Opinion on whether the project would affect federally listed species. If agency review of a project determines that a Project can be implemented without jeopardizing a federally protected species, the Biological Opinion may include an Incidental Take statement of anticipated incidental take accompanied by the appropriate and reasonable mitigation measures to minimize such take. It is expected that the USFWS will issue a Biological Opinion for the Project for impacts to any federally listed species.

Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 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. Some common species are not covered under the MBTA and include the European starling (*Sturnus vulgaris*), the house sparrow (*Passer domesticus*), the rock pigeon (*Columba livia*), and game species such as grouse, turkey, wrentit and ptarmigan. 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 2011).

Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act (BGEPA) prohibits any form of possession or taking of either bald eagles or golden eagles. A 1962 amendment created a specific exemption for possession of an eagle or eagle parts (e.g., feathers) for religious purposes of Indian tribes. Rule changes made in September 2009 finalized permit regulations to authorize limited take of these species associated with otherwise lawful activities. These new regulations establish permit provisions for intentional take of eagle nests under particular limited circumstances (USFWS 2009b).

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 FR 5820, USFWS 1994).

A draft revised recovery plan was prepared in 2008, which re-delineated the recovery units and reduced them from six units to five units, based on recent genetic research. The recovery units cover the entire range of the Mojave population of desert tortoise (USFWS 2008).

Cactus and Yucca Removal Guidelines, BLM. 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 (BLM 2001). The larger chollas thus become natural desert mulch, which provides a seedbank for regeneration of these species.

Clark County Multiple Species Habitat Conservation Plan. The Clark County Multispecies Habitat Conservation Plan (MSHCP) and the resultant USFWS Section 10(a) incidental take permit are designed to allow the incidental take of species covered by the ESA (Clark County 2000) on non-federal lands. 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, Nevada. 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. The plan supplants earlier species-specific conservation efforts.

For projects that impacts non-federal lands that are protected under the MSHCP a one-time mitigation and land disturbance fee of $550 per acre are required at the time a grading permit is issue. The collected fees are used to implement the mitigation strategy outlined within the MSHCP. The mitigation activities will be under taken on both federal and non-federal lands that are part of the MSHCP's conservation reserve. However, because the Project is achieving ESA compliance through Section 7, the Project will not seek ESA compliance through the Clark County MSHCP and Section 10a.

California Desert Conservation Area (CDCA) Plan and amendments. The Federal Land and Management Act of 1976, as amended (43 U.S.C. 1701-1782), designated a 25 million-acre area in southern California as the California Desert Conservation Area (CDCA), of which 10 million acres are managed by the BLM. The CDCA Plan and its amendments (NEMO Coordinated Management Plan [BLM 2002]) consists of proposed management actions and alternatives for public lands in the CDCA. The BLM has worked with the USFWS to develop a variety of land designations as tools to protect sensitive biological resources. These include designation of DWMAs, Areas of Critical Environmental Concern (ACECs), and Designated Critical Habitat (DCH). DWMAs are general areas recommended by the Desert Tortoise Recovery Plan (USFWS 1994) within which recovery efforts for the desert tortoise would be concentrated. DWMAs had no specific legal boundaries in the 1994 Recovery Plan. The BLM formalized the general DWMAs from the 1994 Recovery Plan through its planning process and administers them as Areas of Critical Environmental Concern (see below). ACECs are specific, legally defined, BLM designations where special management is needed to protect and prevent irreparable damage to important historical, cultural, scenic values, fish and wildlife, and natural resources or to protect life and safety from natural hazards. Critical Habitat consists of specific areas defined by the USFWS as areas essential for the conservation of the listed species, which support physical and biological features essential for survival and that may require special management considerations or protection. Critical habitat for the desert tortoise was designated in 1994, largely based on proposed DWMAs in the draft Recovery Plan.

Las Vegas BLM Resource Management Plan. The BLM Las Vegas Resource Management Plan provides guidance and identifies land use decisions to be implemented for management of 3.3 million acres of public lands in Clark and Southern Nye Counties. Significant resources emphasized by this program include: threatened and endangered species, land disposal actions, riparian areas, special status species, wilderness management, wildlife habitat, forestry and vegetative products, livestock grazing, wild horses and burros, air, soil, water, fire, land acquisition priorities, hazardous materials management, rights-of-way, cultural resources, recreation, utility corridors, and locatable, saleable, and leasable materials (BLM 1998). BLM's Las Vegas and Pahrump Field Offices intend to revise the current plan to reflect resource issues that need adjustment or clarification, as well as emerging issues not addressed in the original 1998 plan. Potential issues identified for update in the revision include, but are not limited to, renewable energy development for solar, wind, and geothermal power; visual resource management classes; wild and scenic river designation; OHV designation and special recreation management areas; evaluation of existing and potential new ACECs; and fluid mineral management stipulations. The NOI for the revised plan was published in January 2010, but this document has not yet been released.

San Bernardino National Forest Land Management Plan. The San Bernardino National Forest Land Management Plan (USFS 2005) approved seven land use zones within the forest, including Designated and Recommended Wilderness, zones designated for use, restrictions, or prohibitions on motorized access, Developed Area Interfaces, and Critical Biological (CB) areas. The Record of Decision established 10 CB Areas, and the Proposed Project is not located within any of the CB areas.

MIS – The Record of Decision for the Land Management Plan established 12 Management Indicator Species. These are representative species whose habitat conditions and/or population changes are used to assess the impacts of management activities on species in similar habitats in a particular area. The 12 MIS species were included in the development of special-status species in Section 3.7.1 above.

The Forest Service Region 5 and San Bernardino National Forest also maintain lists of Sensitive and Watch List species, as defined below:

Sensitive - A plant or animal species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density or in habitat capability that would reduce a species' existing distribution. Sensitive species are not covered under the Endangered Species Act.

Watchlist - SBNF Watchlist species are those that the local biologists and botanists have expressed concern about either because of apparent downward trends, apparent changes in habitat availability, vulnerability of associated habitats, or very narrow or localized distributions. Because of limited knowledge and/or understanding of the species, it is not yet known whether listing as Sensitive is warranted (the effort to gather such information is one of the purposes of the Watchlist).

Also, in 2005, a Forest Service Handbook Supplement FSH 2509.22-2005-1, Soil and Water Conservation Practices Handbook) established guidance for the delineation and management of Riparian Conservation Areas (RCAs) on the San Bernardino National Forest.

3.7.2.2 State

California Endangered Species Act. The California Endangered Species Act (CESA) is similar to the federal ESA, and is administered by the CDFG. CESA was enacted to protect sensitive resources and their habitats. The CESA prohibits the take of CESA-listed species unless specifically provided for under another state law. CESA does allow for incidental take associated with otherwise lawful development projects. The CDFG recommends the development of appropriate mitigation planning to offset project-induced losses of listed species. A project applicant is responsible for consulting with the CDFG, if applicable, to preclude activities that are likely to take any CESA-listed threatened or endangered species then an Incidental Take Permit (CDFG Code Section 2081) will be required.

California Department of Fish and Game Code §1600-1603, Streambed Alteration Agreement. This statute regulates activities that would "substantially divert or obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use material from the streambed of a natural watercourse" that supports fish or wildlife resources. A stream is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks, and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. A Streambed Alteration Agreement (SAA) must be obtained for any Proposed Project that would result in an adverse impact to a river, stream, or lake. If fish or wildlife would be substantially adversely affected, an agreement to implement mitigation measures identified by the CDFG would be required. An SAA would likely be required for impacts to drainages in California.

California Fish and Game Code §3503. This section prohibits the taking and possession of any bird egg or nest, except as otherwise provided by this code or subsequent regulations. The administering agency is the CDFG.

California Fish and Game Code §3503.5. This section prohibits the taking and possession of eggs or nest of any bird classified as a Falconiformes or Strigiformes (birds-of-prey), except as otherwise provided by this code or subsequent regulations. The administering agency is the CDFG.

California Fish and Game Code §3511, §4700, §5515, and §5050. These sections prohibit the taking and possession of birds, mammals, fish, and reptiles listed as "fully protected." The administering agency is the CDFG.

California Fish and Game Code §3513 – Adoption of the Migratory Bird Treaty Act. This section provides for the adoption of the MBTA's provisions. As with the MBTA, this state code offers no statutory or regulatory mechanism for obtaining an incidental take permit for the loss of non-game migratory birds. The administering agency is the CDFG.

California Food and Agriculture Code §80001 et seq. – California Desert Native Plants Act. The purpose of this act is to protect California desert native plants from unlawful harvesting on both public and privately owned lands. The act provides for legal harvesting of native plants.

California Code of Regulations §670.2 and §670.5. The code lists wildlife and plant species listed as threatened or endangered in California or by the federal government under ESA. Species considered future protected species by the CDFG are designated California species of special concern (CSC). CSC species currently have no legal status, but are considered indicator species useful for monitoring regional habitat changes.

CEQA Guidelines §15380. CEQA Guidelines §15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria.

California Desert Conservation Area Plan. With regard to Wilderness Study Areas the California Desert Conservation Area Plan states that trees may be cut when necessary as part of a mining operation, or when the BLM has determined that this is necessary for insect and disease control or in emergencies such as fire (BLM 1980).

Nevada Revised Statute 501. Nevada Revised Statute 501, supplemented by the Nevada Administrative Code (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.

Nevada Revised Statute 527.060–527.120. Nevada Revised Statute 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.

3.7.2.3 Local

San Bernardino County Development Code. Division 8, provision 88.01.10 of the San Bernardino County Development Code states that a removal permit is required for the removal of any native tree or plant that is subject to Division 8. Removals of native trees or plants that are not requested in conjunction with a land use application or development permit may be accomplished only under a permit issued by either the County Agricultural Commission or the County Fire Warden, subject to the provisions of this chapter. The Building Official or the Director of Environmental Health Services Department shall require a preconstruction inspection prior to approval of development permits (Keep Milpas Rural 2009).

Perch trees within identified Bald Eagle Habitat may not be removed without an adequate substitution provided (Keep Milpas Rural 2009).

Approval from the County is required to remove, harvest or transplant a living desert native plant. Per provision 89.0415 of the code, the following desert native plants, cannot be harvested or removed except under a permit issued by the Agricultural Commissioner or other applicable County Reviewing Authority: (1) desert plants with stems two inches or greater in diameter or six feet or greater in height (e.g. *Dalea spinosa* (smoketree)), (2) all species of the genus *Prosopis* (mesquites), (3) all species of the family Agavaceae (century plants, nolinas, yuccas), (4) creosote rings, ten feet or greater in diameter, and (5) all Joshua trees (Keep Milpas Rural 2009).

With regard to Joshua Trees in desert areas, a removal permit will be granted only if the Director of Building and Safety makes a finding that no other reasonable alternative exists for the development of the land when the removal of specimen size Joshua Trees is requested. Joshua trees that are proposed to be removed would be transplanted or stockpiled for future transplanting wherever possible. In the instance of stockpiling, the permittee must comply with Department policy to insure Joshua trees are transplanted appropriately (Keep Milpas Rural 2009).

San Bernardino County General Plan. The San Bernardino County General Plan requires the retention of existing native vegetation for new development projects, particularly Joshua trees, Mojave yuccas and creosote rings, and other species protected by the Development Code and other regulations. This can be accomplished by requiring the Building Official to make a finding that no other reasonable siting alternatives exist for development of the land prior to removal of a protected plant; encouraging on-site relocation of Joshua trees and Mojave yuccas; and by requiring the developer to bear the cost of tree or yucca relocation (URS Corporation 2007).

The San Bernardino County General Plan requires 50-100 ft riparian setbacks that prohibit removal of mature natural vegetation and prohibits removal of vegetation within 200 ft of a stream without a tree permit and environmental review with mitigations imposed. The San Bernardino County General Plan also encourages the use of conservation practices in the management of grading, replacement of ground cover, protection of soils, natural drainage, and the protection and replacement of trees (URS Corporation 2007).

City of Victorville General Plan. Resource Element, Policy 1.5, of the Victorville General Plan states that "the City will continue to require preservation of native Joshua tree woodlands and specimens where possible" (City of Victorville 1997) The implementation for this policy is Chapter 1333 of the Victorville Municipal Code, which prohibits the cutting, damaging, destroying, digging up or harvesting of any Joshua tree without the written consent of the Director of Parks and Recreation (City of Victorville 1997).

3.7.3 Environmental Consequences

3.7.3.1 Requirements and Focus of NEPA versus CEQA Analyses

Potential Impacts to be Evaluated Under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential biological resources impacts have been identified for evaluation:

Effects to biological resources would occur if the Proposed Project:

- Results in a substantial long-term loss of special species habitat (general habitat impacts are addressed as part of BIO-1, impacts to special status plant habitat and individuals are addressed as part of BIO-2, and impacts to special status wildlife habitat are addressed as part of BIO-4 and BIO-5);

- Substantially alters the numbers or diversity of a local population of wildlife species, or interferes with the survival, growth, or reproduction of affected wildlife populations (impacts to impacts to wildlife habitat and individuals are addressed as part of BIO-3, BIO-4, and BIO-5);
- Results in direct or indirect impacts on individuals of federally listed wildlife or plant species (impacts to special status plant habitat and individuals are addressed as part of BIO-2, and impacts to special status wildlife habitat and individuals are addressed as part of BIO-4 and BIO-5);
- Results in direct or indirect impacts to candidate, or special status species populations, or habitat, that would contribute to or result in the federal or state listing of the species (addressed for plant species in BIO-1 and BIO-2, and for wildlife species in BIO-3, BIO-4, an BIO-5);
- Introduces new, invasive weeds to an area (addressed as BIO-6).

CEQA Significance Criteria

Under CEQA, the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to biological resources, the relevant CEQA significance criteria provided in Section IX of the checklist is:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a legally protected, candidate, sensitive, or special status species in local or regional plans, policies, or regulations, by the CDFG or USFWS (general habitat impacts are addressed as part of BIO-1, impacts to special status plant habitat and individuals are addressed as part of BIO-2, and impacts to special status wildlife habitat are addressed as part of BIO-4 and BIO-5)
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations by the CDFG or USFWS (addressed as part of BIO-1);
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means (addressed as BIO-7);
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, interfere with established native resident or migratory wildlife corridors, or impede the use of native wildlife breeding/brooding sites (addressed as BIO-8);
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (addressed as part of BIO-9);
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan (addressed as part of BIO-9).

3.7.3.2 Impact Analysis

Introduction

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under NEPA and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. While Section 3.7.1, Affected Environment, identifies resources within the general vicinity of the Proposed Project, the impact analysis focuses on biological resources that are directly crossed by the pipeline or associated aboveground structures or within 150 ft of the centerline of the pipeline in the case of wells, seeps, and springs. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Agency recommended mitigation measures (MMs) are compiled in Section 3.7.4, Summary of Mitigation.

Activities with Potential to Cause Impacts

This subsection describes the activities that would occur under the Proposed Project and action alternatives which could potentially have adverser impacts on biological resources. These activities include surface disturbance, vehicle strike, hazardous material and pollutant releases, hydrologic modification, and noise and light. For each activity, this section identifies the phase of the project (construction, operations, etc.) in which the impacts could occur. Following this subsection, impacts to specific biological resources are discussed, along with Applicant Proposed Minimization Measures and agency-required mitigation measures to avoid or reduce those impacts.

Surface Disturbance

Project construction would require disturbance of the ground surface, and its associated vegetation, within a 100-foot wide right-of-way for the entire 234-mile length of the Proposed Project. For some areas of the Proposed Project, the ground disturbance would occur directly adjacent to roads in developed areas. This includes the areas between MP-0 and MP-10 (Rialto and Bloomington), MP-32 to MP-52 (Baldy Mesa and Adelanto), and MP-223 to MP-234.4 (Las Vegas). In these areas, surface disturbance would be unlikely to affect biological resources. The majority of the pipeline route would occur in close proximity to roads, the existing Calnev pipelines, and/or railroads. These include the segments from MP-10 to MP-12, MP-52 to MP-141, MP-158 to MP-182, and MP-186 to MP-223. In these areas, the ground disturbance would occur within or very close to areas that have already been disturbed. This disturbance could potentially impact biological resources in these areas because wildlife and vegetation may have re-established in the years since the other projects occurred. In the areas of MP-141 to MP-158 and MP-182 to MP-186, the Proposed Project would occur in previously undisturbed areas. In general, ground disturbance could impact biological resources by directly removing vegetation and soils. In addition, wildlife present in the disturbed area could be killed, injured, or displaced by surface excavation and movement of heavy equipment and construction vehicles. Also, excavations could potentially impact wildlife if open trenches are left unsecured; direct, adverse impacts would result should wildlife accidentally enter an open trench and be unable to exit. Surface disturbance impacts would occur primarily during construction, although limited surface disturbance would also occur on both the proposed and existing pipelines during maintenance activities. Following construction, revegetation and re-population of the area by wildlife would occur, although both would likely take years or decades to accomplish.

Vehicle Strike

Construction could have a direct adverse impact on wildlife through heavy equipment or vehicle impacts, and would also have an indirect impact on wildlife by displacing individuals. Construction impacts would vary between short-term to long-term. Direct impacts to wildlife would cease as soon as construction is completed. Following construction, operational impacts would include potential strikes by maintenance vehicles and additional vegetation and wildlife impacts if maintenance were to require re-excavation. These impacts would occur sporadically throughout the life of the pipeline and would be considered long term impacts to the local plant community.

Vehicle strikes and additional ground disturbance could also occur if the Proposed Project or alternatives were to increase OHV access to areas that are currently inaccessible. This impact is evaluated in more detail in Section 3.14.3.2, as Impact REC-2. Mitigation Measures REC-2a and REC-2b, described in that section, would require the applicant to coordinate with the landowners to take measures to eliminate OHV access both during construction, and during operations.

Hazardous Material and Pollutant Releases

Hazardous material and pollutant releases could occur as a result of the Proposed Project and alternatives. Materials released could include fuels and other materials used by work crews as part of routine construction and maintenance activities, or petroleum product transported within the pipeline, and released through an accidental breach of the pipeline during operations. Hazardous materials could also be released if construction-related excavation were to disturb areas that have existing environmental contamination. Hazardous materials release could impact biological resources by injuring or killing vegetation and wildlife through either short-term acute exposure or long-term chronic exposure.

Pollutants could also be released to water bodies, impacting aqutic resources, in the event of a hydraulic fracture (frac-out) during HDD activities. In general, the use of the HDD technique is designed to minimize surface disturbance by installing the pipeline under roads and sensitive areas (water bodies or sensitive habitat) using a drilling technique. This technique requires the use of land area for drilling equipment and pipeline laydown at either end of the bore, but the location of that land surface disturbance can usually be controlled to minimize its impacts. The technique then allows installation of the pipeline under roads or sensitive areas, without surface disturbance in those areas. The HDD technique does carry a risk of a frac-out, which occurs when the pressure of the drilling fluid within the bore exceeds the pressure of the overlying soil or rock. If that occurs, the drilling fuild within the bore can rise to the surface and be released into a water body or onto the land surface. Although the drilling fluid consists of a non-toxic bentonite clay slurry, its release into water bodies can affect aquatic species including benthic invertebrates, aquatic plants, and fish.

The potential for releases of materials by work crews during construction or maintenance activities is discussed within Section 3.5.3.2, as part of Impacts WR-1 and WR-2, and in Section 3.17.3.2 as part of Impact HAZ-1. The potential for releases of materials during construction through pre-existing contaminated areas is discussed in Section 3.17.3.2, as part of the discussion of Impact HAZ-3. The potential for release of petroleum product during operations is addressed in Section 3.2.3.2, as part of the discussion of Impact GEO-1, and in Section 3.17.3.2 as part of Impact HAZ-2. In each of those discussions, the DEIS/DEIR presents mitigation measures that will be followed to avoid or reduce the volume of releases. The Applicant Proposed Minimization Measure (APMM) WR-3 specifies that the applicant would develop a Spill Response Plan to respond to any releases. Should a release occur, BLM, USFS, and USFWS could require specific measures to protect listed species, and could also require measures to recoved damaged habitats.

Hydrologic Modification

Biological resources could potentially be impacted if the Proposed Project or alternatives were to modify the availability or quality of surface water and/or groundwater. Section 3.5.3.2 addresses these issues in Impact WR-2 (impact of discharges on water quality), Impact WR-3 (groundwater depletion), and Impact WR-5 (impacts to riparian vegetation). These potential impacts would only occur during construction, and would not occur during operations or maintenance activities. APMM's are proposed by the applicant to address these impacts, including APMM WR-1 (reducing potential impacts of trench dewatering), WR-2 (development of a HDD contingency plan), and WR-4 and WR-5 (development and implementation of a Stormwater Pollution Prevention Plan and use of erosion control techniques). Impact WR-5 specifically evaluates the impact of the Proposed Project on the riparian within Cajon Creek near Wagon Train Road (MP-24), and requires the use of the HDD installation technique at that location to reduce potential impacts to biological resources and riparian vegetation in that area. Additional APMMs and agency-required mitigation measures are presented within the subsections below, where they are applicable to specific sensitive species.

Noise and Light

Construction activities would require the use of heavy equipment, and possibly blasting in some areas, to install the pipeline. These activities will generate noise that could affect biological resources. In addition, should construction or maintenance acitivites occur at night, the use of lighting could result in impacts to biological resources. Operation of the Proposed Silver Lake Pump Station would also generate noise that occur, over the long-term, during operations.These potential impacts, including mitigation measures to avoid or reduce the impacts, are discussed within the analysis provided below, where they are applicable to specific sensitive species.

Proposed Project/Proposed Action (Alternative 1)

Impact BIO-1: Impact to vegetation communities. *Construction activities would alter existing vegetation communities and associated habitats due to vegetation removal, causing a disruption to wildlife through habitat loss, alteration of wildlife movement, and general disturbances associated with increased human presence.*

Under NEPA, clearing and grading activities for project infrastructure (the construction ROW, Silver Lake Pump Station, SCE Slover Transmission Lines, Sunset Junction, additional workspaces, improvements to existing access roads, and construction of Afton Access Road) would cause the direct loss of vegetation communities within the Proposed Project area. Dominant vegetation communities affected would include Riversidean sage scrub, Riversidean alluvial fan sage scrub, chaparral, Mojave creosote bush scrub, desert saltbush scrub, Mojave wash scrub, and Joshua tree woodland. The majority of the disturbance would result from the establishment of the construction ROW and the temporary workspaces. Vegetation in these areas would be allowed to reestablish, although woody vegetation would be limited within the permanent ROW. Because of the slow recovery rate associated with desert communities, impacts would be long-term in duration. Other Project infrastructure would result in permanent loss of vegetation communities as land cover is permanently converted to non vegetated area, including Silver Lake Pump Station, SCE Slover Transmission Line tower footprints, Sunset Junction, improvements to existing access roads, and construction of Afton Access Road. The extent of disturbance impact would vary by vegetation community and location within the project area. Temporary impacts to vegetation would occur within portions of the Proposed Project area where the vegetation would be reestablished through the implementation of restoration efforts. Total surface disturbance would be approximately 2,895 acres, while permanent disturbance would be approximately 6.97 acres. Table 3.7-4 contains a breakdown of the acreage per vegetation community.

Table 3.7-4 Impacts on Native Vegetation Within the Proposed Project Area

Vegetation Type	Area of Impacts (in acres)
Riversidean Sage Scrub	4
Riversidean Alluvial Fan Sage Scrub	42
Disturbed Riversidean Alluvial Fan Sage Scrub	15
Chaparral	61
Mojave Creosote Bush Scrub	1,188
Disturbed Mojave Creosote Bush Scrub	274
Desert Saltbush Scrub	55
Disturbed Desert Saltbush Scrub	52
Mojave Wash Scrub	43
Joshua Tree Woodland	31
Disturbed Joshua Tree Woodland	19
Total	**1,784**

Direct impacts to vegetation communities within the Proposed Project area would include loss of shrub and annual vegetation, as well as riparian trees resulting from crushing, direct removal or other construction damage. Impacts related to vegetation removal can have short-term and long-term effects. Impacts would be short-term when the impacted vegetation would be re-established in less than 3-5 years, or long-term when the vegetation would take longer than 5 years to be re-established. The majority of impacts from the Proposed Project would be mitigated through implementation of the Project Habitat Restoration Plan and Weed Management Plan. However, removal of trees growing in riparian woodlands and the recognized longer duration of restoration efforts in the desert and semi-desert ecosystem would result in longer term effects, reducing structural diversity, refuge, nesting, breeding, and foraging habitat for many wildlife species. If OHV use continues in impacted areas, then recovery time would be much longer, or impacts would be permanent.

Additional direct impacts to vegetation may also include soil compaction, increased wind and water erosion, reduced habitat quality, and increased opportunity for the invasion and establishment of weed species. Grading activities would disturb soil, thus indirectly impacting the vegetation communities by creating opportunities for non-native invasive weed species to colonize the disturbed construction areas. Invasive weed species could out-compete native plants for resources such as water and space. Additionally, soil disturbance could reduce the native seed bank associated with the site. 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.

Some segments of the Proposed Project have been disturbed by the presence of non-native plant species and current human activity. Additional ground disturbance due to the construction of the Proposed Project would remove the existing native vegetation in the Proposed Project area and could result in the potential spread of non-native invasive weed species. Non-native invasive weeds could also be spread during operation and maintenance activities, such as from additional vehicle traffic due to planned maintenance activities for the Proposed Project (Table 2-12). Additional vehicles and crews could indirectly impact the native vegetation by inadvertently tracking in clinging seeds and/or parts of noxious weeds, thus facilitating their spread. The spread of noxious weed could also impact special use areas/special management areas such as ACEC's and the Mojave National Preserve. The potential for this impact to the Mojave National Preserve has been reduced by avoidance of the Preserve, but impacts could still results from the Proposed Project traversing ACECs. The implementation of erosion control measures are likely to reduce short term erosion and compaction impacts, and implementation of a weed management plan would control non-native plant species in areas of construction disturbance.

In California, substantial adverse effects on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations by the CDFG or USFWS or substantial adverse effects through habitat modifications, on any species identified as a legally protected, candidate, sensitive, or special status species in local or regional plans, policies, or regulations, by the CDFG or USFWS is a significant impact under CEQA. In compliance with CEQA, impacts to native vegetative communities could be reduced to less than significant levels by adopting the Applicant's proposed minimization measures and mitigation measures.

As part of the design of the Proposed Project, the Applicant has committed to returning the construction ROW to its preconstruction grade, contour, and soil compaction level, in order to reduce impacts and provide the greatest opportunity for native vegetation to reestablish following construction. Furthermore the Applicant shall mitigate impacts to native vegetation through onsite habitat restoration or off-site habitat compensation to a level considered less than significant (URS Corporation 2010a). Contingent upon landowner approval, the Applicant has proposed the following minimization measures as part of the Proposed Project:

- **APMM BIO-01: Topsoil preservation.** Native topsoil shall be preserved and restored in all areas of the Proposed Project where soil layer mixing is a risk, thereby replacing the native seed bank to the Proposed Project area.
- **APMM BIO-02: Slash preservation.** Slash (i.e., cleared vegetation) shall be preserved and distributed over the disturbance area during the restoration phase of construction, to provide cover, minimize erosion, add organic matter, and to help retain native seed banks. Larger shrubs and succulents can be used in a similar matter when they cannot be salvaged (vertical mulch), and can help discourage the public from accessing restored work areas after the pipeline has been installed.
- **APMM BIO-03: Reseeding.** The Applicant shall reseed the right-of-way using a mix of native seed reflecting the species composition originally present at the request of the landowner. Additionally, cuttings of willows and mule fat shall be planted in riparian

areas to enhance restoration efforts (URS Corporation 2009). The appropriate agencies shall be consulted to determine where and when this is required and feasible.

- **APMM BIO-04: Native vegetation.** Excessive or non-essential removal of native vegetation shall be minimized.
- **APMM BIO-05: Implement of Restoration Plan and Weed Management Plan.** Applicant shall develop and implement a Habitat Restoration Plan and a Weed Management Plan for temporarily disturbed areas within the Proposed Project (*e.g.*, below-ground pipeline, staging areas, access roads, and maintenance). The restoration and monitoring plan shall become part of Applicant's post-construction general operation and maintenance program. The final plan shall be prepared and submitted prior to construction for BLM, USACE, USFS, and USFWS review and approval.
- **APMM BIO-06: Stay in the ROW.** The Applicant shall confine all construction activities to the typical 100-ft construction ROW and/or other approved areas unless otherwise authorized by BLM. .
- **APMM BIO-07: Post Construction Monitoring Report**. Within 60 days following Project completion, the applicant shall submit a post-construction monitoring report to the BLM, USACE, USFS, and USFWS. The report shall document the effectiveness of each avoidance and minimization measure; the actual acreage disturbed by Project activities by habitat type (including designated critical habitat); the number of individual special status species observed during construction; the number of individuals killed, harmed, harassed, or injured in accordance with the incidental take statement; and any other pertinent information. The report shall also make recommendations for modifying avoidance and minimization measures in order to enhance species protection in the future.
- **APMM BIO-08: Construction Best Management Practices (BMPs).** The Applicant shall implement the following BMPs during construction to the maximum extent practical:
    - Avoid water resources (including dry creeks or cement-lined channels) and associated vegetation whenever possible;
    - Protect water quality both on and off site by implementing a sediment and runoff management plan;
    - Do not allow runoff from construction activities to enter water sources;
    - Use measures such as straw bales (certified weed free) and silt fencing to control erosion;
    - Establish engineering retaining walls to minimize and avoid sensitive riparian habitats, streambeds, and wetlands;
    - Ambient dust generated from construction activities, including use of construction haul roads, access roads, staging areas, and disposal sites, shall be controlled by daily watering, or an alternative schedule as appropriate. No water shall be taken from natural streams and waterways;
    - At least five (5) days each week, the Applicant shall inspect for, and clean up, all litter and illegal dumping that occurs on, or adjacent to, the access roads and the length of the Proposed Project alignment. The clean up team shall consist of at least one truck with a minimum crew of two persons; and

- The Applicant shall install and maintain up to four temporary water sources for wildlife where access (at locations determined by USFS) to existing waters is blocked by construction.

These measures shall occur to the extent consistent with safe and efficient pipeline construction. Certain vegetation communities may be Army Corps of Engineers (ACOE) and/or CDFG jurisdictional, and/or may provide habitats for special-status plant and animal species. The following are additional mitigation measures that would be incorporated to further reduce impacts to native vegetation community. In these instances, mitigation will be agreed upon in consultation with the appropriate agencies. The following mitigation measures shall also be employed to reduce impacts on native vegetation:

- **MM BIO-01: Staking and flagging.** The Proposed Project shall be clearly staked and flagged in advance of construction. The construction area includes approved work areas for access roads, staging and equipment storage.

Even with implementation of the Applicant's proposed minimization measures and MM-BIO-1, residual impacts to vegetative communities would occur. Although the measures would be implemented to reduce the area of impact and avoid specific resources, damage to vegetated areas would still occur.

Impact BIO-2: Impact to special status plants. *Construction activities would result in both direct and indirect impacts to special-status plants through potential removal during clearing and grading, and potential increase of noxious weeds into the Proposed Project area.*

Under NEPA, clearing and grading activities would result in adverse impacts to special status plant species similar to those described for native vegetation communities for Impact BIO-1. Based on information provided by the Applicant, consultation, and specific comments from resource agencies, there is the potential for the direct loss of 11 special status plant species which are listed above in Table 3.7-1. For the assessment of impacts to special status plant species, species were grouped into annual species, perennial non-succulent species, and perennial succulent species.

Annual Species

Albert's sanvitalia, crowned muillla, Parry's spineflower, slender-horned spineflower, and white-bracted spineflower were observed in the Proposed Project area and have a high potential to be impacted by Project construction, operation, and maintenance. These annual plant species were observed in low numbers in a few localized areas of the Proposed Project and could be adversely impacted by Project construction, operation, and maintenance. Clearing and grading activities could cause the direct loss of the observed individuals of these special status species. However, the impacts to these annual species would be expected to be minor and short-term, because topsoil containing the seedbank for these species will be salvaged and restored, and because additional suitable habitat for these species is present adjacent to the impact area. Impacts would be localized and limited to those areas of the Proposed Project that would be disturbed by clearing and grading activities. In addition, no long-term adverse indirect impacts on this species are anticipated based on implementation of mitigation measures, and because construction and maintenance activities would be temporary in nature. Additionally, the following mitigation measures would be employed to reduce impacts. The Applicant's proposed minimization measures and mitigation measures listed following the discussion of special status plant species would reduce impacts to Albert's sanvitalia, crowned muilla, Parry's spineflower, and white-bracted spineflower to less than significant levels.

Slender-Horned Spineflower
No impacts on the known population of the slender-horned spineflower are expected to result from construction of the Proposed Project. The Project would be constructed on the east side of Cajon Boulevard, separated from the SHSF population and the wash by Cajon Boulevard, the inactive two-lane section of Route 66, and the median between these roadways. Pipeline construction and maintenance activities would avoid this SHSF population. However, suitable habitat was identified along the existing lines, but was not surveyed to determine presence or absence. Maintenance activities may result in up to one acre of ground disturbance and occasionally up to 10 acres of ground disturbance and may affect any population occurring along these lines.

Perennial Non-Succulent Species

The following perennial non-succulent species have a high potential to be impacted by construction, operation, and maintenance of the Proposed Project; Clark Mountain buckwheat, Coulter's matilija poppy, desert milkwort, New York Mountains cryptantha, Nevada onion, nine-awned pappus grass, Plummer's mariposa lily, small-flowered androstephium, Southern California black walnut, Utah vine milkweed, and white-margined beardtongue. All of these species were either observed within or immediately adjacent to the Proposed Project area. Clearing and grading activities could result in adverse impacts to all observed individuals that cannot be avoided. The duration of the adverse impacts to these species could be both short-term and long in nature, depending on whether plant individuals could re-colonize on their own (a species specific factor), which would also depend on whether the existing seedbank was still present after clearing. Impacts would be localized and limited to the areas of the Proposed Project that would be disturbed by clearing and grading activities. The Applicant's proposed minimization measures and mitigation measures listed following the discussion of special status plant species would reduce impacts to the special status perennial non-succulent species to less than significant levels.

White-Margined Beardtongue
Impacts to white-margined beardtongue could potentially occur under the Proposed Project. The alignment of the Proposed Project traverses an approximately 2.5-mile portion of the Ivanpah Valley (between MP 205 and 208) where a known population of white-margined beardtongue exists. Given that construction-related activities in this area could potentially impact more than 30 acres of occupied habitat and avoidance is not a feasible option because the population is too large, and in order to comply with the Clark County Multiple Species Habitat Conservation Plan goal of no net unmitigated loss of this species, MM-BIO-03 has been developed, and is discussed below.

Santa Ana River woolly-star
No impacts on the Santa Ana River woolly-star are expected to result from the Proposed Project. SARWS was not detected during botanical surveys in 2008 and 2009. A CNDDB record from 2006 occurs within the action area approximately 0.3 mile north of MP 23. However, upon further review of the CNDDB record, it is apparent that the plant was misidentified at this location (CNDDB 2008). In 2009, botanists confirmed that the specimen is indeed giant woolly-star and not SARWS. The nearest extant records for SARWS are within Cajon Wash, downstream of Institution Road (Wood and White 2008). These records do not exist within the action area. The Project, however, borders the western edge of the Santa Ana River Preserve

along Institution Road. Calnev will avoid this preserve by reducing the width of their construction area and restricting ground disturbing activities to an existing road, to the extent practicable.

Nevin's Barberry

No impacts on the Nevin's Barberry are expected to result from the Proposed Project. This species is identifiable all year and because two years of botanical surveys were conducted, there is high confidence that this species does not occur within the construction area of the 16 inch pipeline. However, no surveys were conducted along the existing lines and presence or absence cannot be established. Therefore, the species may be affected by maintenance activities.

Perennial Succulent Species

The following perennial succulent species have a high potential to be adversely impacted by construction, operation, and maintenance of the Proposed Project; Parish's club-cholla, short-joint beaver tail cactus, and desert pincushion. Clearing and grading activities could result in adverse impacts to all observed individuals that could not be avoided. The adverse impacts to these perennial succulent species would be short-term and long-term and minor to moderate and localized to portions of the Proposed Project that would be disturbed by clearing and grading activities. The increased magnitude of impacts described for succulent species are due to the difficulty of transplanting succulent species and their overall low survival rate following disturbance.

In California, a substantial adverse effect, either directly or through habitat modifications, on any species identified as a legally protected, candidate, sensitive, or special status species in local or regional plans, policies, or regulations, by the CDFG or USFWS is a significant impact under CEQA. In compliance with CEQA, impacts to special status plants would be reduced to less than significant levels by adopting the Applicant's proposed minimization measures and mitigation measures.

The following Applicant-proposed minimization measures and mitigation measures would reduce impacts to Parish's club-cholla, short-joint beaver tail cactus, and desert pincushion to less than significant levels.

- **APMM BIO-01: Topsoil preservation** (see above).
- **APMM BIO-02: Slash preservation** (see above).
- **APMM BIO-04: Native vegetation** (see above).
- **APMM BIO-05: Development of Restoration Plan and Weed Management Plan** (see above).
- **APMM BIO-06: Stay in the ROW** (see above).
- **APMM BIO-08: Construction Best Management Practices (BMPs)** (see above).
- **APMM BIO-09: Transplanting.** The Applicant shall transplant special-status perennials where possible. If required and approved by the appropriate agencies (BLM, FS USFWS, NDOW, County of San Bernardino), qualified biologists may collects the seeds of special-status plant species that face imminent destruction due to construction. These seeds may be given to agency botanists for stockpiling, or be used during the reclamation and revegetation segment of the Proposed Project.

- **APMM BIO-10: Slender-horned spineflower.** Construction crews will be instructed to avoid all impacts on the slender-horned spineflower. No specific mitigation measures are proposed for slender-horned spineflower because no impacts on this species would occur as a result of the Proposed Project. The population observed near MP 19 is on the south side of Cajon Boulevard near the wash. The Proposed Project would be constructed on the east side of Cajon Boulevard, and separated from the slender-horned spineflower population by Cajon Boulevard, an inactive two-lane section of Route 66, and the median between these roadways. The area supporting the population will be clearly fenced with orange construction fencing and construction personnel will be prohibited from entering the area. A Biological Monitor will perform daily visits during the active construction activities at this location to verify that the construction fencing is in place and remind crews to avoid entry to the area. In the event unauthorized impacts to slender-horned spineflower occur during pipeline construction, construction activities will cease at this location and the Biological Monitor will notify the USFWS within 24 hours.
- **APMM BIO-11: Biological Monitors.** Biological Monitors shall be provided to be responsible for overseeing the Proposed Project's environmental protection and mitigation measures. Environmental inspection and monitoring procedures will be in compliance with the environmental commitments documented in the Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) and any special conditions that will be required as part of other Federal and/or State permits, approvals, or licenses. The Biological Monitor will be a qualified biologist who shall be responsible for identification of habitat that supports special status species. The Biological Monitor shall be responsible for implementation of measures requiring a qualified biologist's intervention and, if needed, shall hold the required permits or Memoranda of Understanding (MOU) with appropriate Federal and State agencies for the survey for or handling of any listed species. The Biological Monitor shall have the contractual authority to temporarily halt construction should a federally listed, state listed, or special status species be found or encountered during construction activities so that procedures may be implemented to either relocate the species (if applicable) or notify the appropriate agency personnel.
- **APMM BIO-12: Delineation and identification of sensitive areas.** Prior to construction, the Applicant shall stake, flag, fence or otherwise conspicuously delineate all environmentally sensitive areas that are to be protected in place and remain undisturbed during construction. Environmentally sensitive areas will include wetland, riparian habitat, aquatic habitat, raptor nesting locations, and occupied special status species habitats. The construction materials used to delineate environmentally sensitive areas shall be removed no later than 30 days following completion of construction.
- **APMM BIO-13: Reporting of special status species.** All encounters with special status species shall be immediately reported to the Biological Monitor, who shall record the following information:
    - Species name;
    - Location (narrative and maps) and dates of observations;
    - General condition and health, including injuries and state of healing;
    - Diagnostic markings, including identification numbers or markers; and
    - Locations moved from and to (if applicable).

- **APMM BIO-14: Worker Environmental Awareness Program (WEAP).** All applicant employees and contractors working in the field would complete a WEAP administered by a qualified biologist that is familiar with the species in question. Program content would be approved by the USFWS, BLM, and appropriate state agencies. At a minimum, the program would cover species identification, distribution, general behavior and ecology, sensitivity to human activities, threats (including introduction of exotic plants and animals), legal protection, penalties for violations of federal and state laws, reporting requirements, and Project-related mitigation measures in the Biological Opinion. All field workers would be instructed that activities must be confined to locations within the approved Proposed Project area. In addition, the program would include fire prevention measures to be implemented by employees during construction of the Proposed Project. The program would instruct participants to report all special status species observations during construction activities to a Biological Monitor.

Impacts on special status plant species would be reduced during construction activities and operation and maintenance through the implementation of the minimization measures noted above as well as the additional Mitigation Measures listed below:

- **MM BIO-02: Avoid Sensitive plant species.** The Applicant shall conduct surveys and avoid populations of sensitive plant species within the right-of-way to the extent possible. Prior to conducting construction and maintenance-related ground disturbance within the known range of the slender-horned spineflower, Santa Ana River woolly-star, and Nevin's Barberry, a qualified botanist will survey the area to determine if suitable habitat is present. If identified plants can be avoided, the special-status plants shall be clearly marked with flagging or fencing (silt, safety, etc). If avoidance is not possible, the Applicant shall mitigate for loss of sensitive plant species either on- or off-site at a ratio acceptable to the CDFG and BLM and the Federal Agency of jurisdiction on other Federal lands.

- **MM BIO-03: White-margined beardtongue mitigation.** Compensatory mitigation for direct, indirect, and cumulative impacts to the white-margined beardtongue population in the Ivanpah Valley would require a single payment of $75,000 be made by the Applicant to the Center for Plant Conservation in St. Louis, Missouri. These funds would be used by the Center for Plant Conservation as a sponsorship specifically for the white-margined beardtongue to support the conservation of genetic uniqueness of the population affected by the Proposed Project, and to contribute to the long-term conservation of this species.

- **MM-BIO-04: Specific Contents of Restoration Plan.** The Restoration Plan specified as "if required" in APMM BIO-09 is hereby required. The Plan shall be submitted to the appropriate agencies (BLM, FS USFWS, NDOW, County of San Bernardino) for review and approval. Qualified biologists shall collect the seeds of special-status plant species that face imminent destruction due to construction. These seeds shall be given to agency botanists for stockpiling, and be used during the reclamation and revegetation segment of the Proposed Project. The Plan shall also describe the plan for transplanting of succulent species, in accordance with BLM's Cactus and Yucca Removal Guidelines.

Even with implementation of the Applicant's proposed minimization measures and MM-BIO-2, MM-BIO-3, and MM BIO-4, residual impacts to special-status plants would occur. Although the measures would be implemented to reduce the area of impact and avoid special-status plants, damage to vegetated areas would still occur.

Impact BIO-3: Impact to Wildlife. *Construction and operation activities would result in both temporary and permanent impacts to wildlife; specifically, impacts associated with habitat degradation from excavation-related ground disturbance and increased human activity in the area.*

Under NEPA, the Proposed Project would result in minor, adverse impacts to local wildlife and the local distribution of wildlife communities. The majority of impacts would occur during the construction period of the Proposed Project, while minor long-term impacts would be expected to result from periodic operation and maintenance activities. Clearing/blading and grading activities for project infrastructure would directly affect wildlife by removal and crushing of shrubs and herbaceous vegetation, resulting in loss and fragmentation of cover, breeding and foraging habitat. Soil erosion from construction activities and vehicle activity, which affects vegetation and soil properties, could have an adverse effect on wildlife foraging and burrowing potential to lands outside of the Proposed Project area. The period of time that would be required for revegetation and subsequent recolonization of disturbed areas would be lengthy and therefore impacts would be considered long-term for any portion of the ROW in which blading activities are conducted. Construction and operation of the Proposed Project could also result in wildlife/vehicle collisions and burial in dens or burrows, particularly for small animals such as mice, rats, squirrels, frogs, lizards, and snakes. Aboveground Project infrastructure would result in a long-term removal of wildlife habitat from the Proposed Project area (Silver Lake Pump Station, SCE Slover transmission line towers, Sunset Junction, improvements to existing access roads, and construction of Afton Access Road). Aquatic invertebrates, fish, and their habitat at Cajon Wash and the Mojave River crossing at La Delta would not be adversely impacted because the applicant would use the HDD installation technique to avoid disturbance in these areas.

In addition to direct impacts associated with the construction period, indirect impacts could result if wildlife movement/migration is restricted due to a lack of suitable habitat or if suitable alternative habitat is not available in the Proposed Project area. Some wildlife species could experience increased predation levels from ravens and other predators attracted to the project site. Increased levels of noise and human activity would be detrimental to many wildlife species, particularly big game. Noise, vibration, and human activity could cause wildlife species, primarily reptiles (western fence lizard, California side-blotched lizard, desert horned lizard, desert spiny lizard, Great Basin whiptail, red coachwhip, striped racer snake, and Mojave rattlesnake) and small mammals (California ground squirrel, mule deer, raccoon, and desert kangaroo rat) that utilize the existing habitats within the project area to avoid an area until the disturbance conditions have concluded; however, less mobile species could potentially be directly affected in the immediate area of construction during ground disturbing activities. Most species are expected to reoccupy adjacent habitats following completion of construction activities and recovery of the vegetation. Long-term impacts could occur in woodlands, riparian habitat, and sage scrub where long-lived, structurally diverse vegetation would be cleared because vegetation removed in these areas requires a longer period for reestablishment. The loss of this vegetation could affect wildlife species for longer time periods by reducing available refuge areas, foraging habitat, and nesting/roosting areas. Should a release or spill of pipeline material occur, it would result in long-term impacts to wildlife due to a degradation of habitat. Indirect wildlife impacts could also occur if the Proposed Project were to create roads that increase OHV access in currently inaccessible areas.

Impact BIO-4. Impact to special-status terrestrial wildlife species. *Construction and operation activities would result in both temporary and permanent impacts to terrestrial species due to habitat loss and disturbance from increased human activity in the area.*

The Proposed Project would adversely impact local special status wildlife and the local distribution of wildlife communities. The majority of the impacts would result from construction of the pipeline portion of the Proposed Project.

Under NEPA, clearing and grading activities for project infrastructure would cause the direct loss of protected terrestrial wildlife habitat within the Proposed Project area. Impacts to special-status terrestrial wildlife habitat in these areas would largely be associated with the clearing and grading activities, but could extend throughout construction if mobile species attempt to traverse the ROW. Impacts could be either short- or long-term dependent on a species' ability to re-colonize the ROW following construction activities. Aboveground Project infrastructure would result in a long term removal of wildlife habitat from the Proposed Project area (Silver Lake Pump Station, SCE Slover Transmission Line towers, Sunset Junction, improvements to existing access roads, and construction of Afton Access Road).

Construction activities would result in a short-term and potential long-term loss of habitat for special-status wildlife foraging, breeding, and dispersal. This loss could occur directly as a result of disturbance of soil, vegetation, and other essential habitat features by construction equipment. Direct impacts to habitat could also occur if project construction were to cause onsite or offsite erosion. Direct impacts to individuals could occur through vehicle strikes, or if individuals were to enter open trenches. Indirect impacts to individuals and habitat could occur if habitat movement is restricted, or if suitable alternative habitat is not available in the Proposed Project area.

Noise, vibration, and human activity would likely cause most wildlife species to avoid an area until the disturbance conditions have concluded, however less mobile species could potentially be killed in the immediate area of construction during ground disturbing activities. Most species are expected to reoccupy adjacent habitats following completion of construction activities and recovery of the vegetation. Long-term impacts could occur in woodlands, riparian habitat, and sage scrub where long-lived, structurally diverse vegetation would be cleared because vegetation removed in these areas requires a longer period for reestablishment. The loss of this vegetation could affect wildlife species for longer time periods by reducing available refuge areas, foraging habitat, and nesting/roosting areas.

Invertebrates

A single special-status invertebrate species, the Delhi sands flower-loving fly, was identified as occurring or having a high potential to occur within the Proposed Project area. In addition, there were two USFS watch list and Region 5 sensitive invertebrate species identified as occurring or having potential to occur with the Proposed Project area: greenest tiger beetle and San Gabriel Mountains blue butterfly. Impacts to invertebrates could result during excavation and movement of large equipment, or from increased vehicle use on the site during operation and maintenance activities. Compaction of soils and introduction of exotic plant species due to grading and removal of vegetation during construction, operation, and maintenance activities could result in indirect adverse habitat loss over time. Additional disturbance due to increased noise, light, and vibration during construction could result in the temporary displacement of individuals. The Proposed Project would result in the loss of a small amount of suitable habitat for the invertebrate species with potential to or known to occur in the Proposed Project area; however, given the amount of similar habitat available adjacent to the project area, this habitat loss would be temporary and minor.

Delhi Sands Flower-loving Fly
Based on information submitted, adverse impacts to Delhi sands flower-loving fly (DSFLF) would be limited to within the construction footprint of the new transmission line required to connect the Colton Terminal to the existing Southern California Edison transmission line located approximately 150 ft east of the North Colton Terminal fenceline. Construction of this transmission line and the associated three power poles at the northeast corner of the Colton Terminal would result in approximately 0.92 acres of temporary impacts, but only approximately 85 square feet (0.002 acre) of permanent impacts on likely occupied Delhi sands flower-loving fly habitat. Since access was not available to the actual impacted properties, the DSFLF presence is based on the identification of the species on adjacent properties with similar habitat availability. Temporary impacts would result from transmission line construction, including the stringing of lines. Permanent impacts would result from the 6-ft diameter foundations of two tubular steel poles and one wooden pole. The clearing and grading activities within the construction footprint of the transmission line may result in the direct loss of individuals from crushing of individuals by construction equipment. However the applicant's commitment for avoidance of construction activities during Delhi sands flower-loving fly flight period (July 1 through September 20) would reduce the potential for impacts to occur the species. Construction activities could result in the introduction of noxious weeds, modifying the existing Delhi sands flower-loving fly habitat within the transmission line construction footprint and the adjacent Delhi sands flower-loving fly habitat. Noxious weeds could out-compete the native plant species that the Delhi sands flower-loving fly is dependent on and could result in the loss of Delhi sands flower-loving fly habitat within the Colton Recovery Unit. The potential for impacts due to the introduction of noxious weed would be lessened by the implementation of the applicant's Noxious Weed Plan.

Under NEPA, the impacts to Delhi sands flower-loving fly would be minor and localized due to the small footprint of the construction area of the transmission line, and low likelihood of direct loss due to the mobility of the Delhi sands flower-loving fly and avoidance of construction during the flight period. Impacts would be short-term for those portions of the transmission line that would temporarily disturb Delhi sands flower-loving fly habitat and long-term for those portions of the transmission line that would result in the permanent loss of Delhi sands flower-loving fly habitat.

To further reduce the potential impacts to the Delhi sands flower-loving fly to less than significant, the Applicant's proposed minimization measures and mitigation measure listed following the discussion of all special status terrestrial species would need to be implemented.

Fish

A single special-status fish species, the Santa Ana Speckled Dace, was identified as occurring or having a high potential to occur within the Proposed Project area. Impacts to fish could result if hazardous materials or pollutants were to be released to water bodies during project construction or operation. This could occur due to the release of sediment from disturbed areas during construction, release of bentonite-based clay during a HDD frac-out, or release of petroleum product during operations. A variety of Proposed Project activities, applicant-proposed minimization measures, and agency-required mitigation measures would be implemented to reduce the potential for any of these releases to occur, and to respond in the case of a release. HDD drilling techniques would be used to avoid any disturbance of sediment within Cajon Creek. The HDD staging areas would be subject to the same stormwater controls as the rest of the project.

Santa Ana Speckled Dace

Based on the applicant's proposal to directionally drill the Cajon Wash, impacts to the Santa Ana Speckled Dace would be minimized. However, some impacts to Santa Ana speckled dace or its habitat within the Cajon Wash could occur in the vicinity MP 25 in conjunction with the HDD drilling under the Cajon Wash. Potential impacts are possible in the event of a frac-out during the HDD. Drilling lubricant (typically bentonite clay) could enter speckled dace habitat when a frac-out occurs, negatively affecting the water quality or result in the direct loss of individuals. If a frac-out occurs, impacts would be localized to extensive depending on the magnitude of the frac-out. Impacts would be short-term in nature. Impacts on Santa Ana speckled dace or its habitat along other dace-occupied portion of Cajon Wash are not anticipated from operation and maintenance activities, because these portions of the Cajon Wash would be avoided during these activities. If these activities required work within the wash, the applicant would need to enter discussions with the appropriate federal and state agencies to establish specific measures to protect the dace.

To further reduce the potential impacts to the Santa Ana speckled dace to less than significant, the Applicant's proposed minimization measures and mitigation measure listed following the discussion of all special status terrestrial species would need to be implemented.

Amphibians

A single special-status amphibian species, the arroyo toad, was identified as occurring or having a high potential to occur within the Proposed Project area. In addition, there were two USFS watch list and Region 5 sensitive amphibian species identified as occurring or having potential to occur with the Proposed Project area: arboreal salamander and garden slender salamander. Impacts to amphibians could result during excavation and movement of large equipment, and trapping individuals in open trenches, or from vehicle use on the site during operation and maintenance activities. Compaction of soils and introduction of exotic plant species due to grading and removal of vegetation during construction, operation, and maintenance activities could result in indirect adverse habitat loss. Additional disturbance due to increased noise, light, and vibration during construction could result in the temporary displacement of individuals. The Proposed Project would result in the loss of a small amount of suitable habitat for the amphibian species with potential to or known to occur in the Proposed Project area; however, given the amount of similar habitat available adjacent to the project area, this habitat loss would be temporary and minor.

Arroyo Toad

Management Objectives

The arroyo toad was selected as an MIS to detect the effects of National Forest activities and uses on low-elevation riparian and aquatic habitat. Long-term trends in population abundance, stream occupancy, and habitat condition are expected to reflect the effectiveness of management actions in protecting low-elevation riparian and aquatic habitat from disturbance and habitat degradation. The desired condition for the arroyo toad is that habitats for federally listed species are conserved, and listed species are recovered or are moving towards recovery.

Population Trends

Arroyo toads have disappeared from approximately 75 percent of the species' historically occupied habitat in California. Historically, the species occurred in coastal drainages from their estuaries to their headwaters. However, the species has now been extirpated from much of their former habitat, and now survive primarily only in headwaters of coastal streams (USFWS 2009a). The arroyo toad was listed Endangered by the USFWS in 1995 and is known to occur in 22 major drainages of southern California and northwestern Baja California. The USFWS originally designated critical habitat (DCH) for this species in 2005, then redesignated it in 2011 and it does exist within the Proposed Project area.

Proposed Project Impacts

The Proposed Project area contains Designated Critical Habitat for the Arroyo Toad which would be adversely impact by surface disturbance as a result of construction of the Proposed Project from approximately MP-17a to MP-25 . The impacts would result from surface disturbance and vehicle traffic adjacent to and within Cajon Wash. Arroyo toad habitat impacts were calculated using GIS analysis of native vegetation and areas upland of vegetation types identified under arroyo toad breeding habitat. Upland areas included all areas within 1km of identified suitable habitat (URS Corporation 2010a).

The Proposed Project alignment would be constructed within an existing developed road (Cajon Boulevard) that passes through DCH, as well as within Cajon Wash itself. The road passes through DCH, and the Proposed Project would result in direct surface disturbance of 12.6 acres of upland habitat within this DCH. The developed road itself is not suitable ARTO upland habitat, and little upland habitat supporting friable, sandy soils exist along the road in this vicinity. However, if individuals are present in this area and project activities are not mitigated, this surface disturbance and vehicle traffic could result in injury or mortality to individuals.

Impacts on this species are not expected at the Cajon Wash tributary crossings at MP-18.3 and MP-22.9 because this species was not detected during focused surveys at these locations in 2008, and because the Proposed Project would use the HDD installation method to avoid surface disturbance within the tributaries at those locations. However, potential upland habitat at these crossings (near MP 18.5, 23) would be impacted temporarily because some of this adjacent habitat would be designated as HDD workspace. These temporary impacts would include laydown and staging for the HDD event.

Construction of the portion of the Proposed Project within Cajon Wash would result in direct surface disturbance of 7.6 acres of DCH that is considered to be breeding habitat. If individuals are present in this area and project activities are not mitigated, this surface disturbance and vehicle traffic could result in injury or mortality to individuals.

Maintenance activities may may also result in disturbance up to one acre with occasional disturbance of up to ten acres. Any excavation of the existing lines at the confluence of Swarthout Canyon may result in direct effects on arroyo toad. Maintenance activities on the existing lines in sandy wash habitat may result in impacts on ARTO, especially if maintenance activities must occur during the ARTO breeding season. Impacts on ARTO due to maintenance activities that require soil disturbance would occur from digging up soils to access the pipe, as well as from the various construction equipment required for such an undertaking. If the maintenance action occurs at a stream crossing, then impacts on ARTO breeding habitat may occur, and may include digging up stream substrate, diverting flow, and water quality impacts (increased turbidity, etc.). ARTOs have been documented in uplands up to one mile from breeding habitat (USFWS 1999c); however, soils must be appropriate for burrowing if the species is to survive in the uplands outside the breeding season. Suitable upland ARTO habitat must support friable, sandy soils for burrowing and not have a gradient too steep for ARTO movement.

Although suitable habitat was identified in proximity to the Mojave River crossing at La Delta, the species is thought to be extirpated from this area, and as such no impacts are anticipated or discussed.

Prior to construction or any maintenance activities, the applicant has committed to pre-construction surveys to determine the presence/absence of arroyo toads in the Proposed Project area, including all areas that would be disturbed due to excavation and traffic from project-related equipment. If potential habitats are occupied, impacts could result from direct loss of individuals due to the trapping of individuals in open trenches. The loss of adjacent suitable upland habitat could also displace individuals and could result in increased competition for resources. Individuals could be harmed by inadvertent hazardous materials spills, including equipment fuel and hydraulic fluid leaks. To further reduce the potential impacts to the arroyo toad and arroyo toad habitat to less than significant under CEQA, the Applicant's proposed minimization measures and mitigation measure listed following the discussion of all special status terrestrial species would need to be implemented.

Reptiles

Based on project data, there are nine species of special status reptile species identified as occurring or having a high potential to occur within the Proposed Project area; banded Gila monster, chuckwalla, coast horned lizard, coastal rosy boa, coastal whiptail, collared lizard, desert tortoise, southwestern pond turtle, southwestern speckled rattlesnake, San Bernardino ringneck snake, and two-striped garter snake. In addition, there were three USFS watch list identified as occurring or having potential to occur with the Proposed Project area: desert night lizard, Great Basin collared lizard, coast patch-nosed snake.

Impacts to reptiles could result during excavation and movement of large equipment, and trapping individuals in open trenches, or from increased vehicle use on the site during operation and maintenance activities. The Proposed Project would result in the loss of a small amount of suitable habitat for the reptile species with potential or known to occur in the Proposed Project area. Compaction of soils and introduction of exotic plant species due to grading and removal of vegetation during construction, operation, and maintenance activities could result in indirect adverse habitat loss. Additional disturbance due to increased noise, light, and vibration during construction could result in the temporary displacement of individuals. Impacts to the banded Gila monster would be limited to the portions of the Proposed Project located within California, because the banded Gila monster does not occur along the Nevada portion of the Proposed Project area. Impacts would be localized and limited to the construction footprint.

The implementation of temporary fencing surrounding the construction zone and Biological Monitors would reduce the potential for impacts to these species from construction. To further reduce the potential impacts to special status reptile species to less than significant under CEQA, the listed mitigation measures would need to be implemented. Additional assessments are provided for those special-status reptile species that require species-specific Applicant-proposed minimization measures and mitigation measures to lessen the potential impacts resulting from the Proposed Project.

Desert Tortoise

Desert tortoise would be adversely impacted by construction activities along the proposed route, alternatives, access road improvements, work space turnarounds, HDD workspace near MP 54, 76, 86, 118, 224, and the new pump station. Impacts to the desert vegetation within the construction workspaces would be long-term in duration and would need to be reclaimed following construction to allow the reestablishment of native vegetation communities. Permanent impacts on desert tortoise habitat, resulting from a loss of available habitat would occur along newly established access roads, and at new valve locations. The majority of the Proposed Project area would be constructed within habitats well-documented to support desert tortoise. Thirty-nine desert tortoises were observed along the Project alignment and alternatives during focused surveys outside of DCH in 2008, and additional desert tortoise were found during subsequent follow-up surveys along access roads and expanded work areas in 2009. The Project also traverses two DCH units in California (USFWS 1994). Take in the form of harassment of an undetermined number of individuals would result because Biological Monitors would conduct pre-clearance surveys and pick up and move tortoise out of harm's way.

Construction of the proposed pipeline alignment would result in a total of 1,497.7 acres of impact to suitable desert tortoise habitat on BLM land between MP 53 and MP 220. This includes impacts on 1,042.2 acres of Mojave creosote bush scrub, 222.8 acres of Mojave creosote bush scrub, 32.8 acres of desert saltbush scrub, 24.3 of desert saltbush scrub, 73.1 acres of blackbush scrub, 28.6 acres of Joshua tree woodland, 18.8 acres of Joshua tree woodland, 35.2 acres of Mojave wash scrub, 13.8 acres of open channel, 4.8 acres of mixed Mojave woody scrub, and 1.3 acres of Mojave mixed steppe. Of this disturbance, 3.0 acres would be permanent disturbance due to the construction of the proposed Silver Lake Pump Station. The Proposed alignment would result in impacts of approximately 390.4 acres of impacts on desert tortoise DCH. In addition to the impacts on BLM land, approximately 5 miles (61 acres) of the Proposed Project would occur within the modeled habitat on USFS land near Baldy Mesa. Other than the Silver Lake Pump Station, which would be permanent, impacts such as those caused by grading and clearing would be long-term in terms of restoration requirements, mitigation, and compensation.

Desert tortoises would be susceptible to death or injury from collisions with project 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 of the project, would have the potential to attract predators of the desert tortoise, including common ravens and domestic and feral dogs. 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 (URTD) 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.

Vehicles and equipment used during operations and maintenance of the project would make desert tortoises susceptible to death or injury from collision. Such activities, including line inspection and regular maintenance, would also potentially introduce noxious 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. Impacts on desert tortoise habitat resulting from maintenance actions requiring soil disturbance are considered temporary because the habitat would be restored after the maintenance is complete.

Implementation of the Applicant's proposed minimization measures listed following the discussion of special status terrestrial species would avoid or reduce the potential impacts to individuals and habitat. Impacts on the desert tortoise during construction of the Proposed Project could result from unintended take of individuals during construction of the Proposed Project. The Applicant's proposed minimization measures and mitigation measures listed would reduce impacts on the desert tortoise to less than significant levels under CEQA.

Under NEPA, potential significant impacts to desert tortoise as a result of operation and maintenance activities would most often be temporary in duration and minimal in impact. Most operation and maintenance activities would involve the use of only one or several vehicles or construction equipment. Potential impacts on desert tortoises do exist during these types of activities. In order to avoid or reduce these potential impacts, the Applicant's proposed minimization measures and mitigation measures listed below would need to be implemented.

Southwestern Pond Turtle

Impacts to southwestern pond turtle could occur within the vicinity of MP 54 where there is suitable habitat for this species; however this species was not observed during the field surveys. The Mojave River would not be directly disturbed by the Proposed Project, as the Applicant has committed to using a HDD to install the pipeline under the Mojave River. If the southwestern pond turtle is present, then potential impacts to southwestern pond turtle and its habitat are possible in the event of a frac-out during the HDD. Drilling lubricant (typically bentonite clay) could enter southwest pond turtle habitat when a frac-out occurs, negatively affecting the water quality or result in the direct loss of individuals. Southwestern pond turtles could be harmed by inadvertent hazardous materials spills related to the HDD activities, including equipment fuel and hydraulic fluid leaks.

Additionally, the elevated levels of noise and human presence during the HDD process could trigger habitat avoidance behavior that could hinder successful foraging and decrease basking events for individuals that would occur within the vicinity of MP 54. If a frac-out were to occur, adverse impacts would be local to extensive depending on the magnitude of the frac-out. The impacts would be short-term due to the short duration needed to complete the HDD and the required clean up a frac-out event.

To further reduce the potential impacts to the southwestern pond turtle to less than significant, the mitigation measures listed following the discussion of special status terrestrial species would need to be implemented.

Mammals

There were nine species of special status mammal species identified as occurring or having a high potential to occur within the Proposed Project area; Los Angeles pocket mouse, Mohave ground squirrel, mountain lion, San Bernardino kangaroo rat, San Diego black-tailed jackrabbit, San Diego desert woodrat, southern mule deer, Townsend's big-eared bat, and western mastiff bat. In addition, there were nine additional USFS watch list and Region 5 sensitive mammal species identified as occurring or having potential to occur with the Proposed Project area: Yuma myotis, long-legged myotis, western small-footed myotis, California leaf-nosed bat, western red bat, western spotted skunk, southern grasshopper mouse, ringtail, and American badger.

The Proposed Project would result in loss of suitable habitat with the majority of habitat loss being both short-term and long-term in duration within the construction ROW. Compaction of soils and introduction of exotic plant species due to grading and removal of vegetation during construction, operation, and maintenance activities could result in indirect adverse habitat loss over time. Additional disturbance due to increased noise, light, and vibration during construction could result in the temporary displacement of individuals. Impacts would be minor and would be short-term in nature due to the temporary loss of suitable habitat. Impacts would be localized and limited to the construction footprint.

Additional assessments are provided for those special status mammal species that require species-specific minimization measures and mitigation measures to lessen the potential impacts resulting from the Proposed Project.

Mohave Ground Squirrel

No Mohave ground squirrels were observed within suitable habitat along the proposed pipeline route; however, the applicant has not completed trapping surveys adhering to CDFG Mohave Ground Squirrel Survey Guidelines (CDFG 2003). Therefore, protocol Mohave ground squirrel surveys would need to be conducted for one year prior to construction activities within portions of the Proposed Project area that contain suitable Mohave ground squirrel habitat to confirm the presence/absence of Mohave ground squirrels within the Proposed Project area. The trapping program shall be developed and approved through consultation with CDFG. If Mohave ground squirrels are determined to be present then construction related activities could result in adverse impacts to this species. There is the potential for the direct loss of individuals from clearing and grading activities, or from collision with construction vehicles. Elevated levels of noise, light, and vibration disturbance during construction could trigger habitat avoidance behavior that could hinder successful foraging and breeding for individuals that potentially found within the construction ROW as well as any Mohave ground squirrels that occupy the immediate area outside of the construction ROW. The loss of habitat within the construction ROW would result on the displacement of any individuals that live within the construction ROW and could create additional pressure on foraging and shelter resources. Impacts to suitable habitat would be minor and both short-term and long-term in nature. Impacts would be localized and limited to the construction footprint.

Operation and maintenance could also impact the Mohave ground squirrel if the species is determined to be present within the Proposed Project area. Impacts could include direct loss of individuals from collision with maintenance vehicles, loss of Mohave ground squirrel habitat due to maintenance vehicles or additional grading and clearing, or avoidance of maintenance areas leading to an avoidance of resources. The impacts due to operation and maintenance would be minor and short-term in nature as they would only occur during maintenance activates and limited to maintenance areas.

If the Mohave ground squirrel is determined to occur within the Proposed Project area, the project may adversely impact the Mohave ground squirrel. To further reduce the potential impacts the Mohave ground squirrel to less than significant, the Applicant's proposed minimization measures and mitigation measures listed following discussion of all special status terrestrial species would need to be implemented.

San Bernardino Kangaroo Rat

The San Bernardino kangaroo rat was not observed during surveys within suitable habitat along the proposed pipeline route. However, the Proposed Project is located within known occupied

San Bernardino kangaroo rat habitat, as well as USFWS DCH for this species. Prior to construction the Applicant would conduct pre-construction protocol surveys to determine the areas of occupied San Bernardino kangaroo habitat.

Approximately 105.8 acres of DCH as mapped by the USFWS (2008) would be impacted by the proposed route, but this includes developed areas and other habitats not considered to support physical and biological features of a landscape that a species needs to survive and reproduce. Based on habitat surveys completed, pipeline construction along the proposed alignment would result in approximately 23.5 acres of temporary impacts on suitable San Bernardino kangaroo rat habitat. This includes impacts on 17.1 acres of Riversidean alluvial fan sage scrub, 2.3 acres of open channel, 1.2 acres of Riversidean sage scrub, 0.3 acres of disturbed chaparral, 0.1acres of Riversidean sage scrub/chaparral, 0.2 acres of non-native grassland, and 2.3 acres of disturbed vegetation, including disturbed and burned versions of these habitats. Temporary impacts to suitable San Bernardino kangaroo rat habitat may also result from the HDD workspace areas near MP 9.

The loss of San Bernardino kangaroo rat habitat would result in temporary impacts due to the loss of foraging and shelter resources present within the Proposed Project area. If San Bernardino kangaroo rats are present within the Proposed Project area, then the loss of the habitat would result in the displacement of any individuals that live within the construction ROW and could create additional pressure on foraging and shelter/cover resources within the adjacent areas of San Bernardino kangaroo rat habitat. Though the eventual revegetation of the Proposed Project area could result in the creation of circumstances consistent with the species' habitat requirements (*i.e.,* open or sparsely vegetated areas), there would be duration of time between disturbance and the revegetation of the Proposed Project area in which San Bernardino kangaroo rat habitat would not be present. Clearing and grading activities could also result in the compaction of soils, which could limit the ability of San Bernardino kangaroo rats to dig their shallow burrow systems that are necessary for shelter and rearing of offspring. There is the potential for the direct loss of individuals from clearing and grading activities, or from collision with construction vehicles. However, the avoidance of construction within occupied San Bernardino kangaroo rat habitat during San Bernardino kangaroo rat active season will decrease the potential for direct loss or injury of individuals. Impacts would be minor and would be both short-term and long-term in duration. Impacts would be localized and limited to the construction footprint.

Operation and maintenance could also impact the San Bernardino kangaroo rat if the species is determined to be present within the Proposed Project area. Impacts could include direct loss of individuals from collision with maintenance vehicles, loss or alteration of San Bernardino kangaroo rat habitat due to maintenance vehicles or additional grading and clearing, or avoidance of maintenance areas leading to an avoidance of resources. The impacts due to operation and maintenance would be minor and could be short-term or long-term nature as they would only occur during maintenance activities and limited to maintenance areas.

If the San Bernardino kangaroo rat is determined to occur within the Proposed Project area, the project may adversely impact the species. To further reduce the potential impacts the San Bernardino kangaroo rat to less than significant, the Applicant's proposed minimization measures and mitigation measures listed following discussion of special status terrestrial species would need to be implemented.

Los Angeles Pocket Mouse

The Los Angeles pocket mouse was not observed within suitable habitat along the proposed pipeline route. The extent of suitable Los Angeles pocket mouse habitat overlaps the extent of the identified San Bernardino kangaroo rat habitat. Unlike the San Bernardino kangaroo rat there is no DCH designated for the Los Angeles pocket mouse because this species is not a federal-listed species. Due to similarity in the biological and ecological characteristics of the Los Angeles pocket mouse and the San Bernardino kangaroo rat, impacts to the Los Angeles pocket mouse resulting from the construction, operation, and maintenance of the Proposed Project would be similar in nature to those impacts describe for the San Bernardino kangaroo rat.

Through the implementation of the Applicant's proposed minimization measures, activities associated with the construction, operation, and maintenance may impact to the Los Angeles pocket mouse and Los Angeles pocket mouse habitat, but would lessen the impacts to this species and its habitat. To further reduce the potential impacts to the Los Angeles pocket mouse and its habitat to less than significant the mitigation measures listed below would need to be implemented.

Other MIS Species

Four wildlife species that are designated as Management Indicator Species (MIS) by the USFS are potentially present within the Proposed Project area. These species are listed in Table 3.7-5. The discussion of management objectives and population trends provided below for the MIS species are derived from the SBNF Land Management Plan (USFS 2005). The discussion of impacts to the Arroyo Toad is provided above. The discussion of impacts to the song sparrow is provided in the discussion of Impact BIO-5 below.

Table 3.7-5 SBNF Management Indicator Species for Project Evaluation

Species	Indicators of Management	Measure	Relevance to Project
Mule Deer	Healthy diverse habitats	Trend in abundance and/or habitat condition	Occurs in project area
Mountain Lion	Habitat fragmentation	Trend in distribution, movement, and/or habitat conditions	Occurs in project area
Song Sparrow	Riparian habitat	Trend in abundance and/or habitat condition	Occurs in project area
Arroyo Toad	Aquatic habitat	Trend in abundance and/or habitat condition	Occurs in project area

Mountain Lion

Management Objectives

The mountain lion was selected as an MIS to detect the effects of National Forest activities and uses on landscape-level habitat fragmentation and habitat linkages. The desired condition for mountain lion is that habitat function conditions sustain healthy and that wildlife habitat functions are maintained or improved, including primary feeding areas, winter ranges, breeding areas, birthing areas, rearing areas, migration corridors, and landscape linkages (USFS 2005).

The objectives for mountain lion are that there are functional landscape linkages and that the species is well-distributed. Trends in distribution, movement, and/or habitat conditions are to be used as measurements for evaluation. The monitoring method is studies in cooperation with CDFG, USGS and other agencies. Fire and fuel management are the main tools intended to implement the objective for providing prey availability. The greatest concern for the long-term health of mountain lion populations on the National Forests of southern California is loss of landscape connectivity between mountain ranges and large blocks of open space on private land (USFS 2005).

Population Trends

Mountain lion population counts are very difficult and expensive, and do not exist in the project area or the SBNF. Recent state population estimates range from 2,500 to 6,000 individuals, with an increasing population trend. Between 2000 and 2008, there were eleven depredation permits issued for Mountain Lions within San Bernardino County; of those, only 1 mountain lion was taken. Human encounters with mountain lions have increased, leading to the belief that mountain lion populations have increased in the past several decades. Currently, there is no information that would lead to a cause for concern for mountain lion populations on the SBNF in the San Garbriel, San Bernardino, or San Jacinto Mountains. Recent cooperative CDFG and SBNF studies on San Gabriel bighorn sheep and mountain lions have documented movement of a collared mountain lion across Cajon Pass. This indicates that the landscape linkage is still functioning for lions at this time. All of the agencies involved in the Pass are cooperating to ensure that this will continue (USFS 2005).

Proposed Project Impacts

Though no individual mountain lions were observed during the biological surveys, mountain lion tracks were observed within Crowder Canyon, near MP 24.4. Based on the observation of tracks and the presence of suitable habitat to support mountain lions, the project has the potential to impact this species. Potential impacts to mountain lions would include temporary loss of foraging habitat during construction activities and temporary displacement of individuals during construction and maintenance activities. However, large areas of suitable habitat exist immediately adjacent to the proposed impact area, and all potential impacts would be short-term and minor and would be localized to specific areas of construction or maintenance activities. The greatest concern for the long-term health of mountain lion populations on the National Forests of southern California is loss of landscape connectivity between mountain ranges and large blocks of open space on private land. This Proposed Project would have no effect on landscape connectivity between mountain ranges. Through implementation of Mitigation Measures REC-2a and 2b, the applicant would ensure that temporary construction and permanent maintenance access roads would be made inaccessible to OHV traffic, so there would be no long term potential for vehicle strike or noise disturbance along these routes. Impact to the mountain lion resulting from the Proposed Project would be less than significant.

Southern Mule Deer

Management Objectives

The mule deer was selected as an MIS for forest health related to vegetation management, roads and associated recreation management. The desired condition for mule deer is that habitat functions are maintained or improved, including primary feeding areas, winter ranges, breeding areas, birthing areas, rearing areas, migration corridors, and landscape linkages. The objective for mule deer is that there are stable or increasing well-distributed populations. Trends in abundance and/or habitat condition are to be used for measuring populations. Populations are to be monitored by herd composition counts in cooperation with CDFG or by habitat condition (USFS 2005).

Population Trends

Mule deer populations across California and in southern California have declined from high levels in the early 1960s because of many factors. A sustained low survival rate of fawns is suspected as a major factor in the deer population decline. Factors thought to be contributing to the low survival rate of fawns include changes in the amount and distribution of vegetation and age classes, private land development adjacent to and within the National Forests, recreational use in key areas, lack of frequent small fires, and an increase in mountain lion predation. Severe drought cycles, which affect vegetation and water sources over several years, may also contribute to declines.

The SBNF contains 3 distinct deer herds, all within Deer Assessment Unit (DAU)-7. Overall, the DAU-7 deer population is considered to be decreasing by the CDFG. The DAU-7 population appears to be exhibiting a declining trend from 20,000 in 1996 to 10,000 in 2004. During that period, the population varied between approximately 22,000 in 2001 and approximately 7,500 in 2003 (USFS 2005).

Proposed Project Impacts

Though no southern mule deer was observed during the biological surveys, southern mule deer tracks and scat were observed along the portion of the Proposed Project that passes through Cajon Pass. Based on the observation of southern mule deer sign and the presence of suitable habitat to support the deer, the project has the potential to impact this species. Potential impacts to the southern mule deer would include temporary destruction of foraging habitat during construction activities and temporary displacement of individuals during construction and maintenance activities. However, large areas of suitable habitat exist immediately adjacent to the proposed impact area, and all potential impacts would be short-term and minor and would be localized to specific areas of construction or maintenance activities. Through implementation of Mitigation Measures REC-2a and 2b, the applicant would ensure that temporary construction and permanent maintenance access roads would be made inaccessible to OHV traffic, so there would be no long term potential for vehicle strike or noise disturbance along these routes. Impact to the southern mule deer resulting from the Proposed Project would be less than significant.

In California, a substantial adverse effect, either directly or through habitat modifications, on any species identified as a legally protected, candidate, sensitive, or special status species in local or regional plans, policies, or regulations, by the CDFG or USFWS is a significant impact under CEQA. In compliance with CEQA, impacts to special status plants could be reduced to less than significant levels by adopting the Applicant's proposed minimization measures and mitigation measures.

To minimize impacts on all terrestrial special-status species, the following minimization measures would be implemented:

- **APMM BIO-06: Stay in the ROW** (see above).
- **APMM BIO-08: Construction Best Management Practices (BMPs)** (see above).
- **APMM BIO-11: Biological Monitors** (See above).
- **APMM BIO-12: Delineation and identification of sensitive areas** (See above).
- **APMM BIO-13: Reporting of special status species** (See above).
- **APMM BIO-14: Worker Environmental Awareness Program (WEAP)** (See above).
- **APMM BIO-15: Project maintenance.** As practical the Applicant shall conduct routine Project maintenance activities during the season of year that would have the least impact on special status species in occupied habitats.
- **APMM BIO-16: Temporary fencing.** The Applicant would erect temporary exclusion fence prior to construction activities in habitats occupied by specific species for which the exclusionary fencing is desired (i.e. desert tortoise, arroyo toad, San Bernardino kangaroo rat, Los Angeles pocket mouse and Mojave ground squirrel), as determined during pre-construction surveys. This fence would be removed only after back-filling operations have been completed. Installation of the exclusionary fence would also prohibit other, non-special-status and protected wildlife from becoming trapped in the open trench during construction of the Proposed Project.
- **APMM BIO-17: Trash abatement.** A trash abatement program shall be initiated during the pre-construction phases of the Proposed Project, and would continue through the duration of the Proposed Project. Trash and food items must be contained in closed (raven-proof) containers and removed regularly (at least once a week) to reduce attractiveness to opportunistic predators such as ravens and coyotes. Upon Project completion, all construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes shall be removed from the site and disposed of properly. Domestic dogs shall be prohibited from the Project site and site access.
- **APMM BIO-18: Trapping.** A trapping program for Mohave ground squirrels shall be developed through consultation with CDFG and conducted within one year prior to construction activities. Furthermore, if the Mohave ground squirrel trapping survey results are positive within some portions of the route, the habitat compensation proposed for desert tortoise as described in the Biological Assessment (URS Corporation 2010b) would contribute to habitat compensation for loss of habitat on Mohave ground squirrels.
- **APMM BIO-19: Inspection of vehicles.** Employees and contractors shall carefully examine vehicles and construction equipment for the presence of special status species prior to moving their vehicles. If a special status species is found underneath or near a vehicle or piece of equipment, the Biological Monitor shall be notified immediately and

no equipment shall be moved until the animal has left voluntarily or is relocated by a biologist authorized to do so.

- **APMM BIO-20: Wildlife relocation.** Impacts on protected and special-status wildlife shall be mitigated by relocating any individuals observed within the immediate construction area to suitable habitat outside the development impact footprint, as feasible. Only a qualified Biological Monitor, possessing necessary permits, shall relocate individuals. All relocations of special-status species shall be documented and reported to the appropriate jurisdictional agencies, and consultation prior to relocation may be required.
- **APMM BIO-21: Santa Ana speckled dace.** Construction within areas of open water that support Santa Ana speckled dace populations shall be avoided. If avoidance is not possible, diversion of the stream and/or translocation of individuals shall be necessary.
- **APMM BIO-22: Existing routes of travel.** Existing routes of travel would be used for ingress and egress to Project sites. Access roads that require improvement in habitats occupied by desert tortoise or other special-status or protected wildlife would have an authorized biologist survey the area prior to modification of the route. Cross-country travel by vehicles and equipment would be prohibited. Except on county-maintained roads, vehicle and equipment speed limits would not exceed 25 miles per hour within suitable desert tortoise habitat.
- **APMM BIO-23: Pre-construction surveys for desert tortoise.** Construction sites, staging areas, and access routes would be cleared by a qualified desert tortoise biologist before the start of construction, ground-disturbing activities, equipment or vehicle staging, or other actions with the potential to harm or kill desert tortoises or other special-status and protected wildlife. An authorized biologist(s) must survey the site for desert tortoises using agency-approved survey techniques. If construction occurs during the desert tortoise active season (March 1 through October 31), or when temperatures and environmental conditions are conducive to tortoise activity as determined by an authorized biologist, the survey would occur within 48 hours before surface disturbance. During the inactive season (November 1 through February 28, except as noted above), when conditions are not conducive to tortoise activity as determined by an authorized biologist, one survey must occur within 72 hours of surface disturbance or up to five days in advance of disturbance if conditions are not favorable for tortoise activity.
- **APMM BIO-24: Desert tortoise burrows.** All potential desert tortoise burrows found in the construction zone, whether occupied or not, shall be excavated by an authorized biologist to allow removal of desert tortoises or desert tortoise eggs. Tortoises and nests found within the Proposed Project area must be relocated by an authorized tortoise biologist in accordance with the latest USFWS-approved protocol detailed in the Desert Tortoise Field Manual (USFWS 2009c). Unoccupied burrows would be collapsed or blocked to prevent tortoise re-entry. Any desert tortoise burrows and pallets that are observed outside of but within 50 feet of the construction work area must be flagged for avoidance. No stakes or flagging shall be placed on the berm or in the mouth of a desert tortoise burrow. Desert tortoise burrows shall not be marked in a manner that facilitates poaching. Avoidance flagging must be designed to be easily distinguished from access route or other flagging, and would be designed in consultation with experienced construction personnel and authorized biologists. All flagging shall be removed following construction activities.
- **APMM BIO-25: Excavated desert tortoises.** Tortoise excavated from burrows must be relocated to unoccupied natural or artificially constructed burrows immediately following

excavation. The artificial or unoccupied natural burrows should be located 150 to 300 ft from the original burrow. Relocated tortoises shall not be placed in existing occupied burrows. If an existing burrow that is similar in size, shape, and orientation to the original burrow is unavailable, the authorized biologist would construct one. Desert tortoises moved during inactive periods shall be monitored for at least two days after placement in the new burrows to ensure their safety. The authorized biologist would be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely.

- **APMM BIO-26: Above-ground desert tortoises.** Desert tortoises that are found above-ground would be moved from the construction ROW by an authorized biologist, and be placed in the shade of a shrub located 150 to 300 ft from the point of encounter.
- **APMM BIO-27: Desert tortoise handling procedures.** Procedures for handling tortoises would follow those described in the Desert Tortoise Field Manual (USFWS 2009c). All tortoises would be handled using disposable surgical gloves. The gloves would be disposed of after handling each tortoise. Equipment or materials that contact desert tortoises must be sterilized, disposed of, or changed before contacting another tortoise. Desert tortoises must only be moved for the purpose of moving the tortoises out of harm's way. The authorized biologist would document each tortoise encounter/handling with the following information, at a minimum: A narrative describing circumstances; vegetation type; dates of observations; conditions and health; any apparent injuries and state of healing; if moved, the location from which it was captured and the location in which it was released; maps; whether animals voided their bladders; and diagnostic markings (that is, identification numbers marked on lateral scutes).
- **APMM BIO-28: Blasting.** If blasting is required in desert tortoise habitat, a Biological Monitor shall be assigned to each blasting crew or area in which blasting would occur. Prior to any blast, a 200-ft area around the blast site must be surveyed for desert tortoises. Above-ground tortoises shall be relocated at least 500 feet from the blast site. Tortoises in burrows within 50 ft of the blast site shall be relocated at least 75 ft away from the blast site to an unoccupied existing or artificial burrow. Burrows located between 50 and 150 ft away from the blast site must be flagged and stuffed with newspaper prior to the blast. The newspaper shall be removed immediately after the blast and burrows assessed for damage.
- **APMM BIO-29: Fuel and waste spills.** Any fuel or hazardous waste leaks or spills shall be stopped or repaired immediately and cleaned up at the time of occurrence. The storage and handling of hazardous materials shall be excluded from the construction zone in areas within 100 feet of active tortoise burrows and wash crossings. Any unused or leftover hazardous products shall be properly disposed of off-site.
- **APMM BIO-30: Pipes and culverts larger than 3 inches in diameter.** Any construction pipe, culvert, or similar structure with a diameter greater than three inches above ground on the construction site for one or more nights shall be inspected for tortoises before the material is moved, buried, or capped by the Applicant. As an alternative, structures may be capped before being stored on the construction site.
- **APMM BIO-31: Environmental inspection.** Upon completion of construction, a thorough inspection of the site shall be conducted by the Environmental Inspector and authorized biologist to determine the extent of compliance with the conditions of USFWS's Biological Opinion. Within 90 days of completion of Project activities, the Environmental Inspector and/or authorized biologist shall submit a report to the BLM. The report shall document the numbers and locations of desert tortoises encountered, their disposition, effectiveness of protective measures, practicality of protective

measures, recommendations for future measures that allow for better protection or more workable implementation, and the number of acres disturbed.

- **APMM BIO-32: Desert Tortoise Biological Monitors**. An appropriate number of authorized biologists shall be onsite to act as Biological Monitors, and be present during construction for the protection of desert tortoises. The names of all authorized biologists shall be submitted to the BLM and USFWS for review and approval at least 30 days prior to initiation of any desert tortoise clearance surveys. Project activities shall not begin until authorized biologists have been approved. Replacements of authorized biologists shall require BLM and USFWS approval. Authorized biologists would be assigned to monitor each area of activity where conditions exist that may result in take of desert tortoise (*e.g.*, clearing, grading, lowering in pipe, backfilling, recontouring, and reclamation activities). An authorized biologist shall be assigned to each construction spread. Authorized biologists would be responsible for determining compliance with measures as defined by the Biological Opinion and other agreements. Authorized biologists shall maintain a detailed record of all desert tortoises encountered during Project surveys and monitoring.
- **APMM BIO-33: Authorized Desert Tortoise Biologist**: An authorized desert tortoise biologist should possess a bachelor's degree in biology, ecology, wildlife biology, herpetology, or closely related fields as determined by the BLM and USFWS. The authorized biologist must have demonstrated prior field experience using accepted resource agency techniques to survey for desert tortoise s and tortoise sign. In addition, the biologist would have the ability to recognize and accurately record biological information
- **APMM BIO-34: Moving Desert Tortoise during Hot Weather**: If desert tortoises need to be moved at a time of day when ambient temperatures could harm them (less than 40 degrees Fahrenheit or greater than 90 degree Fahrenheit), they must be held overnight in a clean cardboard box. These tortoises would be kept in the care of the authorized biologist under appropriate controlled temperatures and released the following day when temperatures are favorable. All cardboard boxes would be appropriately discarded after one use and never hold more than one tortoise.
- **APMM BIO-35: Desert Tortoise and Open Trenches**: Open pipeline trenches must be either fenced with temporary tortoise-proof fencing, or inspected by an authorized biologist periodically throughout and at the end of the day, and immediately prior to backfilling. Any tortoise that is found in a trench or excavation shall be removed by an authorized desert tortoise biologist in accordance with USFWS approved protocol or alternative method approved by the USFWS if the biologist is not allowed to enter the trench for safety reasons. Tortoise escape ramps would be provided at maximum 1-mile intervals along the trench.
- **APMM BIO-36: Desert Tortoise Operation and Maintenance Measures**: A Biological Monitor would be present during maintenance activities within occupied desert tortoise habitat, and pre-maintenance clearance surveys, Exclusionary fencing may also be required in occupied desert tortoise habitat, if the maintenance action requires significant ground disturbance.

  The following specific measures would be proposed to minimize potential Project effects on desert tortoises during pipeline operation and maintenance activities:

Class I: Little or No Surface Disturbance

- All applicant employees and its contractors involved with pipeline inspection and maintenance activities shall participate in a tortoise education program (described previously under Construction Mitigation Measures).
- If desert tortoises or their burrows occur in the work area, appropriate measures described previously under Construction Mitigation Measures would be implemented.
- Upon completion of each maintenance activity in the ROW, all used material and equipment would be removed from the site. This condition does not apply to fenced sites.
- Routine road surface maintenance activities on existing access and/or patrol roads shall be conducted during the inactive season of the desert tortoise, unless accompanied by an authorized biologist.

Class II: Minor Surface Disturbance and Class III: Major Surface Disturbance

- Mitigation measures described previously under Construction Mitigation Measures, in addition to the measures below, would be implemented.
- For Class III maintenance activities: The width of the disturbance area for any pipeline excavation project or construction of any above-ground facility shall be determined prior to the onset of ground-disturbing activities. The work area shall be flagged or marked for pre-maintenance surveys by an authorized biologist.
- If activities may extend outside of the initial construction ROW, BLM must be contacted, and additional consultation may be required between the BLM and the USFWS.

Emergency Repairs

- For emergency situations involving a pipeline leak or spill or any other immediate safety hazard, the local BLM and USFWS offices shall be notified within 48 hours. As a part of this emergency response, the BLM and USFWS may require specific measures to protect desert tortoises. During cleanup and repair, the agencies may also require measures to reclaim and or mitigate for damaged habitats.

- **APMM BIO-37: Delhi Sands Flower-loving Fly Mitigation**: Mitigation for impacts on Delhi sands flower-loving fly-occupied habitat would include purchase of credits at an existing mitigation bank or through implementation of an approved HCP. The applicant has completed a draft HCP for Delhi sands flower-loving fly, which was submitted on 12 December 2008 for agency review. At least two mitigation banks are currently known for Delhi sands flower-loving fly, the 7.5-acre Colton Transmission Facility Reserve and 150-acre Vulcan Materials, Inc., Colton Dunes Conservation Bank.
- **APMM BIO-38: Delhi Sands Flower-loving Fly Construction:** Construction and routine maintenance activities in Delhi sands flower-loving fly habitat shall occur outside of the occupied Delhi sands flower-loving fly flight period (July 1-September 20) to the greatest extent feasible. Until the sites are entirely cleared of vegetation and thus no longer considered to be suitable habitat for the Delhi sands flower-loving fly, the clearance of vegetation and/or any construction activities will take place outside the Delhi sands flower-loving fly flight season (July 1-September 20) to the greatest extent feasible. If onsite habitat areas have been rendered unsuitable for the Delhi sands

flower-loving fly (i.e., graded, cleared, paved, etc.), onsite operations may proceed at any time.

A Biological Monitor will be present during construction activities that require soil disturbance within potential Delhi sands flower-loving fly habitat to ensure construction personnel stay within the construction limits. This monitoring will prevent take of adult Delhi sands flower-loving fly during construction activities within the Delhi sands flower-loving fly flight season (July 1-September 20).

Topsoil (at least 6 inches) will be removed and segregated from other spoils prior to excavations or disturbance to areas supporting native vegetation. Topsoil will be stored and protected for use in site restoration upon completion of the Project.

- **APMM BIO-39: Delhi Sands Flower-loving Fly Restoration:** Upon completion of temporary disturbances in Delhi sands flower-loving fly habitat, the following site restoration and habitat enhancement activities will be conducted:
  - A Biological Monitor will supervise restoration personnel in the field or utilize personnel familiar with the restrictions on surface disturbance and with the habitat requirements of the Delhi sands flower-loving fly.
  - Weeding will be done by hand pulling
  - Replanting will not involve digging or soil modification other than minimal raking of seeds into the soil.
  - No use of fertilizers, herbicides, or insecticides of any kind will be used during restoration efforts or during operation and maintenance.
  - Restoration and revegetation activities will be conducted outside the Delhi sands flower-loving fly flight period (July 1 - September 20) to the greatest extent feasible.
  - Vehicles associated with restoration and revegetation activities will be confined to existing roads or previously disturbed areas.
- **APMM BIO-40: San Bernardino Kangaroo Rat:** Mitigation measures would focus on exclusionary and minimization measures subject to agency approval. Construction and maintenance areas within San Bernardino kangaroo rat habitat would be returned to grade as soon as practicable and left to restore by natural alluvial processes. Specific measures would include:
  - Pipeline construction within suitable San Bernardino kangaroo rat habitat (approximately MP 8 to 20.5) would occur outside the primary active San Bernardino kangaroo rat season (approximately February 15 through October 1).
  - Pre-construction trapping surveys for San Bernardino kangaroo rat in the vicinity of suitable San Bernardino kangaroo rat habitat or DCH within the construction area shall be conducted the year prior to construction. These surveys, conducted using the USFWS protocol and performed by an approved biologist permitted by the USFWS would identify the extent of occupied San Bernardino kangaroo rat habitat.
  - During construction within suitable San Bernardino kangaroo rat habitat, “drift fences” (e.g., silt fence, or similar material) would be installed around stockpiles and other areas with the potential to attract or entrap San Bernardino kangaroo

rat within 300-500 feet of occupied habitat or DCH (depending on topography). The fence would be in place far enough ahead of the construction to effectively exclude kangaroo rats by trapping from the work space for a period of 24 hours prior to construction. Kangaroo rats trapped within construction workspaces and inside the fencing would be relocated outside of the active construction area and released in Riversidean alluvial sage scrub by a biologist permitted by the USFWS to handle San Bernardino kangaroo rat. Fencing will be removed following regrading and restoration of the construction footprint.

  - Construction personnel and equipment shall be prohibited from driving off the construction ROW except on existing roads and from entering areas marked as "environmentally sensitive areas."
  - A qualified Biological Monitor will be present when construction occurs within, and/or 300-500 feet from occupied San Bernardino kangaroo rat habitat. The Biological Monitor will check the trench and around equipment each morning for any trapped animals.
  - Escape ramps would be provided within the open trench if left unattended overnight.
  - Directional lighting would be used when nighttime construction is within the vicinity of suitable/occupied San Bernardino kangaroo rat habitat or DCH. The type of directional lighting, including any associated apparatuses, and location for its use would be decided and undertaken with input from a qualified biologist.

- **APMM- BIO-41: Los Angeles Pocket Mouse**: Construction and maintenance areas within LAPM habitat would be returned to grade as soon as practicable and left to restore by the natural alluvial processes indicative of the species' habitat. Specific measures are similar to those proposed for San Bernardino kangaroo rat in the BA and would include:
  - A "drift fence" (*e.g.*, silt fence, or similar material) would be installed wherever construction is taking place within 300-500 feet of occupied Los Angeles pocket mouse habitat or designated critical habitat (depending on topography). The fence would be in place far enough ahead of the construction to effectively exclude Los Angeles pocket mouse by trapping from the work space for a period of 24 hours prior to construction. The fence may be removed progressively behind equipment as the construction footprint is re-graded; Los Angeles pocket mouse trapped on the inside of the enclosure would be relocated outside of the active construction area and released in Riversidean alluvial sage scrub by a biologist permitted by CDFG to handle Los Angeles pocket mouse.
  - During construction, temporary access roads would be constructed and maintained to specified standards as shown on the engineering drawings/construction plans. Construction personnel and equipment would be prohibited from driving off these roads and entering areas marked as "environmentally sensitive areas."
  - Directional lighting would be used when nighttime construction is within the vicinity of suitable/occupied Los Angeles pocket mouse habitat or designated critical habitat. The type of directional lighting, including any associated apparatuses, and location for its use would be decided and undertaken with input from a qualified biologist.

- **APMM-BIO-42: Horizontal Directional Drilling BMPs.** The following measures are provided in the preliminary draft Horizontal Directional Drill Contingency Plan and are provided here as proposed measures to minimize impacts on Speckled Dace and Arroyo Toad from HDD construction techniques and frac-outs.

  Lost circulation often precedes a frac-out. Lost circulation refers to the loss of drilling fluid into soil or rock through open fissures, coarse gravel, and jointed or fractured formations. The following measures will be implemented to minimize impacts associated with HDD activities and to reduce the risk of frac-out or lost circulation.

  - **Clearly mark work areas.** The drilling entry and exit areas will be clearly marked and access and egress will be clearly marked. At work areas adjacent to flowing streams, silt fencing will be installed to minimize the likelihood of drilling materials entering the waterway.
  - **Maintain adequate cover.** Frac-outs are most likely to occur at the entrance and exit points where the drilling equipment is at the shallowest depths—generally within a linear area of approximately 30 feet at either end of the HDD segment. The likelihood of a frac-out decreases as the depth of the pipe increases. Frac-out potential is greatly reduced by providing adequate depth of cover and by selecting an experienced and knowledgeable contractor.
  - **Maintain proper drilling pressure.** During the drilling process, the pressure in the borehole must be maintained within industry standard safety limits. A pressure gauge will be located at the mud pump to measure mud pressures within the drilling stem. Fluid pressures in the borehole will be controlled by minimizing viscosity of the drilling fluid to the level required to satisfy hole cleaning and stabilization requirements.
  - **Drilling techniques.** The following drilling techniques will be implemented as appropriate to prevent lost circulation or frac-out:
    - Drilling speed will be controlled to ensure correct positioning.
    - When changing the speed of the drilling operation, the flow rate of the drilling mud will be adjusted to prevent excessive pressure in the borehole.
    - The hole will be sized frequently to ensure an adequate and clear annulus. Sizing is a procedure in which the drill bit is slowly moved forward and backward to find potential fracture locations.
    - Controlling “plunger effects” caused by rapid penetration or spoil buildup on drill bits or pipe.
  - **Limit nighttime drilling:**

    Under normal circumstances, HDD operations will be conducted in daytime hours. Nighttime drilling will only be conducted as necessary to maintain the integrity of the borehole or prevent the drill string from getting stuck. In the event that nighttime drilling is required, appropriate lighting will be added to the work area, and non-toxic fluorescent dye will be added to the drilling mud to allow easier identification of frac-outs.

- **Monitoring**
  Assign a qualified Biological Monitor to watch for frac-outs during the HHD operations in proximity to known or suspected populations of species of concern.

Impacts on terrestrial wildlife species and their habitat would be reduced during construction activities and operation and maintenance through the implementation of the Applicant's proposed minimization measures noted above, as well as the additional Mitigation Measures listed below:

- **MM BIO-05: WEAP.** This WEAP shall be administered prior to setting foot on the right-of-way or any other project area, by a qualified biologist, Biological Monitor, or approved environmental trainer. Training shall primarily be administered in a location off of the ROW; however, Biological Monitors may provide in-field training in situations where this is necessary. A detailed log of all personnel having received WEAP training shall be maintained. This amends the Applicant's proposed minimization measure APMM BIO-14.
- **MM BIO-06: Biological Monitors.** The Applicant shall provide adequate Biological Monitors in all areas of the Proposed Project with the potential for special-status wildlife species presence. In active desert tortoise habitat, each crew shall have at least one dedicated Biological Monitor present. In areas with no desert tortoise habitat, fewer "roving" Biological Monitors may be adequate to monitor interactions with special-status species. At a minimum, all Biological Monitors working in desert tortoise habitat shall receive approval from the USFWS to monitor in desert tortoise habitat. A number of these Biological Monitors must be approved by the USFWS and the California Department of Fish and Game and the Nevada Department of Conservation and Natural Resources to be desert tortoise "handlers", for instances in which desert tortoises need to be moved from work areas or access roads, or if desert tortoises need to be translocated to new burrows. This amends the Applicant's proposed minimization measure APMM BIO-11.
- **MM BIO-07: Biological monitors and clearing of sites accessed by heavy equipment.** BLM Biological Monitors shall provide clearance when heavy equipment is driven or tracked to new areas of the Proposed Project or areas that have not been actively in construction. Clearing is achieved by driving ahead of (escorting) the equipment and surveying for desert tortoises that could be crushed. If a desert tortoise is found in a travel lane, travel shall be halted until the tortoise has either moved off of the road on its own, or if after 15 minutes, an approved desert tortoise biologist has moved it from the road.
- **MM BIO-08: Equipment and desert tortoises.** Whenever a vehicle or construction equipment is parked longer than 10 minutes within desert tortoise habitat, whether the engine is engaged or not, the ground around and underneath the vehicle shall be inspected for desert tortoises prior to moving the vehicle. If a desert tortoise is observed, an authorized biologist shall be contacted. If the tortoise does not move on its own within 15 minutes, the tortoise shall be removed and relocated by the authorized biologist prior to vehicle movement. This agency MM amends the Applicant's proposed minimization measures proposed in the Biological Assessment (URS Corporation 2010b).
- **MM BIO-09: Water pooling.** Water shall not be allowed to pool on the ROW, access roads, or any other area of the Proposed Project where the potential for desert tortoise presence exists. In particular, water storage tanks shall be monitored for leaks, and dust control trucks shall be monitored for pooling water.

- **MM BIO-10: Trash abatement.** The Applicant shall include in the trash abatement program a provision to require trash containers or bags be in or affixed to all Project vehicles. All trash, including food scraps and cigarette butts, shall be placed immediately into a raven-proof container on the ROW for weekly removal or be placed in a crew vehicle trash container that shall removed daily. Trash shall not be discarded onto the ROW or into the trench. This amends the Applicant's proposed minimization measure APMM BIO-17.
- **MM BIO-11: Delhi sands flower-loving fly construction timing**. If construction impacts are proposed between July 1 and September 20, then construction cannot proceed without written approval from BLM (for BLM public lands only) and USFWS. This amends the Applicant's proposed minimization measure APMM BIO-38.
- **MM BIO-12: Delhi sands flower-loving fly construction access**. All access to the to the three new power poles associate with the Colton Terminal will be limited to an approved road and that no ground disturbance other than for safe access and stringing activities would occur within Delhi sands flower-loving fly habitat. This amends the Applicant's proposed minimization measure APMM BIO-38.
- **MM BIO-13: Directional lighting for San Bernardino kangaroo rat**. Any use of directional lighting for nighttime construction within 1,000 feet of suitable/occupied San Bernardino kangaroo rat habitat or DCH would require BLM or USFS approval. This amends the Applicant's proposed minimization measure APMM BIO-40.
- **MM BIO-14: Directional lighting for Los Angeles pocket mouse.** Any use of directional lighting for nighttime construction within 1,000 feet of suitable/occupied Los Angeles pocket mouse habitat would require BLM or USFS approval. This amends the Applicant's proposed minimization measure APMM BIO-41.
- **MM BIO-15: Construction Area and Trench Management.** Temporary exclusion fencing in habitats occupied by specific species for which the exclusionary fencing is desired (i.e. desert tortoise, arroyo toad, San Bernardino kangaroo rat, Los Angeles pocket mouse and Mojave ground squirrel) shall enclose the entire project area, not just the pipeline trench. To avoid impacts to wildlife during the timeframe between initial site disturbance and site restoration, the Applicant shall perform the following:
    - Manage stormwater runoff and erosion in accordance with their Stormwater Pollution Prevention Plan.
    - Keep access gates closed during non-work hours;
    - Have all trenches inspected by a BLM Resource Advisor for trapped wildlife prior to backfilling; and
    - Manage construction to minimize the duration that trenches are left open.

This amends the Applicant's proposed minimization measure APMM BIO-16.

- **MM BIO-16: Movement of Wildlife.** Any movement of wildlife identified in advance of construction would be limited to that necessary to move the individual out of harm's way. The movement would be conducted only by the Biological Monitor, in accordance with procedures defined in the Biological Opinion. This amends the Applicant's proposed minimization measure APMM BIO-20.
- **MM BIO-17: Pre-Construction Surveys for Arroyo Toad.** A qualified biologist will conduct pre-construction surveys for the arroyo toad within arroyo toad habitat prior to

ground disturbance or vehicle movement in that area. Surveys will be conducted in accordance with procedures defined in the Biological Opinion.

- **MM BIO-18: Collapsing of Tortoise Burrows.** The reference to collapsing or blocking unoccupied tortoise burrows in APMM BIO-24 is hereby deleted. All burrows within the construction zone would be collapsed as necessary to allow for construction. However, no burrows outside of the construction zone would be collapsed unless necessary to remove a tortoise from harm's way.
- **MM BIO-19: Habitat Acquisition for Desert Tortoise.** To compensate for DETO habitat affected during construction, these effects would be offset through either an acceptable land acquisition or an assessed financial contribution, based on the final construction footprint. Mitigation for temporary impacts on DETO habitat would occur through an acreage-based mitigation formula as required by the various planning areas and jurisdictions within which the Project exists, including the West Mojave Planning Area, the Northeast Mojave Planning Area, and CDFG. The formula includes both payment of credits into a conservation fund, and land purchase. For federal lands in the West Mojave Plan area, payment would be made to a fund ($774/acre [adjusted annually]; 5:1 in DWMAs and 1:1 in non-DWMA); on private lands, CDFG will require land purchase. Within Nevada, a fee of $550/acre would be applied for impacts on private lands, and a fee of $774/acre would be applied for impacts on Federal lands. Additionally, a per acre surcharge will be applied to DETO habitat mitigation on Federal lands, and endowment/enhancement fees will be applied to non-Federal lands. The amount of mitigation required is subject to final design and concurrence with the agencies.

Even with implementation of the Applicant's proposed minimization measures and agency-required mitigation measures, residual impacts to wildlife would occur. Although the measures would be implemented to reduce the area of impact and avoid specific resources, habitat will still be impacted, and individuals may be injured or killed by construction activities.

Impact BIO-5: Impact to bird species. *Construction and operation activities would result in adverse impacts to bird species protected by the MBTA, the Bald and Golden Eagle Protection Act, Special Status species, and those protected by other federal, state, and local regulations due to habitat loss and disturbance from increased human activity in the area.*

While nearly all of the birds potentially present in the Proposed Project area are protected under the MBTA, the Bald and Golden Eagle Protection act, or agency-specific raptor avoidance guidelines, a number of bird species also have some level of state or federal special-status. Under NEPA, construction of the Proposed Project could impact protected bird species. Impacts could result from activities that would cause nest abandonment or destruction of chicks or eggs in active nests, or activities that would reduce potential forage and nesting habitat. For most species, the impacts would be confined to Proposed Project area and areas immediately adjacent to the Proposed Project. For other species such as raptors, project-related impacts could extend up to one mile beyond project boundaries, depending on the nature of the site (e.g., urban or rural) and topography.

If clear and grading cannot be conducted outside of breeding season for birds protected by the MBTA, then the use of preconstruction nest surveys and establishment of buffer zones around identified active nests within which no construction activity or traffic would occur would reduce the potential for impacts to active bird nests. These measures would reduce the potential for the direct loss of an active bird nest, and the potential for nest abandonment resulting from an increase in noise and visual disturbance within the construction footprint. There is still the potential for adverse impacts resulting from noise and visual disturbance caused by construction and project-related traffic, including construction at work sites and traffic along project access roads, and could cause nest abandonment or habitat avoidance by birds nesting 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 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 the project. Because these impacts could occur at isolated nest sites along the Proposed Project corridor, and because the project area is relatively small compared with the amount of similar habitat in the region, impacts on nesting birds would be localized.

Disturbances associated with the operation and maintenance of the project could cause impacts similar to those caused by construction of the project, 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.

Under NEPA, the potential for these impacts on nesting birds after the construction phase of the project is small. In general, due to the lower levels of disturbance associated with operation and maintenance activities, post-construction adverse impacts on nesting birds would be short term and localized. Due to the lower levels of disturbance associated with operations and maintenance activities, any adverse impacts on avian species would be expected to be minor, short term, and localized.

There were 32 species of birds identified that have additional level of state or federal protection or special status beyond protection under the MBTA. To assess the potential impacts to these protected bird species, the bird species were grouped into two groups; riparian bird species and non-riparian bird species.

Riparian Special-Status Bird Species

The following 14 riparian bird species were either observed in the Proposed Project area, determined to have a high potential of occurrence, or were identified by the agencies as species that need to be addressed; bald eagle, common yellowthroat, Cooper's hawk, least Bell's vireo, least bittern, Nuttall's woodpecker, southwestern willow flycatcher, summer tanager, warbling vireo, western yellow-billed cuckoo, Wilson's warbler, yellow-breasted chat, and yellow warbler. In addition, there were 16 additional USFS watch list, BLM Sensitive, and Region 5 sensitive avian species identified as occurring or having potential to occur with the Proposed Project area: merlin, western screech owl, purple martin, Wilson's snipe, turkey vulture, northern harrier, sharp-shinned hawk, ferruginous hawk, northern pygmy owl, northern saw-whet owl (highly unlikely), Lewis' woodpecker, California horned lark, American dipper, MacGillivray's warbler, and phainopepla (BLM Nevada).

Potential impacts to these species include all of the impacts listed above for all protected bird species. The following is a more detailed assessment of those protected riparian species for which there is a species-specific Applicant-proposed minimization measure or mitigation measure required to reduce the intensity of the impacts resulting from construction and operation and maintenance.

Least Bell's Vireo
Two least Bell's vireo nesting territories were observed approximately 300 ft from the proposed centerline just south of MP 54 at the Mojave River crossing. Additional USFS modeled habitat occurs in the vicinity of MP 16 through 22.5 within the Cajon Pass and historic nesting has occurred in the project area on FS lands. Although the results of the 2008 field surveys did not identify the presence of any nesting least Bell's vireos within the Cajon Pass area, there is the potential that least Bell's vireo could be nesting within the suitable habitat along this portion of the Proposed Project. Historic CNDDB and USFWS records of least Bell's vireo occur near MPs 21 and 23, respectively. A transient least Bell's vireo was observed on April 23, 2008 near MP 10.7.

Impacts to suitable least Bell's vireo habitat would occur during the HDD operations at the Mojave River near MP 54. The HDD operations at this area would result in the clearing and grading of the vegetation for the establishment of required temporary workspaces for HDD operations. At MP 54, an approximately 25-ft wide swath of riparian habitat would be cleared across the Mojave River in preparation for the HDD operation. At MP 54, the creation of the HDD workspaces would result in a loss of approximately 0.4 acres of least Bell's vireo habitat at the Mojave River, including 0.1 acres of southern willow scrub, 0.1 acres of riparian forest, and 0.2 acres of riparian woodland.

Noise related impacts are possible where suitable LBVI habitat exists within 500 ft of Project components in Cajon Pass and at the Mojave River. Potential LBVI habitat also exists within 550 ft of the existing 8- and 14-inch lines within the Swarthout Canyon and Lone Pine Canyon areas. Although Proposed Project construction would not affect the Swarthout Canyon and Lone Pine Canyon areas, maintenance activities on the existing pipelines could potentially have impacts in those areas.

The impacts to suitable least Bell's vireo habitat could be either short-term or long-term depending on the effectiveness of revegetation efforts to re-establish preconstruction conditions.

The least Bell's vireo would be susceptible to similar impacts resulting from construction and operation and maintenance activities as described for protected bird species. However, if construction and maintenance activities are conducted outside of the breeding season for the least Bell's vireo, then the Proposed Project would lessen the potential for impact the species. Avoidance of construction during the breeding season of least Bell's vireo would reduce the potential for impacts resulting from clearing and grading, noise disturbance, and increase human activity due to construction activities or operation and maintenance.

To further reduce the potential impacts to least Bell's vireo to less than significant, the mitigation measures listed following discussion of all special status bird species would need to be implemented.

Southwestern Willow Flycatcher
There were no southwestern willow flycatchers observed during the 2008 field surveys, however suitable habitat does occur within the Proposed Project area along Cajon Wash (near MP 23) and at the Mojave River crossing (MP 54). USFS modeled habitat for southwestern willow flycatcher occurs near MP 14 through 29 (USFS 2001). Also, presence of suitable habitat has been identified within Lone Pine Canyon, along the existing Calnev pipelines, based on reviews of desktop information. Due to the presence of suitable habitat and known occupancy, there is the potential for this species to occur within the Proposed Project area; therefore construction

and maintenance activities could result in impacts to the southwestern willow flycatcher and/or southwestern willow flycatcher habitat.

Impacts to suitable southwestern willow flycatcher habitat would occur during the HDD operations near MP 24.5 and 25.5 in Cajon Pass and at Mojave River near MP 54. The HDD operations at these areas along the Proposed Project would result in the clearing and grading of the vegetation for the establishment of required temporary workspaces for HDD operations. Near MP 24.5 and 25.5, the creation of HDD workspaces would result in loss of approximately 3.5 acres of riparian scrub habitat. At MP 54, the creation of the HDD workspaces would result in a loss of approximately 0.4 acres of southwestern willow flycatcher habitat at the Mojave River, including 0.1 acres of southern willow scrub, 0.1 acres of riparian forest, and 0.2 acres of riparian woodland.

Noise related impacts are possible where suitable habitat exists within 500 ft of of the existing 8- and 14-inch lines within the Swarthout Canyon and Lone Pine Canyon areas. Although Proposed Project construction would not affect the Swarthout Canyon and Lone Pine Canyon areas, maintenance activities on the existing pipelines could potentially have impacts in those areas.

The impacts to suitable southwestern willow flycatcher habitat would be short-term or long-term depending on the effectiveness to revegetate the ROW to match the habitat characteristics preferred by the southwestern willow flycatcher; however, these impacts would be mitigated through onsite habitat restoration as presented in the Habitat Restoration Plan for the Calnev Expansion Project.

To further reduce the potential impacts to southwestern willow to less than significant, the mitigation measures listed following discussion of all special status bird species would need to be implemented.

Song Sparrow

Management Objectives

The song sparrow was selected as a MIS for riparian areas because its abundance is expected to be responsive to management actions and to indicate trends in the status of the riparian biological community, particularly birds. The desired condition for song sparrows is that wildlife habitat conditions sustain healthy populations of native and desired non-native fish and game species. And, that wildlife habitat functions are maintained or improved, including primary feeding areas, winter ranges, breeding areas, birthing areas, rearing areas, migration corridors, and landscape linkages (USFS 2005).

The desired condition is that flow regimes in streams that provide habitat for Threatened, Endangered, Proposed, Candidate, and/or Sensitive aquatic and riparian-dependent species are sufficient to allow the species to persist and complete all phases of their life cycles. The desired condition for riparian condition is that watercourses are functioning properly and support healthy populations of native and desired non-native riparian-dependent species. The objectives for song sparrow are that there are stable or increasing populations and healthy riparian habitat. Trends in abundance and/or habitat conditions are to be used as measurements for evaluation. The monitoring method is to be riparian bird counts and/or habitat conditions (USFS 2005).

Population Trends

Song sparrow abundance is positively correlated with the abundance of riparian herbaceous vegetation and negatively correlated with the use of riparian under-stories for grazing and recreation (Ballard and Geupel 1998). This species was well-represented in riparian bird count surveys on the four southern Forests from 1988 to 1996. Negative trends were determined for the song sparrow during this monitoring (USFS 2005).

Proposed Project Impacts

Several song sparrows were observed throughout the riparian habitat associated with Cajon Wash during the URS surveys. Based on the presence of song sparrows in this area, the Proposed Project has the potential to have an adverse impact to individuals and habitat for this species. Potential impacts to the song sparrow would include destruction of 7.6 acres of riparian habitat during construction activities, and temporary displacement of individuals during construction and maintenance activities due to vehicle strikes and noise.

Western Yellow-Billed Cuckoo

No western yellow-billed cuckoos were observed during the 2008 surveys, although suitable habitat exists at the Mojave River survey location near MP 54. Contiguous riparian habitat following the course of the Mojave River extends well beyond the Proposed Project area, with a large patch in the Proposed Project vicinity extending beyond 670 acres. Within the Proposed Project area, the habitat is relatively constrained, with a minimum width of 450 ft, and maximum width of approximately 1,500 ft. Due to the presence of suitable habitat and historic occurrence of the species along the Mojave River, there is the potential that this species may now occur within the Proposed Project area, therefore construction activities could result in impacts to the western yellow-billed cuckoo.

Impacts to suitable western yellow-billed cuckoo habitat would occur during the HDD operations near MP 54. At MP 54, the creation of the HDD workspaces would resulting a loss of approximately 0.4 acres of western yellow-billed cuckoo habitat at the Mojave River, including 0.1 acres of southern willow scrub, 0.1 acres of riparian forest, and 0.2 acres of riparian woodland. The impacts to suitable western yellow-billed cuckoo habitat would be long-term as tree growth to re-vegetate the ROW would take decades to match the habitat characteristics preferred by the western yellow-billed cuckoo.

If construction activities are not conducted outside of the breeding season for the yellow-billed cuckoo and species is determined to be present within the Proposed Project area, then southwestern willow flycatcher would be susceptible to similar impacts as described for protected bird species and the following impacts. Noise related impacts are possible to western yellow-billed cuckoo occupying suitable habitat that is directly adjacent to the Proposed Project near MP 54. Should western yellow-billed cuckoo be present at these locations, they could be negatively affected by noise related to the operation of heavy equipment during maintenance activities that require ground disturbance. However, these impacts would be minor and short-term in nature given the existing noise levels in the area and because the maintenance action would be temporary in nature.

To further reduce the potential impacts to western yellow-billed cuckoo to less than significant, the mitigation measures listed following discussion of all special status bird species would need to be implemented.

Non-Riparian Bird Species

Eighteen species of non-riparian bird species were either observed in the Proposed Project area, determined to have a high potential of occurrence, or were identified by the agencies as species that need to be addressed; band-tailed pigeon, Bendire's thrasher, burrowing owl, calliope hummingbird, coastal California gnatcatcher, common nighthawk, golden eagle, Lawrence's goldfinch, Le Conte's thrasher, loggerhead shrike, long-eared owl, mountain quail, oak titmouse, prairie falcon, song sparrow, Swainson's hawk, Swainson's thrush, and tree swallow. In addition, there was one USFS Region 5 sensitive avian species, the San Diego cactus wren, identified as occurring or having potential to occur with the Proposed Project area. Mexican whippoorwill and American peregrine falcon.

Potential impacts to these species include all of the impacts listed above for all protected bird species. The following is a more detailed assessment of those protected non-riparian species for which there is a species-specific Applicant-proposed minimization measure or mitigation measure required to reduce the intensity of the impacts resulting from construction and operation and maintenance.

Burrowing Owl

No burrowing owls were observed during the focused surveys, but suitable burrowing owl habitat is present along portions of the Proposed Project. During the focused surveys, 11 potential, inactive burrowing owl burrows were observed. No suitable habitat was identified on USFS lands. Two burrowing owls were observed outside of the focused surveys; one owl at MP 79.5 and one owl near the Colton Terminal.

Construction of the Proposed Project could cause adverse impacts on western burrowing owls and burrowing owl habitat. Impacts on this species would result from nest abandonment or direct loss of adults and/or chicks, or hatching failure of eggs in active nests, or because the project otherwise led to lowered reproductive success. The preconstruction survey for burrowing owls and the proposed relocation and monitoring of active burrows would reduce the potential for these impacts. Project construction and traffic may cause abandonment of nearby active nests due to the noise and visual disturbances, which, could result in mortality of chicks or hatching failure of eggs if not mitigated. Construction-related disturbances could also cause habitat avoidance if owls avoided using suitable burrows for nesting or avoided high-quality foraging habitat. Impacts to burrowing due to construction would be localized, minor and short-term due to the temporary nature of disturbance to the vegetation.

Disturbances associated with operations and maintenance would have the potential to cause impacts similar to those caused by construction of the project, 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. As such, burrowing mammals would be likely to re-colonize the Proposed Project area, providing new burrows for potential owl nests. Burrowing owls that move onto the Proposed Project area 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 and the mobility of the species. Nearby active nests could be abandoned due to the noise and visual disturbances associated with operations and maintenance crews. In general, due to the lower levels of disturbance associated with operations and maintenance activities, any impacts on burrowing owls would be short term, localized, and minor.

In order to reduce impacts on burrowing owls and active owl burrows to less than significant, the mitigation measures listed following discussion of all special status bird species would need to be implemented.

Coastal California Gnatcatcher

The coastal California gnatcatcher was not observed during protocol-level surveys in 2008; however there is the potential for impacts to this species because suitable habitat exists within the Proposed Project area. Suitable habitat for this species exists at the southern end of the alignment (about MP 10.5 to 24), and historical locations are known near MP 14 (CDFG 2008a). Construction and maintenance activities would result in a temporary disturbance. The majority of construction activities would occur within existing developed areas (e.g., Institution Road, Cajon Boulevard), or disturbed areas (e.g., dirt roads south of Institution Road) resulting in little impact to suitable coastal California gnatcatcher habitat. Assuming a 100 ft ROW is required, pipeline construction may result in the loss of 31.9 acres of suitable CAGN habitat. However, this is a "worst case" estimate, and this habitat is currently unoccupied by CAGN. The impacts to suitable coastal California gnatcatcher habitat would be short-term or long-term depending on the effectiveness of revegetation efforts to reestablish preconstruction conditions.

In California, a substantial adverse effect, either directly or through habitat modifications, on any species identified as a legally protected, candidate, sensitive, or special status species in local or regional plans, policies, or regulations, by the CDFG or USFWS is a significant impact under CEQA. In compliance with CEQA, impacts to special status plants would be reduced to less than significant levels by adopting the Applicant's proposed minimization measures and mitigation measures. To minimize impacts on all bird species, the following minimization measures would be implemented:

- **APMM BIO-44: Bird breeding season.** In compliance with the MBTA, vegetation within a disturbance area that may support active nests should be removed during the non-nesting season (approximately September-March). If this is not possible, a pre-construction nest survey must be conducted by a qualified biologist to determine the presence of any active nests. If an active nest is identified within the Proposed Project area it must be immediately protected until the young have fledged from the nest or the nest becomes inactive. Work can commence in adjacent areas, but an appropriate "no-occupancy" buffer zone must be established to protect the nest and its inhabitants until fledging. The size of the buffer zone is species and habitat dependent, and should be determined in coordination with the local USFWS field office. Minimum buffer zones are typically 50 ft and they may be larger for listed species or raptors. The size of the buffer zone for occupied Cooper's hawk nest sites is 500 feet from construction activities during the periods of April 15-August 31. Sound barriers may be erected in coordination with biological monitoring if necessary.
- **APMM BIO-45: Gnatcatcher habitat.** The Applicant shall avoid construction in coastal California gnatcatcher habitat during the coastal California gnatcatcher breeding season (February 15 through August 31), to avoid take of active nests. If construction will occur during coastal California gnatcatcher, a qualified biologist shall survey the area within 500 ft of construction to identify active nests. If active nests are found within the ROW, construction activities shall not occur within 100 ft of an active nest, or a sound barrier would be erected in conjunction with biological monitoring to avoid take. Restoration of occupied CAGN habitat impacted by the Project would be required.

- **APMM BIO-46: Least Bell's vireo habitat and nests.** Proposed pipeline construction and maintenance actions within or adjacent to least Bell's vireo habitat would avoid the breeding season for this species (approximately April-September 15) to the extent practicable. If any construction or maintenance occurs during the breeding season, a qualified biologist shall survey the area and identify nest locations prior to the construction or maintenance action. Construction or non-emergency maintenance activities would be delayed to the extent practicable if active least Bell's vireo nests are found within the construction area until these nests become inactive. Additionally, construction or maintenance activities would not occur within 200 ft of an active nest, unless a sound barrier is erected. Each of these measures would be conducted in coordination with biological monitoring, and the Biological Monitor would have the authority to stop construction activities if the Biological Monitor observed least Bell's vireo behavior that indicates distress because of construction noise/activity. Temporary impacts on breeding habitat would be mitigated through onsite habitat restoration as presented in the Habitat Restoration Plan.
- **APMM BIO-47: Lighting of bird habitat.** Lighting used at night for construction shall be shielded away from areas of high bird diversity and special-status riparian bird habitat, such as that found at Cajon Pass and the Mojave River.
- **APMM BIO-48: Flycatcher habitat and nests.** Proposed pipeline construction and maintenance actions within or adjacent to potential southwestern willow flycatcher habitat would avoid the breeding season for this species (approximately May 1st – August 31). If construction or maintenance activities occur during the breeding season, a qualified biologist shall survey the area and identify nest locations prior to construction. Construction or non-emergency maintenance activities would be delayed to the extent practicable if active southwestern willow flycatcher nests are found within the construction area until the nests become inactive. Additionally, construction or maintenance activities shall not occur within 500 ft of an active nest, unless a sound barrier is erected. Each of these measures would be conducted in coordination with biological monitoring, and the Biological Monitor would have the authority to stop construction or maintenance activities if the Biological Monitor observes SWFL behavior that indicates distress because of construction noise/activity. Temporary impacts on suitable habitat along Cajon Wash would be mitigated through on site habitat restoration.
- **APMM BIO-49: Burrowing owl surveys, relocation, and monitoring.** A pre-construction survey for burrowing owls shall be completed prior to the start of initial ground-disturbance activities (September 1 – January 31). If a burrowing owl is observed on the Proposed Project area during the preconstruction surveys, the following BMP measures to minimize impacts on BUOW shall be followed prior to ground disturbing activities:
    - If burrowing owls are present and relocation is deemed necessary, passively relocate any owls if the active burrow is located within proposed ground disturbing activities. Provide man-made owl burrows along the Proposed Project alignment near the BUOW territory or consult with the agencies to determine the amount of compensatory mitigation that would be provided.
    - Any active owl burrow within 100 feet of ground disturbing activities shall be monitored by a qualified biologist at weekly intervals.

Impacts on protected bird species and environmentally sensitive areas would be reduced during construction activities through the use of many of the Applicant's proposed minimization measures noted above, as well as three additional Mitigation Measures below:

- **MM BIO-20: Raptor nest surveys.** The Applicant shall perform raptor nest surveys up to an agency-approved distance from the right-of-way edge, access roads, and all other Proposed Project features. All active, inactive, and potential raptor nests shall be recorded, including nests that may be common raven nests. The actual width to be surveyed shall be based on agency (USFWS, BLM, NDOW, CDFG) requirements, but should be wide enough to encompass potential avoidance buffers that may be implemented during construction.
- **MM BIO-21: Raptor nests in buffer area.** If active raptor nests (including burrowing owls) are found outside Proposed Project area, but within prescribed avoidance buffers, particularly those that may be outside of line-of-site, the Applicant may request to continue construction in conjunction with a nest monitoring program. This entails having a qualified biologist monitor the nest during construction in order to determine if the raptor was exhibiting signs of disturbance that could lead to nest failure or decreased fecundity. Any sign of such disturbance would be cause to cease construction activities within the "no-occupation" buffer. The Applicant shall have the monitoring program approved by all jurisdictional agencies, likely on a case-by-case basis, before it is implemented.
- **MM BIO-22: Burrowing owl surveys.** The Applicant shall perform surveys by authorized protocol for burrowing owls on all portions of the Proposed Project where construction activities may occur, including the ROW, access roads, extra workspaces, staging areas, and pipe yards. Qualified surveyors shall use survey protocol approved by CDFG (California Burrowing Owl Consortium 1993), unless the jurisdictional agencies agree to the use of another protocol. Surveys will occur at the beginning of the breeding season and then in advance of construction work at a site.
- **MM-BIO-23: Vegetation Removal.** To mitigate construction impacts to MBTA species, the Applicant would perform vegetation removal prior to MBTA nesting season, implement seasonal buffers, and adhere to timing restrictions. Timing restrictions and buffers would be cooperatively determined by the agency (USFWS, BLM, NDOW, and CDFG). For areas where vegetation removal is not conducted prior to construction activities, nesting bird surveys would be conducted and buffers would be established to protect active nests from construction disturbance. A biological monitor would be responsible for establishing and enforcing the buffer restriction while the nest is active.
- **MM BIO-24: Least Bell's Vireo Habitat and Nests**: Proposed pipeline construction and maintenance actions within or adjacent to LBVI habitat would avoid the breeding season for this species (approximately April-August), to the extent practicable. If any construction or maintenance requiring ground disturbance occurs during the breeding season, a qualified biologist shall survey the area and identify nest locations prior to the construction or maintenance action. Construction or non-emergency maintenance activities would be delayed if active LBVI nests are found within the construction area until these nests become inactive. Additionally, construction or maintenance activities would not occur within 300 ft of an active nest, unless a sound barrier is erected. Each of these measures would be conducted in coordination with biological monitoring, and the Biological Monitor would have the authority to stop construction activities if the Biological Monitor observed LBVI behavior that indicates distress because of construction

noise/activity. Temporary impacts on breeding habitat would be mitigated through habitat restoration onsite. Habitat restoration for this Project is addressed in the Habitat Restoration Plan for the Calnev Expansion Project. This amends the Applicant's proposed minimization measure APMM BIO-46.

- **MM BIO-25: Southwestern Willow Flycatcher Habitat and Nests**: Proposed pipeline construction and maintenance actions within or adjacent to potential SWFL habitat would avoid the breeding season for this species (approximately April-August). If construction or maintenance activities occur during the breeding season, a qualified biologist shall survey the area and identify nest locations prior to construction. Construction or non-emergency maintenance activities would be delayed if active SWFL nests are found within the construction area until the nests become inactive. Additionally, construction or maintenance activities shall not occur within 300 ft of an active nest, unless a sound barrier is erected. Each of these measures would be conducted in coordination with biological monitoring, and the Biological Monitor would have the authority to stop construction or maintenance activities if the Biological Monitor observes SWFL behavior that indicates distress because of construction noise/activity. Temporary impacts on suitable habitat along Cajon Wash would be mitigated through habitat restoration onsite. This amends the Applicant's proposed minimization measure APMM BIO-48.
- **MM-BIO-26: Coastal California Gnatcatcher Habitat and Nests.** Construction and maintenance activities in CAGN habitat would be avoided during the CAGN breeding season (approximately February 15 through August 31), to avoid take of active nests. If construction will occur during the CAGN breeding season, a qualified biologist shall survey the area within 500 ft of construction to identify active nests. If active nests are found within the ROW, construction activities shall not occur within 300 ft of an active nest, or a sound barrier would be erected in conjunction with biological monitoring to avoid take. Activities shall not exceed 60 decibels within 300 ft of any occupied nest. This amends the Applicant's proposed minimization measure APMM BIO-45.

Even with implementation of the Applicant's proposed minimization measures and agency-required mitigation measures, residual impacts to birds would occur. Although the measures would be implemented to reduce the area of impact and avoid specific resources, habitat will still be impacted, and individuals may be injured or killed by construction activities.

Impact BIO-6: Introduction of invasive, non-native plants. *Construction and operation activities would result in short-term adverse impacts related to the introduction of noxious weeds during the Calnev Expansion Project construction period.*
Noxious weeds are species of non-native plants included on the weed lists of the California Department of Food and Agriculture (CDFA 2007), the California Invasive Plant Council, or those weeds of special concern identified by BLM.

Under NEPA, the Proposed Project would result in minor adverse, short-term impacts related to the introduction of invasive, non-native plants. Ground-disturbing activities during construction could introduce new noxious weeds to the Proposed Project area, and could further spread weeds already present in the project vicinity. The spread of invasive plants is a major threat to biological resources because non-native plants can displace native plants, increase the threat of wildfire, and supplant wildlife foods that are important to desert tortoise and other herbivorous species. Common species of concern in desert ecosystems include Sahara mustard, salt cedar, red brome, and other ubiquitous weeds; however, because of the widespread nature of these weeds, control is considered impracticable.

The proliferation of non-native annual grasses such as cheat grass, red brome, and Mediterranean grass has dramatically increased the fuel load and frequency of fire in many desert ecosystems (Lovich and Bainbridge 1999). Unlike other ecosystems in California, fire was not an important part of the Mojave Desert ecosystems and most perennials are poorly adapted to even low-intensity fires, and the animals that coevolved are not likely to respond favorably to fire either. The potential spread or proliferation of non-native annual grasses, combined with the proximity to ignition sources could potentially increase the risk of fire, and the effects to these poor-adapted desert communities would be harmful, particularly to cacti and most native shrubs species. Burned creosote and other native shrubs are typically replaced by short-lived perennials and non-native grasses (Brown and Minnich 1986).

To avoid and minimize the spread of existing weeds and the introduction of new ones, an active weed management strategy and control methods would be implemented. Non-native forms may be introduced or existing weeds spread due to construction, operation, and maintenance of the Proposed Project. Many invasive non-native species are adapted to and promoted by soil disturbance, and seeds are commonly transported on vehicles and by wind and water. Exotics can out-compete native species because of minimal water requirements, high germination potential and high seed production (Beatley 1966) and can become locally dominant, representing a serious threat to native desert ecosystems (Abella et al. 2008).

Maintenance activities would increase vehicular traffic and increase the potential for dispersal of noxious and invasive weeds.

Impact BIO-7: Impact to Federally protected wetlands. *Construction and operation activities could results in long-term adverse impacts to wetlands associated with portions of the pipeline ROW that cross the Mojave River at La Delta if wetland vegetation exists at the time of construction.*

The Proposed Project would result in adverse impacts to Federally-protected wetlands at an estimated 766 locations throughout the 234.4 mile length of the pipeline. The applicant has surveyed the length of wetlands to be traversed, and assumes that all wetlands are jurisdictional for purposes of Clean Water Act Section 404 permitting, and will require CDFG Section 1601 Streambed Alteration Agreements and mitigation. The total acreage of wetlands that would be disturbed during construction constitutes approximately 138.9 acres.

At the Mojave River crossing at La Delta (MP 54), the Proposed Project would traverse the Mojave River using an approximately 1,500-ft long HDD. In addition, during the construction period, an approximately 810-ft long access road would be temporarily installed over the river. Assuming that each of these project features would require a non-overlapping, 100-ft wide corridor, and that the width of the extent for potential wetland vegetation at this crossing is approximately 300 ft, the Proposed Project would affect less than 1.5 acres of potential wetland vegetation. If wetland areas are encountered at the Mojave River crossing at La Delta, then construction activities such as clearing/blading and grading associated with the HDD lay-down area could have long-term impacts to approximately 1.4 acres of wetland/riparian area. In general, preliminary reestablishment of wetland vegetation would be expected to take several years, while regrowth of scrub-shrub vegetation could take even longer. However, according to the USFWS National Wetlands Inventory, there are no classified wetlands present at this location and therefore, impacts to wetlands from the Proposed Project are unlikely.

At the Cajon Creek crossing near Wagon Train Road, the Proposed Project would require disturbance of 7.6 acres of wetlands that constitute breeding habitat for the arroyo toad.

Wetland vegetation in this area would be removed to install a trench for the pipeline, as well as to allow movement of construction vehciels within the 100-foot installation corridor. Following construction, additional disturbance of revegetated wetlands could occur during maintenance activities.

In California, should the Proposed Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means, that would constitute a significant impact under CEQA. However, because construction activities would result in adverse impacts to wetlands associated with HDD construction and the access road for heavy equipment at the Mojave River crossing at La Delta only if wetlands exist at the time of construction and even then, the potential area of impact is less than 1.5 acres, the effects of the Proposed Project would be less than significant.

Impact BIO-8: Impacts to wildlife linkages, corridors, wintering areas, and big game species ranges would be indirect, temporary, and minor. *Construction and operation activities would result in short-term, minor impacts to wildlife movement and sensitive habitat areas due to habitat loss and disturbance from increased human activity in the area.*

Under NEPA, construction and operations would temporarily disturb and displace big game and other wildlife from the Proposed Project. In general, construction and maintenance activities would also be temporary. Because the pipeline ROW parallels most of these linear features, wildlife movement is not anticipated to be further affected through the Cajon Wash area due to Proposed Project activities. Dirt access roads would be the only residual impact from Proposed Project activities. As required by Mitigation Measure REC-2, the applicant would construct barriers to ensure that these access roads are not accessible to OHV traffic. The Proposed Project would not result in permanent impacts on wildlife movement but would result in both short-term and long-term impacts to the vegetation, which could adversely impact wildlife movement. The proposed above-ground facilities would generally be constructed within existing developed areas, outside of known wildlife linkages, ranges, and corridors or would be quite small. Therefore, no significant impacts on wildlife movement are expected.

In California, should the Proposed Project interfere substantially with the movement of any native resident or migratory fish or wildlife species, interfere with established native resident or migratory wildlife corridors, or impede the use of native wildlife breeding/brooding sites, that would constitute a significant impact under CEQA. However, because construction and operation activities would result in only short-term, minor impacts to wildlife movement and sensitive habitat areas due to habitat loss and disturbance from increased human activity in the area, the impacts from the Proposed Project would be less than significant.

Impact BIO-9: Conflict with Policies, Ordinances, or Habitat Conservation Plans. *Impacts to existing regulations, ordinances, policies, or habitat conservation plans from construction and operation activities related to the Proposed Project would be negligible.*

Under NEPA, the Proposed Project would be constructed, operated, and maintained in accordance with all applicable policies, ordinances, and habitat conservation plans; therefore, no direct or indirect adverse impacts would be anticipated.

In California, should the Proposed Project interfere substantially with the movement of any native resident or migratory fish or wildlife species, interfere with established native resident or migratory wildlife corridors, or impede the use of native wildlife breeding/brooding sites, that would constitute a significant impact under CEQA. However, because construction and operation activities would result in only short-term, minor impacts to wildlife movement and sensitive habitat areas due to habitat loss and disturbance from increased human activity in the area, the impacts from the Proposed Project would be less than significant.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to biological resources associated with the seven route variations are described below:

Bloomington Alternative

The Bloomington Alternative route variation and the segment of the Proposed Project that it would replace it along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to biological resources. Both segments would impact suitable habitat for the San Bernardino kangaroo rat and Los Angeles pocket mouse; however, during surveys for these listed species in 2008, neither suitable habitat nor the species themselves were observed along the Bloomington Alternative route. Both the Proposed and Alternative route are located within USFS modeled suitable habitat for San Bernardino kangaroo rat (Figure 3.7-3). Neither segment is located in close proximity to delineated wetlands or waterbodies that could have aquatic receptors. Although impacts to biological resources could occur in this area, they would not be significant under CEQA, and there would no difference in impacts between the two Alternative routes.

Therefore, the potential biological resource impacts associated with the Bloomington route would be the same as those identified for the Proposed Project.

Rialto Alternative

The Rialto Alternative route, and the segment of the Proposed Project route that it would replace, do not have any differences with respect to biological resources. Both segments would impact suitable habitat for the San Bernardino kangaroo rat and Los Angeles pocket mouse. During 2008 surveys for listed species, potential San Bernardino kangaroo rat habitat was observed along this alternative route; however, no other listed species or their habitats were observed. Both the Proposed and Alternative route are located within USFS modeled suitable habitat for San Bernardino kangaroo rat (Figure 3.7-3). Neither segment is located in close proximity to delineated wetlands or waterbodies that could have aquatic receptors. Although impacts to biological resources could occur in this area, they would not be significant under CEQA, and there would no difference in impacts between the two Alternative routes.

Therefore, the potential biological resource impacts associated with the Rialto Alternative route would be the same as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road HDD Alternative route would result in fewer impacts to biological resources than the Proposed Project. This is because the Alternative route would avoid adverse impacts to the 7.6 acres of high quality riparian habitat within Cajon Creek in the San Bernardino National Forest by bypassing the riparian area and using a HDD to construct the pipeline under Interstate 15. By avoiding the riparian habitat and creek, the Wagon Train Alternative would decrease the impacts to endangered southwestern willow flycatcher, least bell's vireo, and occupied ARTO habitat (including DCH). By avoiding the creek, the alternative would also substantially decrease the potential for water quality impacts that would be caused by construction within the creek. During surveys of listed species conducted in 2008, no listed species or potential habitat was observed along the alternative route, which occurs along a developed roadway on the east side of the highway.

Potential impacts on ARTO upland and breeding habitat would still be possible as a result of constructing the Wagon Train alternative. The HDD activity would require the use of a small amount of land area on the west side of the highway for placement of the drilling equipment, but this impact would be temporary, cocurring only during construction. The pipeline laydown area would be located on the road on the west side area, so would not require ground disturbance. Breeding habitat may be adversely affected in the event of a frac-out during the HDD operation associated with the Wagon Train alternative. Drilling lubricant (typically bentonite clay) could enter breeding habitat if a frac-out occurs. Protective measures have been proposed that would avoid contaminating ARTO breeding habitat. The risk of a frac-out exists only during construction, and that risk would not occur during operations.

Impacts to suitable least Bell's vireo habitat would also occur during the HDD operations near MP 24.5 and 25.5 in Cajon Pass. The HDD operations at these areas along the Proposed Project would result in the clearing and grading of the vegetation for the establishment of required temporary workspaces for HDD operations. Near MP 24.5 and 25.5, the creation of HDD workspaces would result in loss of approximately 3.5 acres of riparian scrub habitat.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa Alternative route, and the segment of the Proposed Project that it would replace along Baldy Mesa Road, do not have any differences with respect to biological resources. Both segments are in a residential neighborhood, and neither segment is located in close proximity to delineated wetlands or waterbodies that could have aquatic receptors. Biological surveys conducted for the Proposed Project in this area did not include investigation of this alternative route; therefore, should this alternative route be selected, mitigation measure MM BIO-27 (see below) would also be required. Because the Alternative route in this area is longer than the Proposed route by 0.8 miles, impacts associated with clearing and grading would be slightly higher for the Alternative route. However, because this additional clearing and grading would occur in a developed area, impacts to biological resources would not be significant under CEQA, and there would no substantial difference in impacts between the two Alternative routes.

- **MM BIO-27: Pre Construction Surveys.** Prior to any construction activity on the Alternative route, the Applicant would conduct biological surveys equivalent in scope to those conducted on the Proposed Project Route. The results of the surveys would be used to develop additional mitigation, if needed.

Overall, the potential biological resource impacts associated with the Phelan Road/Baldy Mesa Alternative route would be the same as those identified for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route would not be preferable to the segment of the Proposed Project that it would replace, with respect to biological resources. The Proposed Route diverges from the route of the existing pipelines in order to avoid constructability issues associated with placing the proposed pipeline within an active wash. Although potential desert tortoise habitat was observed during biological surveys of this alternative route in 2008, no special-status species were documented in either area during the Applicant's surveys. Also, neither segment is located in close proximity to delineated wetlands or waterbodies that could have aquatic receptors.

The Alternative route would have the potential to have greater impacts to biological resources than the Proposed route. This is because the construction of the existing 8-inch and 14-inch pipelines, and use of the existing maintenance road, within the Proposed route have disturbed this area. Construction of the new pipeline along the Alternative route would require disturbance of approximately 1.5 miles of pipeline ROW in an area that has not been previously disturbed. With an average width of 100 feet, this would disturb 18 acres of previously undisturbed habitat. The impact on that 18 acres would likely be permanent, due to the length of time required for revegetation, and the long-term need for a maintenance road in this area. Construction of the pipeline within the Proposed route would focus most of the construction-related disturbance in an area which has previously been disturbed, and would use the existing maintenance road for maintenance access.

Biological resource impacts to vegetation and habitat associated with the Alternative route would be direct and adverse, totaling 18 acres of new disturbance. Impacts to wildlife would be indirect and adverse, consisting of removal of habitat and displacement. Direct impacts to wildlife, including the potential for vehicle strikes, would be the same for both the Alternative route and the Proposed route. Impacts would be reduced through the same mitigation measures proposed for Alternative 1.

Overall, the biological resource impacts associated with the Zzyzx Alternative route would be greater than those identified for the Proposed Project.

Baker Alternative

The Baker Alternative route would be preferable to the segment of the Proposed Project that it would replace, with respect to biological resources. The Alternative route would traverse approximately 2.5 miles adjacent to Interstate 15, and would then follow a transmission line ROW through the town of Baker for one mile. In general, the Alternative route would occur within areas that are already disturbed for construction of Interstate 15, and for development of the town of Baker. In contrast, the Proposed route that it would replace would traverse approximately 4.1 miles through a previously undisturbed area of desert.

Both areas are located in habitat for the desert tortoise. Although potential desert tortoise habitat was observed during biological surveys of this alternative route in 2008, no special-status species were documented in either area during the Applicant's surveys. Neither segment is located in close proximity to delineated wetlands or waterbodies that could have aquatic receptors.

Given an approximate width of the pipeline ROW of 100 feet, the Proposed Project route would require new disturbance of approximately 50 acres of previously undisturbed desert. In addition, the Proposed route would include the need to construct an equipment access road around a stormwater diversion berm, near MP-142.5. Because this access road would need to traverse up one side of the berm and then down the other, the road would be approximately one mile long. Because it is located adjacent to the stormwater berm, this access road area is already disturbed.

Biological resource impacts to vegetation and habitat associated with the Alternative route would be direct and adverse, but would occur in an area that has already been disturbed, is adjacent to a highway and within the town of Baker, and is therefore poor quality habitat. Impacts to wildlife would be indirect and adverse, consisting of removal of habitat and displacement. Direct impacts to wildlife, including the potential for vehicle strikes, could also occur along the Alternative route. However, the potential for impacts along the Alternative route would be lower than that for the Proposed route. Impacts on the Alternative route would be mitigated through the same mitigation measures proposed for Alternative 1.

Overall, the biological resource impacts associated with the Baker Alternative route would be lower than those identified for the Proposed Project.

Silver Lake Pump Station Alternative

The Silver Lake Pump Station Alternative route would not be preferable to the location of the pump station in the Proposed Project area, with respect to biological resources. The Alternative location would be situated approximately 2000 feet east of the town of Baker, and would comprise three acres of permanent disturbance in a previously undeveloped area. Vehicle traffic associated with construction and operations of the Alternative location would traverse approximately 2000 feet of unimproved road through desert tortoise habitat. In addition, selection of the Alternative location would require the construction of 2000 feet of transmission line to connect the pump station to the substation. This transmission line would require additional construction and maintenance traffic through the undisturbed area.

The proposed location, adjacent to the SCE substation, would also require three acres of permanent disturbance. However, the disturbance associated with the Proposed Project location would occur in a previously disturbed area within the town of Baker, adjacent to the SCE substation and the school. Vehicle traffic associated with pump station construction and operations would traverse only a few hundred feet of unimproved access road off of improved road SF 127.

Both areas are located in habitat for the desert tortoise. Although potential desert tortoise habitat was observed during biological surveys of this alternative route in 2008, no special-status species were documented in either area during the Applicant's surveys. Because the Proposed location is situated in a developed area, it is expected that potential impacts to desert tortoise habitat and individuals would be greater for the Alternative location. Neither segment is located in close proximity to delineated wetlands or waterbodies that could have aquatic receptors.

Biological resource impacts to vegetation and habitat associated with the Alternative location would be direct and adverse, and would occur in an area that has not already been disturbed. Impacts associated with the Proposed Project location could also occur, but the Proposed location is adjacent to a highway and within the town of Baker, and is therefore poor quality habitat. Impacts to wildlife would be indirect and adverse, consisting of removal of habitat and displacement. Direct impacts to wildlife, including the potential for vehicle strikes, would be more likely for the Alternative location due to the increased amount of traffic required through undeveloped, undisturbed habitat. Impacts associated with the Alternative location would be mitigated through the same mitigation measures proposed for Alternative 1.

Overall, the biological resource impacts associated with the Silver Lake Pump Station Alternative location would be higher than those identified for the Proposed Project.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral and the segment of the Proposed Project route that it would replace through Bracken Junction, do not have any differences with respect to biological resources. Both segments are in an urban environment, and no special-status species or potential habitat were documented in either area during the Applicant's surveys. Also, neither segment is located in close proximity to delineated wetlands or waterbodies that could have aquatic receptors. Although impacts to biological resources could occur in this area, there would no difference in impacts between the two Alternative routes.

Therefore, the potential biological resource impacts associated with the Sunset Lateral Alternative route would be the same as those identified for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to biological resources.

Summary

Both the Proposed Project and Alternative 2 could have potential impacts to biological resources. Some of the route variations associated with Alternative 2, including the Wagon Train Road HDD Alternative and Baker Alternative, would result in a reduction of potential impacts to biological resources, including long term impacts. The Wagon Train HDD Alternative would avoid direct adverse impacts to the Cajon Wash riparian area and associated habitat by using the HDD construction method to divert the pipeline under Interstate 15, concentrating the construction on the east side of the highway, which is already developed. The Baker Alternative route would reduce impacts by placing the new pipeline within the existing Interstate 15 corridor for 2.5 miles, and then through the developed town of Baker for one mile. This alternative route would avoid approximately 50 acres of disturbance and substantial construction and maintenance traffic that would be associated with the Proposed Project route in this area.

Other Alternative 2 variations, including the Zzyzx Alternative route and Silver Lake Pump Station Alternative location, would result in a greater amount of impacts to biological resources. Both alternatives would result in new disturbance and increased construction and maintenance traffic in previously undisturbed areas, which could be reduced or avoided by using the Proposed Project route and location. In the case of the Silver Lake Pump Station, the new disturbance would occur in desert tortoise habitat. The Zzyzx Alternative would result in long-term disturbance of 18 acres of previously undisturbed area, while the Proposed route in this area would use the existing ROW corridor, which is already disturbed. The Silver Lake Pump Station Alternative would result in permanent disturbance of 3 acres of previously undisturbed area, while the Proposed location in this area would occur in a developed area that is less likely to be habitat for vegetation or wildlife. The Silver Lake Pump Station Alternative would also require substantial vehicle traffic along the 2000 foot long undeveloped road that would be avoided through selection of the Proposed location.

Finally, some variations, including the Bloomington Alternative, Rialto Alternative, Phelan Road/Baldy Mesa Alternative, and Sunset Lateral Alternative, would present impacts with respect to biological resources that are similar to those of the Proposed Project. In each case, this is because these alternative routes occur in urban, residential, or otherwise developed areas in which biological resource impacts are unlikely for either alternative.

All mitigation measures developed for the Proposed Project would also be applicable to all of the Alternative routes. These mitigation measures would reduce the level of impacts under CEQA to less than significant.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative location, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. With respect to biological resources, Alternative 3 would incorporate the reduced impacts associated with avoidance of the Cajon Wash riparian area at the Wagon Train Road HDD area, and would also avoid disturbing 18 acres of previously undisturbed habitat at the Zzyzx Alternative location.

Selection of the Silver Lake Pump Station Alternative as part of Alternative 3 would result in permanent disturbance of 3 acres of previously undisturbed area, while the Proposed location in this area would occur in a developed area that is less likely to be habitat for vegetation or wildlife. The Silver Lake Pump Station Alternative would also require substantial vehicle traffic along the 2000 foot long undeveloped road that would be avoided through selection of the Proposed location. Therefore, with respect to the Silver Lake Pump Station, biological resources impacts associated with Alternative 3 would be the same as Alternative 2, and both would be greater than those of the Proposed Project.

Alternative 3 would not incorporate the reduced biological resource impacts associated with the Baker Alternative route. Given an approximate width of the pipeline ROW of 100 feet, the Proposed Project route in this area would require new disturbance of approximately 50 acres of previously undisturbed desert within desert tortoise habitat. In addition, the Proposed route would include the need to construct an equipment access road around a stormwater diversion berm, near MP-142.5. Because this access road would need to traverse up one side of the berm and then down the other, the road would be approximately one mile long. Because it is located adjacent to the stormwater berm, this access road area is already disturbed. The Alternative route in this area would avoid or reduce these biological resource impacts by placing the new pipeline within the poorer quality habitat in the Interstate 15 ROW and within the town of Baker.

All mitigation measures developed for the Proposed Project would also be applicable to all of the Alternative routes. These mitigation measures would reduce the level of impacts under CEQA to less than significant.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure would be installed. No ground-disturbing activities would take place and potential impacts to biological resources resulting from current activities on the existing pipelines would remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems would be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines would remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, CA to Las Vegas, NV. Impacts from current operations include any potential leaks and/or spills from the pipeline or truck and train delivery systems. However, current maintenance activities on the existing Calnev Pipeline System involve visual and SCADA directed pipeline integrity checks twice per week, and a spill response plan is in place for all delivery systems. This operation and maintenance regime would not change under the No Action Alternative; therefore, biological resource impacts from these activities would remain unchanged.

3.7.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.7-6, there are differences in impacts based on the route variations.

Table 3.7-6 Comparison of Impacts by Alternative

Resource	Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
Vegetation	Disturbance and removal of vegetation, including special status species, in the construction ROW and temporary construction areas resulting in reduced habitat quality and increased opportunity for the invasion and establishment of weed species.	The Wagon Train HDD Alternative would avoid direct adverse impacts to the Cajon Wash riparian area. Using the HDD to avoid the riparian area would eliminate construction impacts between MP-24 and MP-25, and would also eliminate the need for long-term maintenance access to this area. The Baker Alternative route would reduce impacts by placing the new pipeline within the existing Interstate 15 corridor for 2.5 miles, and then through the developed town of Baker for 1 mile, thereby avoiding approximately 50 acres of disturbance and substantial construction and maintenance traffic that would be associated with the Proposed Project route in this area. However, the Silver Lake Pump Station would result in new disturbance within desert tortoise habitat and the Zzyzx Alternative would result in long-term disturbance of 18 acres of previously undisturbed area.	Alternative 3 would avoid the Cajon Wash riparian area at the Wagon Train Road HDD area. Using the HDD to avoid the riparian area would eliminate construction impacts between MP-24 and MP-25, and would also eliminate the need for long-term maintenance access to this area. Alternative 3 would also avoid disturbing 18 acres of previously undisturbed habitat at the Zzyzx Alternative location. The Silver Lake Pump Station Alternative would result in permanent disturbance of 3 acres of previously undisturbed area.	Under the No Action Alternative, no ground-disturbing activities would take place and potential impacts to vegetation resulting from current activities on the existing pipelines would remain unchanged.
Arroyo Toad	Permanent impacts on arroyo toad habitat, including approximately 20.2 acres of DCH (12.6 acres of upland habitat and 7.6 acres of breeding habitat) at Cajon Wash near Wagon Train Road. Impacts would result from a loss of available habitat due to ground disturbance during construction. Additional impacts would occur as a result of maintenance activities.	Permanent impacts on arroyo toad habitat, including approximately 8.8 acres of DCH in upland habitat. No impacts on breeding habitat. Impacts would result from a loss of available habitat due to ground disturbance during construction. Additional impacts would occur as a result of maintenance activities.	Permanent impacts on arroyo toad habitat, including approximately 8.8 acres of DCH in upland habitat. No impacts on breeding habitat. Impacts would result from a loss of available habitat due to ground disturbance during construction. Additional impacts would occur as a result of maintenance activities.	Under the No Action Alternative, no ground-disturbing activities would take place and potential impacts to the arroyo toad resulting from current activities on the existing pipelines would remain unchanged.
Desert Tortoise	Permanent impacts on desert tortoise habitat, including approximately 1,497.7 acres of temporary impacts to suitable desert tortoise habitat between MP 53 and	Permanent impacts on desert tortoise habitat, including approximately 1,497.7 acres of temporary impacts to suitable desert tortoise habitat between MP 53 and MP 220,	Permanent impacts on desert tortoise habitat, including approximately 1,547.7 acres of temporary impacts to suitable	Under the No Action Alternative, no ground-disturbing activities would take place and potential

	MP 220, approximately 390.4 acres of temporary impacts on desert tortoise DCH, and 61 acres of modeled habitat on USFS land. Impacts would result from a loss of available habitat, and would occur along newly established access roads, and at new valve locations.	approximately 390.4 acres of temporary impacts on desert tortoise DCH, and 61 acres of modeled habitat on USFS land. Impacts would result from a loss of available habitat, and would occur along newly established access roads, and at new valve locations. The Silver Lake Pump Station Alternative would result in permanent disturbance of 3 acres of previously undisturbed desert tortoise habitat and would require substantial vehicle traffic along a 2000-foot long undeveloped road that could result in increased tortoise/vehicle collisons and burials in burrows.	desert tortoise habitat between MP 53 and MP 220, approximately 390.4 acres of temporary impacts on desert tortoise DCH, and 61 acres of modeled habitat on USFS land. Impacts would result from a loss of available habitat, and would occur along newly established access roads, and at new valve locations. Alternative 3 would not incorporate the reduced impacts associated with the Baker Alternative route; thereby resulting in additional disturbance of approximately 50 acres of previously undisturbed desert within desert tortoise habitat.	impacts to the desert tortoise resulting from current activities on the existing pipelines would remain unchanged.

Table 3.7-6 Comparison of Impacts by Alternative

Resource	Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
Other Wildlife	Temporary and permanent impacts to wildlife, including special status terrestrial wildlife species and birds, associated with habitat degradation from excavation-related ground disturbance and increased human activity in the area. In addition, construction of the Proposed Project could also result in impacts to wildlife movement for large mammals and potential increases in wildlife/vehicle collisions and burial in dens or burrows, particularly for small animals such as mice, rats, squirrels, frogs, lizards, and snakes.	The Wagon Train and Baker Alternativs would result in fewer habitat impacts from construction-related activies, whereas the Zzyzx and Silver Lake Pump Station Alternatives would result in slightly greater impacts from the increased disturbance of previously un-developed land. Also, the Silver Lake Pump Station Alternative would require substantial vehicle traffic along the 2000 foot long undeveloped road that would be avoided through selection of the Proposed location; therefore increasing the potential for vehicle/wildlife collisons.	Alternative 3 would incorporate the reduced impacts associated with avoidance of the Cajon Wash riparian area at the Wagon Train Road HDD area, and would also avoid disturbing 18 acres of previously undisturbed habitat at the Zzyzx Alternative location which would preserve terrestrial wildlife habitat and allow these portions of the project area to continue providing land cover/shelter for small animals.	Under the No Action Alternative, no ground-disturbing activities would take place and potential impacts to wildlife and birds resulting from current activities on the existing pipelines would remain unchanged.

3.7.4 Summary of Mitigation

A complete list of mitigation measures proposed for the Project is presented by impact in Table 3.7-7. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.7-7 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Impact BIO-1: Impact to vegetation communities.	**MM BIO-01:** Staking and flagging.	Entire route	BLM, USFS, San Bernardino County	Pre-construction
Impact BIO-2: Impact to special status plants.	**MM BIO-02:** Avoid Sensitive plant species. **MM BIO-03:** White-margined beardtongue mitigation. **MM-BIO-04:** Specific Contents of Restoration Plan.	Entire route for MM-BIO-02. Ivanpah Valley for MM-BIO-03.	BLM, USFS, San Bernardino County	During construction
Impact BIO-4: Impact to special status terrestrial wildlife species.	**MM BIO-05:** WEAP. **MM BIO-06:** Biological resource advisors. **MM BIO-07:** Biological monitors and clearing of sites accessed by heavy equipment. **MM BIO-08:** Equipment and desert tortoises. **MM BIO-09:** Water pooling. **MM BIO-10:** Trash abatement. **MM BIO-11:** Delhi sands flower-loving fly construction timing. **MM BIO-12:** Delhi sands flower-loving fly construction access. **MM BIO-13:** Directional lighting for San Bernardino kangaroo rat. **MM BIO-14:** Directional lighting for Los Angeles pocket mouse. **MM BIO-15**: Construction Area and Trench Management **MM BIO-16:** Movement of Wildlife **MM BIO-17:** Pre-construction Surveys for Arroyo Toad **MM BIO-18:** Collapsing of Tortoise Burrows **MM BIO-19**: Habitat Acquisition for Desert Tortoise	Entire route	BLM, USFS, San Bernardino County	Pre-construction and during construction
Impact BIO-5: Impact to bird species.	**MM BIO-20:** Raptor nest surveys. **MM BIO-21:** Raptor nests in buffer area.	Entire route	BLM, USFS, San Bernardino County	Pre-construction, during construction, and during

Table 3.7-7 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	MM BIO-22: Burrowing owl surveys. **MM-BIO-23:** Vegetation Removal. **MM BIO-24:** Least Bell's Vireo Habitat and Nests. **MM BIO-25:** Southwestern Willow Flycatcher Habitat and Nests. **MM BIO-26:** Coastal California Gnatcatcher Habitat and Nests.			maintenance
Impact BIO-1 through **BIO-5**	**MM BIO-27:** Pre-construction surveys.	Phelan Road/+Baldy Mesa and Sunset Lateral Alternatives only	BLM	Pre-construction

References

Abella, S. R., J. E. Spencer, J. Hoines, and C. Nazarchyk 2008. Assessing an exotic plant surveying program in the Mojave Desert, Clark County, Nevada, USA. In *Environmental* Monitoring *and Assessment.* Springer Netherlands. DOI 10.1007/s10661-008-0263-0.

AMEC Earth and Environmental, Inc (AMEC). 2007. *Calnev North Expansion Project: Habitat Assessment and Focused Survey for the Delhi Sands Flower-loving Fly.* Unpublished report submitted to Kinder Morgan Energy Partners.

Atwood, J.L. 1990. *Status review of the California gnatcatcher (Polioptila californica).* Manomet Bird Observatory, Manomet, MA, 79 pp.

Atwood. J.L. 1992. A maximum estimate of the California gnatcatcher's population size in the United States, *Western Birds* 23:1-9.

Atwood, J.L., and D.R. Bontrager. 2001. California Gnatcatcher (*Polioptila californica).* In A. Poole and F. Gill (eds.). *The Birds of North America* No. 574. Philadelphia.

Audubon. 2011a. Bird Conservation Watch List, Band-tailed Pigeon (*Columbia fasciata*). http://www.audubon2.org/watchlist/viewSpecies.jsp?id=22 Accessed June 21, 2011.

Audubon. 2011b. Bird Conservation Watch List, Calliope hummingbird (*Stellula calliope*). http://www.audubon2.org/watchlist/viewSpecies.jsp?id=58 Accessed June 20, 2011.

Audubon. 2011c. Bird Conservation Watch List, Mountain Quail (*Oreortyx pictus*). http://audubon2.org/watchlist/viewSpecies.jsp?id=140 Accessed June 21, 2011.

Audubon. 2011d. Bird Conservation Watch List, Oak Titmouse (*Baeolophus inornatus*). http://audubon2.org/watchlist/viewSpecies.jsp?id=148 Accessed June 14, 2011.

Beatley, J. C. 1966. Ecological status of introduced brome grasses (*Bromus* spp.) in desert vegetation of southern Nevada. *Ecology*, 47, 548–554.

Beatley, J.C. 1976. *Rainfall and fluctuating plant populations in relation to distributions and numbers of desert rodents in southern Nevada.* Oecologia (Berlin) 24:21-42.

Beier, P., K.L. Penrod, C. Luke, W.D. Spencer, and C. Cabanero. 2006. South Coast Missing Linkages: Restoring Connectivity To Wildlands In The Largest Metropolitan Area In The United States. K. Crooks and M. Sanjayan (eds.), Connectivity Conservation. Cambridge University Press.

Beier, P., and S. Loe. 1992. *A checklist for evaluating impacts to wildlife movement corridors.* Wildlife Society Bulletin.

Bent, A.C. 1948. Life histories of North American nuthatches, wrens, thrashers, and their allies. Bull. U.S. Natl. Mus. 195.

Berry, K.H. 1986. Desert tortoise (*Gopherus agassizii*) relocation: implications of social behavior and movements. *Herpetologica*. 42(1): 113-125.

Bradley, W.G., and R.A. Mauer. 1973. Rodents of a creosote-bush community in southern Nevada. Southwest. Nat. 17:333-344.

Brown, J.H., and G.A. Lieberman. 1973. Resources utilization and coexistence of seed eating desert rodents in sand dune habitats. Ecology 54:788-797.

Brown, D.E. and R. A. Minnich 1986. Fire and changes in creosote bush scrub of the western Sonora Desert, California. In: American Midland Naturalist. Vol 116: pp 411-422

Bureau of Land Management (BLM).1980.California Desert Conservation Area Plan. Pg. 144. Riverside, California.

Bureau of Land Management (BLM). 1998. Proposed Las Vegas Resource Management Plan and Final Environmental Impact Statement. Vol. I. Prepared by the Las Vegas Field Office. May 1998. 300 pp.

Bureau of Land Management (BLM). 2001. Restoration Plan for Energy Projects in the Las Vegas Field Office. Prepared by Las Vegas Field Office and Native Resources

Bureau of Land Management (BLM). 2011. Swainson's Hawk (*Buteo swainsoni*). By A. Sidney England. No date. http://www.blm.gov/ca/pdfs/cdd_pdfs/swainhawk1.PDF. Accessed June 22, 2011.

Burt, W.H. and R.P. Grossenheider. 1976. Mammals. Houghton Mifflin Company, New York. 216.

California Burrowing Owl Consortium. April 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Prepared for CDFG.

California Department of Fish and Game (CDFG). 2003. Mohave Ground Squirrel Survey Guidelines. January 2003.

California Department of Fish and Game (CDFG). 2008a. California Natural Diversity Data Base *Special Animals List.* Sacramento, California. July.

California Department of Fish and Game (CDFG). 2008b. California Natural Diversity Data Base *Special Vascular Plants, Bryophytes, and Lichens List.* Sacramento, California. July.

California Department of Fish and Game (CDFG). 2010. California Wildlife Habitat Relationships *Life History accounts and Range Maps*. Sacramento, California. http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx. Accessed December 17, 2010

California Department of Food and Agriculture (CDFA). 2007. Botany Laboratory Weed Rating list. http://www.cfda.ca.gov/phpps/ipc/encycloweedia.

Californiaherps.com. 2011a. A Guide to the Amphibians and Reptiles of California. Aspidoscelis tigris stejnegeri - Coastal Whiptail Accessed at http://www.californiaherps.com/lizards/pages/a.t.stejnegeri.html on June 15, 2011.

Californiaherps.com. 2011b. A Guide to the Amphibians and Reptiles of California, Callisaurus draconoides rhodostictus - Western Zebra-tailed Lizard. http://www.californiaherps.com/lizards/pages/c.d.rhodostictus.html Accessed June 20, 2011.

Californiaherps.com. 2011c. A Guide to the Amphibians and Reptiles of California, Diadophis punctatus modestus - San Bernardino Ring-necked Snake. http://www.californiaherps.com/snakes/pages/d.p.modestus.html. Accessed November 22, 2011.

Californiaherps.com. 2011d. A Guide to the Amphibians and Reptiles of California, Thamnophis hammondii - Two-striped Gartersnake. http://www.californiaherps.com/snakes/pages/t.hammondii.html. Accessed November 22, 2011.

California Native Plant Society (CNPS). 2008. Inventory of Rare and Endangered Plants (online edition, v7-08c-interim). California Native Plant Society. Sacramento, California. http://www.cnps.org/inventory. Accessed September 5, 2008.

California Partners in Flight. 1998. Swainson's Thrush (C*atharus ustulataus*). *In* The Riparian Bird Conservation Plan:a strategy for reversing the decline of riparian-associated birds in California. S. Small. http://www.prbo.org/calpif/htmldocs/species/riparian/swainsons_thrush.htm. Accessed June 22, 2011.

California Partners in Flight. 2004. Song Sparrow (*Melospiza melodia*). *In* The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. D. Humple and G. R. Geupel. http://www.prbo.org/calpif/htmldocs/species/riparian/song_sparrow.htm. Accessed June 22, 2011.

California Partners in Flight. 2005. Tree Swallow (*Tachycineta bicolor*). *In* The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. A. Armstrong, E.C. Mendoza, and D. Winkler. http://www.prbo.org/calpif/htmldocs/species/riparian/tree_swallow.htm. Accessed June 22, 2011.

Campbell, L.A., T.B. Graham, L.P. Thibault, and P.A. Stine. 1996. The arroyo toad (*Bufo microscaphus californicus*), ecology, threats, recovery actions, and research needs. U.S. Department of the Interior, National Biological Service, California Science Center, Technical Report (NBS/CSC-96-01). Ii + 46 pp.

City of Victorville. 1997. *City of Victorville General Plan*. Pg. 305. City of Victorville. Victorville, Ca.

Clark County. 2000. *Final Clark County Multi-Species Habitat Conservation Plan and Environmental Impact Statement for Issuance of a Permit to Allow Incidental Take of 79 Species in Clark County, Nevada.* Pg. 4-11. Clark County, Ca.

Collins, C.T. 1979. The ecology and conservation of burrowing owls. Pages 6-17 in P. P. Scheaffer and S. M Ehlers (eds.). *Proceedings of the National Audubon Society Symposium of Owls of the West, Their Ecology and Conservation.* National Audubon Society Western Education Center. Tiburon, California. October.

Davis, L.H., R.L. McKernan, and J. S. Burns. 1998. History and status of the California Gnatcatcher in San Bernardino County, California. *Western Birds* 29: 361-365.

Davis, J. N. 1999. Lawrence's Goldfinch (*Carduelis lawrencei*). In *The Birds of North America*, No. 480 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia.

Dunn, J. L., and K. L. Garrett. 1997. *A Field Guide to Warblers of North America*. Houghton Mifflin, New York.

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1988. The Birder's Handbook: A Field Guide To The Natural History of North American Birds. Simon & Schuster, New York. 785 Pp.

Gustafson, J.R. 1993. *A Status Review of the Mohave Ground Squirrel (Spermophilus mohavensis)*. California Department of Fish and Game. Nongame Bird and Mammal Report 93-9.

Haas, W.E. 2001. *Ecology of the Willow Flycatchers Along the Upper San Luis Rey River*. unpublished Draft Report, 29 pp.

Hall, E.R. 1946. *Mammals of Nevada*. Univ. California Press, Berkeley. 710pp.

Holland, D. C. 1985. An Ecological And Quantitative Study Of The Western Pond Turtle (*ClemmysMarmorata*) In San Luis Obispo County, California. Unpublished Master's Thesis, CaliforniaState University Fresno.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Resources Agency.

Holland, Dan C. 1991. Status and Reproductive Dynamics of a Population of Western Pond Turtles (*Clemmys marmorata*) in Klickitat County in 1991. Washington. Report to Nongame Division, Washington Department of Wildlife.

Jennings, M.R., and M.P. Hayes. 1994. *Amphibian and reptile species of special concern in California.* Final report to the California Department of Fish and Game, Inland Fisheries Div., Rancho Cordova, California, under Contract (8023). Iii + 255 pp.

Johnsgard, P.A. 1988. Hawks, Eagles and Falcons of North America. Washington D. C.: Smithsonian Institution Press.

Karl, A.E. 1983. *The Distribution, Relative Densities, and Habitat Associations of the Desert Tortoise, Gopherus agassizii, in Nevada.* M.S. Thesis, California State Univ., Northridge. 111 pp.

Karl, A.E. 1988. *Investigation of the status of the desert tortoise, Gopherus agasizii, in Joshua Tree National Monument.* Las Vegas, NV, National Park Service, University of Nevada, Number 040/02.

Keep Milpas Rural. 2009. Current Plant Protection Laws. http://keepmilpasrural.com/currentplantprotectionlaws.html. Accessed May 14, 2009.

Kirkpatrick, J.B., and C.F. Hutchinson. 1977. The community composition of Californian coastal sage scrub. *Plant Ecology*, Volume 35, Issue 1, Aug 1977, Pages 21 – 33.

Kochert, M.N., K. Steenhof, C.L. Mcintyre, and E.H. Craig 2002. Golden Eagle (*Aquila chrysaetos*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/684doi:bna.684.

Laymon, S.A. and M.D. Halterman. 1989. *A proposed habitat management plan for Yellow-billed Cuckoos in California*. United States Forest Service Gen. Tech. Rep. PSW-110 p 272-277.

Laymon, S.A. 1998. *Draft Yellow-billed Cuckoo Survey and Monitoring Protocol for California.* Prepared by Stephen A. Laymon, PhD., Research Wildlife Ecologist. Prepared: June 4, 1998; Revised: July 13, 1998. Marlow R. W. 1979. Energy relations in the desert tortoise *Gopherus agassizii.* Ph.D. dissertation, University of California, Berkeley.

Lovich, J. E., and D. Bainbridge 1999. Anthropogenic Degradation of the Southern California Desert Ecosystem and Prospects for Natural Recovery and Restoration. *Environmental Management* Vol. 24, No. 3, pp. 309–326

Marlow, R.W. 1979. Energy relations in the desert tortoise, *Gopherus agassizii*. Ph.D. dissertation. University of California, Berkeley.

Meserve, P.L. 1976. Food relationships of a rodent fauna in a California coastal sage scrub community. *J. Mammal.* 57:300-3 19.

Miller, A.H., and R.C. Stebbins. 1964. *The lives of desert animals in Joshua Tree National Monument.* Univ. California Press, Berkeley. 452pp.

Mock, P.J. 2004. California Gnatcatcher. Pages 430-433 *In* P. Unitt. *San Diego County Bird Atlas.* Ibis Publishing.

NatureServe. 2010a. *Catharus ustulatus.* Swainson's Thrush. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1 NatureServe. Arlington, Virginia. http://www.nrs.fs.fed.us/atlas/bird/RFbirdmod_7580.html. Accessed June 22, 2011.

NatureServe. 2010b. *Lepus californicus bennettii*. San Diego Black-tailed Jackrabbit. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1 NatureServe. Arlington, Virginia. http://www.natureserve.org/explorer/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=103063&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=103063&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=103063. Accessed June 21, 2011.

NatureServe. 2010c. *Neotoma lepida intermedia*. San Diego Desert woodrat. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1 NatureServe. Arlington, Virginia. http://www.natureserve.org/explorer/servlet/NatureServe?searchName=Neotoma+lepida+intermedia. Accessed June 21, 2011.

Nevada Department of Wildlife (NDOW). 2007. Gila Monster Status, Identification and Reporting Protocol for Observations. http://www.ndow.org/wild/conservation/

Page, L.M. and B.M. Burr. 1991. A field guide to freshwater fishes: North America, North of Mexico. Houghton Mifflin Co., Boston. pp. 100-101.

Penrod, K., C. Cabanero, P. Beier, C. Luke, W. Spencer, E. Rubin, S. Loe, and K. Meyer. 2004. South Coast Missing Linkages Project: A Linkage Design for the San Gabriel-San Bernardino Connection. South Coast Wildlands, Idyllwild, California. www.scwildlands.org.

Polite, C. and J. Pratt. 2011. California Wildlife Habitat Relationships System: Peregrine Falcon. California Department of Fish and Game, California Interagency Wildlife Task Group. Accessed at http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentVersionID=17922 on November 22, 2011.

Rathbun, G.B., N. Siepel, and D. Holland. 1992. Nesting behavior and movements of Western Pond Turtles, *Clemmys marmorata*. Southwestern Naturalist 37:319-324.

Remsen, V. 1978. *The species of special concern list: an annotated list of declining or vulnerable birds in California*. Western Field Ornithologist, Museum of Vertebrate Zoology, University of California, Berkeley.

Russell, K. R. 1978. Mountain lion. Pages 207-225 in J. L. Schmidt and D. L. Gilbert, eds. Big game of North America. Stackpole Books, Harrisburg, PA. 494pp.

Salata, L.R. 1984. *Status of the Least Bell's vireo on Camp Pendleton, California: Report on research done in 1984*. unpublished report, United States Fish and Wildlife Service, Laguna Niguel, California.

San Diego Natural History Museum (SDNHM). 2011a. Field Guide: *Lichanura trivirgata*, Rosy Boa. http://www.sdnhm.org/fieldguide/herps/lich-tri.html Accessed June 20, 2011.

San Diego Natural History Museum (SDNHM). 2011b. Field Guide: *Crotalus mitchelli,* Speckled Rattlesnake. http://www.sdnhm.org/fieldguide/herps/crot-mit.html Accessed on June 14, 2011.

San Diego Natural History Museum (SDNHM). 2011c. Field Guide: Lepus californicus, Black-tailed Hare. http://www.sdnhm.org/fieldguide/mammals/lepu-cal.html. Accessed June 21, 2011.

Schoenherr, A.A. 1992. *A Natural History of California*. University of California Press. Berkeley and Los Angeles, California.

Seattle Audubon Society. 2008a. Bird Web: Learn about the Birds of Washington State. Common Nighthawk. http://www.seattleaudubon.org/birdweb/bird_details.aspx?id=255 Accessed June 20, 2011.

Seattle Audubon Society. 2008b. Bird Web: Learn about the Birds of Washington State. Long-eared Owl. http://www.birdweb.org/birdweb/bird_details.aspx?id=251 Accessed June 17, 2011.

Seattle Audubon Society. 2008c. Bird Web: Learn about the Birds of Washington State. Prairie Falcon. http://www.birdweb.org/birdweb/bird_details.aspx?id=115 Accessed June 22, 2011.

Sheppard, JM. 1970 A Study of the LeConte's Thrasher. *California Birds*. 1:85-94.

Shuford, W.D., and T. Gardeli, (editors). 2008. *California Birds Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California*. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Smith, R.L. 1980. *Alluvial scrub vegetation of the San Gabriel River floodplain, California*. Madrono 27:126-138.

Smithsonian National Museum of Natural History (SNMNH). 2008. North American Mammals, Bighorn Sheep. http://www.mnh.si.edu/mna/main.cfm. Accessed August 2008.

Smithsonian National Museum of Natural History (SNMNH). 2011. *Odocoileus hemionus* Mule Deer. http://www.mnh.si.edu/mna/image_info.cfm?species_id=229. Accessed June 21, 2011.

Society for the Conservation of Bighorn Sheep (SCBS). 2008. Personal communication with Gary Thomas.

Stebbins, R.C. 1951. *Amphibians of Western North America*. Houghton Mifflin Company, Boston. pp 539.

Stebbins, R.C. 1985. *Western Reptiles and Amphibians*. Houghton Mifflin Company, New York. 514 pp.

Stebbins, R.C. 2003. *Western Reptiles and Amphibians*. Houghton Mifflin Company, New York. 533 pp.

Stephenson, John R.; Calcarone, Gena M. 1999. Southern California Mountains and Foothills Assessment: Habitat and Species Conservation Issues Gen. Tech. Rep. GTR-PSW-172. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; 402 p.

Storer, T.I. 1930. Notes on the range and lifehistory of the Pacific fresh-water turtle, Clemmys marmorata. University of California Publ. Zool., 32:429-441.

Sweet, S.S. 1991. *Ecology and status of the arroyo toad (Bufo microscaphus californicus) on the Los Padres National Forest of Southern California, with management recommendations*. Prepared for the United States Forest Service, Los Padres National Forest. Goleta, California.

Sweet, S.S. 1993. *Second report on the biology and status of the arroyo toad (Bufo microscaphus californicus) on the Los Padres National Forest of Southern California*. Prepared for the United States Forest Service, Los Padres National Forest. Goleta, California.

Texas Parks and Wildlife Department. 2009. Townsend's Big-eared Bat (*Plecotus townsendii*) http://www.tpwd.state.tx.us/huntwild/wild/species/townsendbigear/. Accessed June 21, 2011.

Texas Tech University. 1997. Western Mastiff Bat. Mammals of Texas. http://www.nsrl.ttu.edu/tmot1/eumopero.htm. Accessed June 21, 2011.

Turner, F.B., P.A. Medica, and R.B. Bury. 1987. *Age-size relationships of desert tortoises (Gopherus agassizii) in southern Nevada*. Copeia 1987(4):974-979.

Unitt, P. 1984. *The Birds of San Diego County,* Memoir 13, San Diego Society of Natural History, 276 pp.

Unitt, P. 2004. San Diego County Bird Atlas. No. 39, San Diego Society Of Natural History. October 31, 2004. 645pp.

Unitt, P, and N. Perretta. 2001. "Focus on the Sharp-Shinned and Cooper's Hawks," *Wrenderings, The Quarterly Newsletter for Bird Atlas Volunteers*, September issue, San Diego Natural History Museum.

URS Corporation. 2007. *San Bernardino County General Plan*. Santa Ana, Ca.

URS Corporation. 2009. *Habitat Restoration Plan for The Calnev Expansion Project, San Bernardino County, California And Clark County, Nevada*. Prepared for Calnev Pipeline, LLC. April 22, 2009.

URS Corporation. 2010a. *Calnev Expansion Project Biological Resources Technical Report, Final*. Prepared for Calnev Pipeline, LLC. November 2010.

URS Corporation. 2010b. *Calnev Expansion Project Biological Assessment*. Prepared for Calnev Pipeline, LLC. November 2010.

URS Corporation. 2010c. *Calnev Expansion Project Biological Assessment Supplement Non-Federal Special Status Species*. Prepared for Calnev Pipeline, LLC. November 2010.

USFS. 2009. Berberis Nevinii modeled and Suitable Habitat Criteria. Supplied by USFS prior to 2009 plant surveys.

USFWS. 1987. Endangered Status for Eriastrum densifolium ssp. sanctorum (Santa Ana River woolly-star) and Centrostegia leptoceras (Slender-horned spineflower) Final Rule (52 FR 187). 6 pp.

United States Fish and Wildlife Service (USFWS). 1991. *Summary of the proposed rule to list the coastal California gnatcatcher (Polioptila californica) as endangered in California and Baja, Mexico*. 114 pp., September.

United States Fish and Wildlife Service (USFWS). 1994. *Recovery Plan for the Desert Tortoise (Mojave Population)*. Prepared for the United States Fish and Wildlife Service, Portland, Oregon. 73 pp. + append.

United States Fish and Wildlife Service (USFWS). 1995. *Programmatic Activities and Conservation Plans in Riparian and Estuarine/Beach Ecosystems on Marine Corps Base, Cam Pendleton*. Biological Opinion (1-6-95-F-02). October.

United States Fish and Wildlife Service (USFWS). 1996. *Interim General Survey Guidelines for the Delhi Sands Flower-loving Fly*. Carlsbad, California. Dated December 30, 1996.

United States Fish and Wildlife Service (USFWS). 1998a. *Draft recovery plan for the least Bell's Vireo*. Portland, Oregon. 139 pp.

United States Fish and Wildlife Service (USFWS). 1998a. Endangered and threatened wildlife and plants; endangered or threatened status for three plants from the chaparral and scrub of southwestern California. Federal Register 63:54956–54971.

United States Fish and Wildlife Service (USFWS). 1998b. Endangered and Threatened Wildlife and Plants; Final Rule to List the San Bernardino Kangaroo Rat as Endangered (63 Federal Register 51005). 13 pp.

United States Fish and Wildlife Service (USFWS). 1999. *Survey Protocol for the Arroyo Toad*.

United States Fish and Wildlife Service (USFWS). 2002. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for the San Bernardino Kangaroo Rat; Final Rule. 50 CFR Part 17. Federal Register. Vol. 67, No. 78. April 23, 2002.

United States Fish and Wildlife Service (USFWS). 2005. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for the Arroyo Toad (50 CFR Part 17). 73 pp.

United States Fish and Wildlife Service (USFWS). 2006. *Least Bell's vireo - five year review.* Carlsbad Office. 25 pp. September.

United States Fish and Wildlife Service (USFWS). 2007. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Coastal California Gnatcatcher (Polioptila californica californica). 50 CFR Part 17 RIN 1018-AV38. U.S. Department of the Interior. Federal Register Vol. 72, No. 243. December 19, 2007.

United States Fish and Wildlife Service (USFWS). 2008. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the San Bernardino Kangaroo Rat; Final Rule (50 CFR Part 17). 68 pp.

United States Fish and Wildlife (USFWS). 2008b. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Berberis nevinii (Nevin's barberry); Final Rule. (50 CFR Part 17, Vol 73, No 30). 28 pp.

United States Fish and Wildlife Service (USFWS). 2009a. Arroyo Toad (Bufo californicus (microscaphus)) 5-Year Review: Summary and Evaluation U.S. Fish and Wildlife Service Ventura Fish and Wildlife Office Ventura, California August 2009.

United States Fish and Wildlife Service (USFWS). 2009b. Eagle Permits; Take Necessary to Protect Interests in Particular Localities; Final Rules. Federal Register. Vol. 74, No. 175. September 11, 2009.

United States Fish and Wildlife Service USFWS. 2009b. Berberis nevinii (Nevin's barberry) 5-Year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. Carlsbad, CA. August 14, 2009.

United States Fish and Wildlife Service (USFWS). 2009c. Desert Tortoise Field Manual. http://www.fws.gov/ventura/species_information/protocols_guidelines/index.html. Accessed December 17, 2010.

United States Fish and Wildlife Service (USFWS). 2011. Migratory Birds and Habitat Programs. Who We Are. http://www.fws.gov/pacific/migratorybirds/who_we_are.htm. Accessed June 22, 2011.

United States Forest Service (USFS). 2001. Modeled habitat GIS layers.

United States Forest Service (USFS). 2005. Southern California National Forests Land Management Plan and Environmental Impact Statement. September 2005.

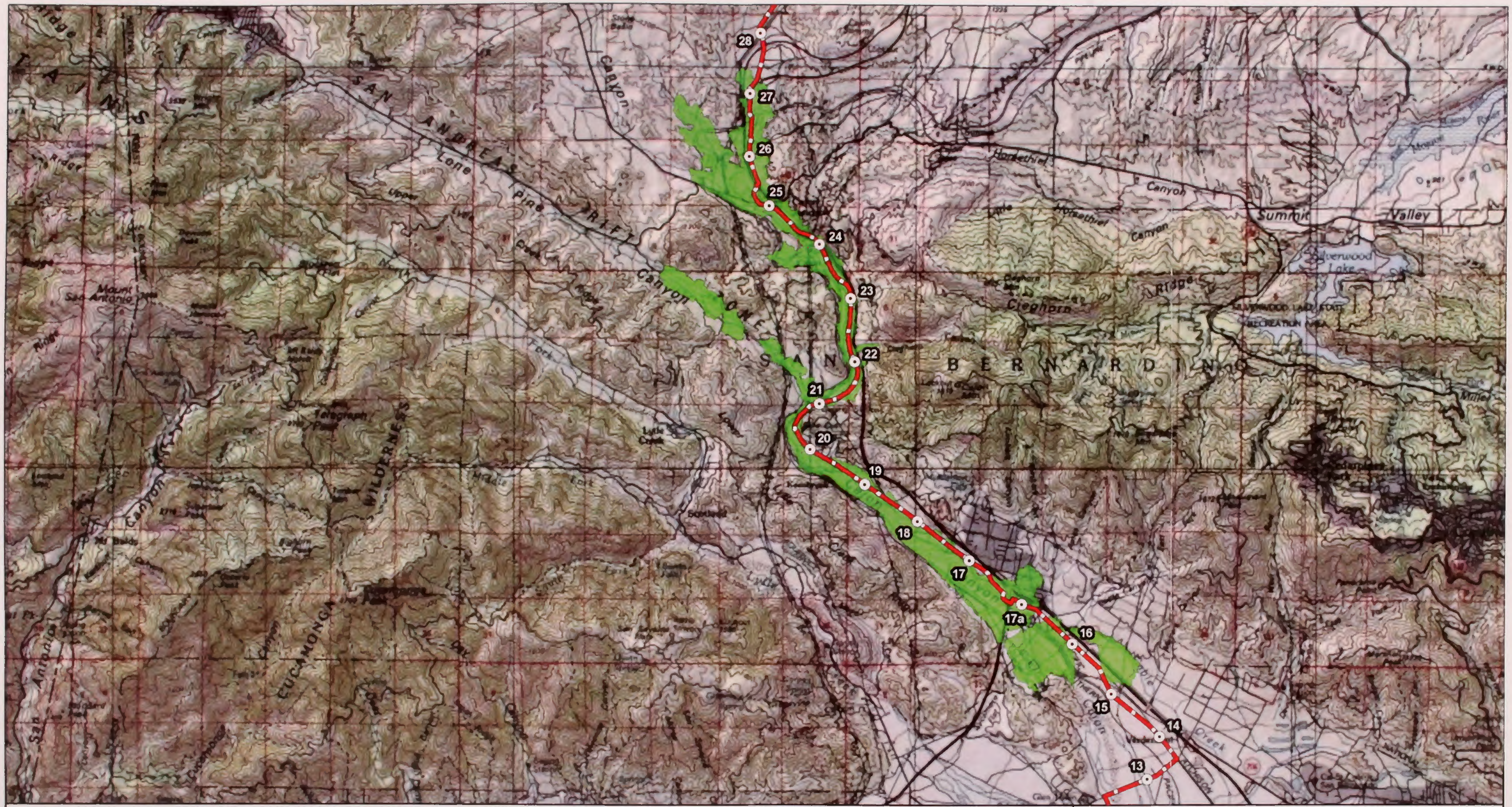
United States Forest Service (USFS). 2008a. Wildlife Reference Maps from the *Ongoing Activities for Riparian Species Biological Assessment*. Cajon and Devore, California Quandrangles. Prepared by USFS for consultation with USFWS.

United States Forest Service (USFS). 2008b. Personal communication with Kathie Meyer.

United States Forest Service (USFS). 2011. Personal communication from Kathie Meyer to Lorenzo Encinas. June 8, 2011.

Zarn, M. 1974. Technical note: habitat management series for unique or endangered species: Report no. 1; burrowing owl (*Speotyto cunicularia hypugaea).* Bureau of Land Management. Denver Service Center, Denver Colorado. 25 pp.

Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1990. California Statewide Wildlife Habitat Relationships System, Volume 2: *Birds*. The Resource Agency, Sacramento, California, 732 pp.



Legend

⊙ Milepost

Proposed Route

🟩 USFS Modeled Habitat for Arroyo Toad

FIGURE 3.7-1
USFS MODELED HABITAT FOR ARROYO TOAD

N

0 0.75 1.5 Miles

Locations of project components are approximate
Mile Post 54 has been removed due to route change

SOURCE:
ESRI 2008
USFWS 2009

E:\GIS\CalNev_Pipeline\MXDs\Arroya_Toad.mxd
Date: June 27, 2011

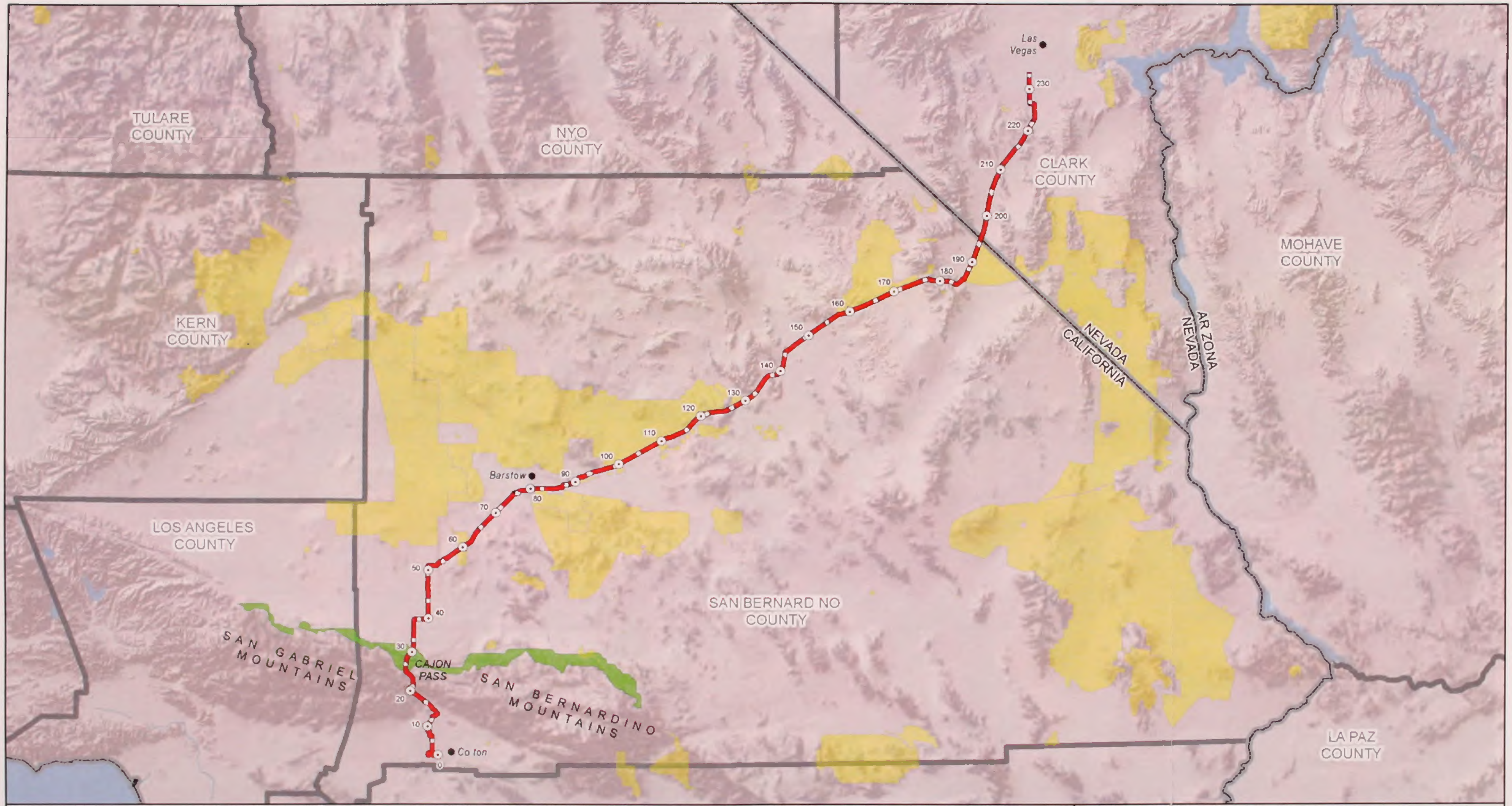
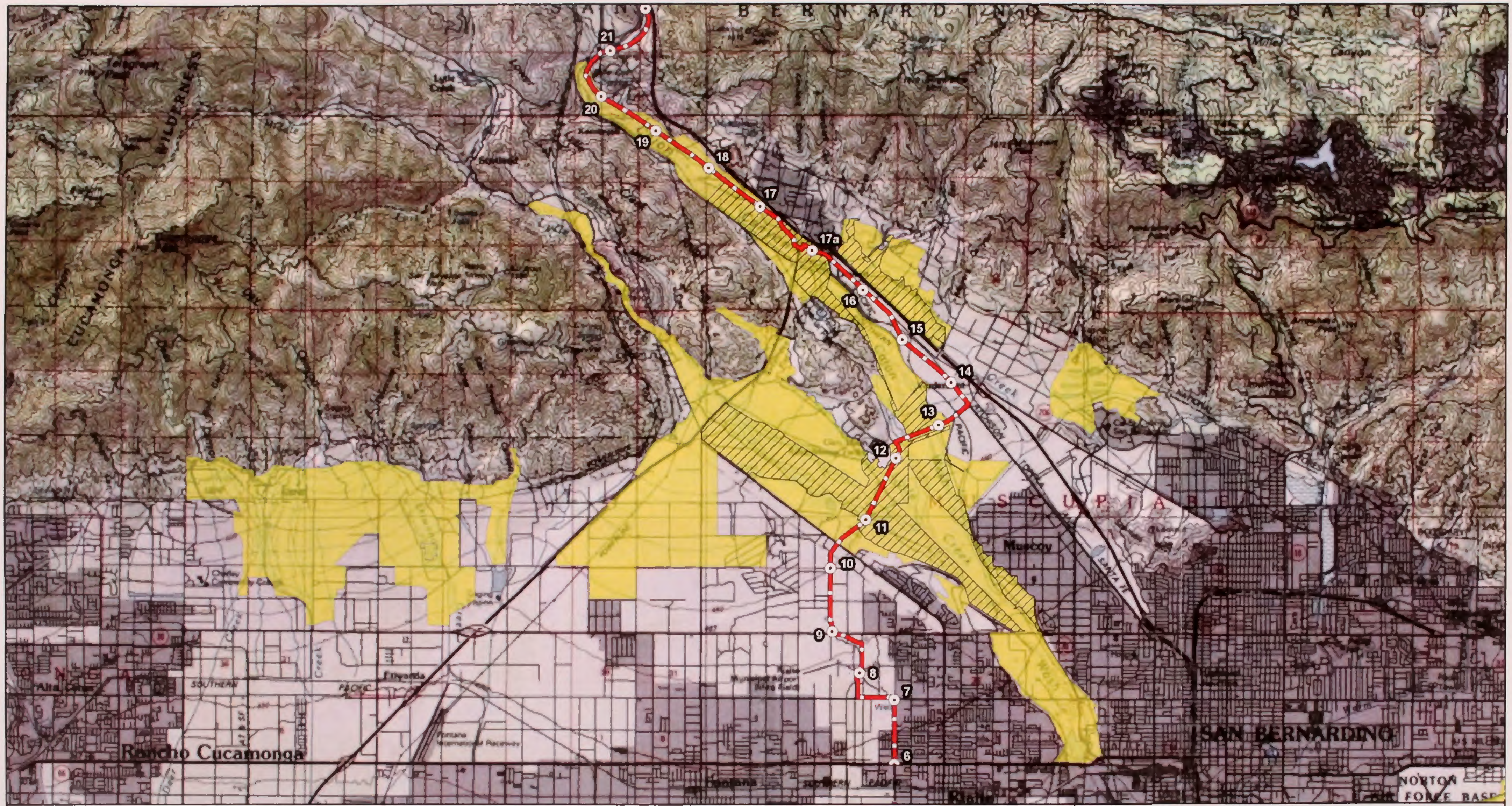


FIGURE 3.7-2: DESIGNATED CRITICAL HABITAT AND USFS MODELED HABITAT FOR DESERT TORTOISE

Locations of project components are approximate
Mile Post 54 has been removed due to route change

SOURCE:
ESRI 2008
USFS 2009
USFWS 2010

E:\GIS\CalNev_Pipeline\MXDs\Desert_Tortoise.mxd
June 27, 2011



Legend

- ⊙ Proposed_Alignment_mileposts
- ▬ Applicant's Alignment Evaluated
- 🟨 2002 Designated Critical Habitat for the San Bernardino Kangaroo Rat
- ▨ 2008 Designated Critical Habitat for the San Bernardino Kangaroo Rat

FIGURE 3.7-3: 2002 AND 2008 DESIGNATED CRITICAL HABITAT FOR THE SAN BERNARDINO KANGAROO RAT

N

0 0.75 1.5 Miles

Locations of project components are approximate
Mile Post 54 has been removed due to route change

SOURCE:
ESRI 2008
USFWS 2002, 2008

E:\GIS\CalNev_Pipeline\MXDs\SBKR.mxd
Date: June 28, 2011

3.8 Cultural Resources

This section describes cultural resources located within the area of potential effects (APE) for the Calnev Pipeline Expansion Project (hereafter, the Proposed Project). The locations of Proposed Project facilities, including pipeline right-of-way (ROW), access roads, aboveground facilities, extra workspaces, and staging areas are shown in Chapter 2. Chapter 2 also includes a description of construction, operation, and maintenance techniques used for the Proposed Project as well as a detailed discussion of alternatives.

3.8.1 Affected Environment

3.8.1.1 Background and Context

Prehistoric

The first people to enter the Great Basin and its vicinity arrived at least 12,000 years ago, at the end of the Pleistocene during the Paleo-Indian period. Since then, the Mojave Desert has supported a long and occasionally dense human population. Archaeological sites including villages and camps, burials, rock features, and rock art contain evidence of this prehistoric use of the Mojave Desert.

The Paleo-Indian tool assemblages coincide approximately with the transition from the Pleistocene to the Holocene around 12,000 to 8,000 years ago. Fluted points are considered a Paleo-Indian type tool in North America. At least 5 sites near Cajon Pass have yielded fluted points (Sutton et al. 2007 in URS Corporation 2009a). Other tools in the Paleo-Indian assemblage include scrapers, burins, awls, and choppers.

Climate changes around 8,000 brought changes in the archaeological record. Relatively few archaeological sites dating between 8,000 and 5,000 years ago are recorded in the Mojave Desert. The Archaic adaptations 8,000 to 1,500 years ago are characterized by increased use of plant foods and a much wider variety of animals. Distinctive point types characterize this period. Other diagnostic items include flaked stone crescents, abundant bifaces, and a variety of large well-made scrapers, gravers, perforators, core tools, and groundstone implements. Newberry Cave, several miles west of Barstow, is a Archaic site characterized by a wide range of artifacts including split-twig figurines, pendants, sinew-wrapped feathers, dart shafts, projectile points, and rock art.

The Late Archaic in southern Nevada was influenced by the development of the agriculturally-focused Anasazi, located to the east. Trade routes following the Mojave River are thought to have linked Nevada to the California Coast, and Anasazi pottery has been found as far west as the Cronese Basin (Larson1981and Rogers 1929 in WSA 2009a). A significant technological change in the Late Archaic was the introduction of the bow and arrow.

Between 1,000 and about 800 years ago the ethnic and linguistic patterns in the Mojave Desert became more complex. One of the major developments during the Late Prehistoric period was the apparent expansion of Shoshonean groups throughout much of the Great Basin. Artifact assemblages from the Late Prehistoric are different from earlier ones. Milling implements are more frequent, and ceramics are more common and reflect a variety of origins. The wide-spread use of the bow and arrow is in evidence based on smaller projectile points such as the Desert Side-notched and Cottonwood Triangular.

Ethnographic

At the time of European contact, the Project area was inhabited by several documented aboriginal groups, primarily the Las Vegas band of Southern Paiute, Serrano, the Chemehuevi, and Vanyume peoples. Other groups may have also crossed into the Proposed Project area including the Kawaiisu, the Kitanemuk, the Mohave, the Cahuilla, and various Puebloan Indians. All groups the in the area maintained flexible settlement patterns based on the availability of resources. The desert, including the Project area, was generally not conducive to large-scale habitation. The groups living and /or traveling through the area typically would have been small, nomadic bands.

The Southern Paiute is a general term used to describe a collection of at least 16 tribes, each of which retained separate and distinct cultural characteristics, traditions and practices (Kelly and Fowler 1986). In Nevada the pipeline traverses the area identified by Kelly (1934) as being inhabited by the Las Vegas band of the Southern Paiute. Another Southern Paiute band in the eastern Mojave is the Chemehuevi. Southern Paiute camps were located in dunes along rivers, and in higher elevations near streams, in caves and rockshelters. As with many other Native American groups, the Southern Paiute place an emphasis on dreams. Shamans received their healing power through dreams. Southern Paiute groups possess a rich oral tradition.

The Serrano territory included the San Bernardino Mountains, including the Cajon Pass, as well as the desert area that lies immediately south of Victorville. The Serrano had multiple settlement types, ranging from seasonal camps to larger more permanent villages. In addition to domed habitation structures made of willow and tule thatching, the Serrano built large ceremonial structures and granaries. A small pox epidemic in the mid-1800s decimated the Serrano population. To the north of the Serrano, lies the territory of the Vanyume, who are often addressed as a part of the larger Serrano group with whom they shared linguistic affiliation (Bean and Smith 1978). Relatively little is known about the Vanyume. The Vanyume are generally associated with lifeways similar to the Serrano (Yohe II and Sutton 1991).

Native American reservations were created in the early 1870s under the United States Grant Policy. Many Native Americans now reside off reservation, as well as on small reservations and other tribal lands throughout Utah, Arizona, California, and Nevada.

Historic

The Spanish period in the desert southwest refers to the time of early exploration by the Spanish from about 1540 to 1821. This period in the Mojave Desert region is categorized by Spanish exploration and early settlement. Often using Native American trails, these travelers established historic travel routes, such as the Old Spanish Trail, and opened up new territories. During this period, no permanent European settlements were founded in the Project area. It was during this period, however, that Spanish Missions were established along the California coast and many coastal Native Americans escaped the mission system by moving eastward into Southern California's deserts.

Between 1834 and 1853, sponsored United States exploration resulted in new trade networks, such as the Santa Fe Trail which provided an overland route between Santa Fe and Los Angeles. From about 1844 to 1859 other overland routes, such as the Old Spanish Trail and the Mormon Road provided travel routes to California for emigrants and, in the case of the Mormon Road, sheep drives. In contrast to the Old Spanish Trail which was for travel by foot and pack animals, the Mormon road also allowed for wagon/freight travel.

Since the early 1860s, mining has been the most important commercial industry in the Mojave Desert. The period between 1900 and 1919 was called the "the Great Years" for mining in northeastern San Bernardino County (King and Casebier 1976). Evidence of mining activities can be found throughout the Mojave Desert. Sometimes the evidence is highly visible such as shafts and mining towns. Other remnants are more subtle and consist of prospects, spoil piles, and rock cairns.

Congress mandated the construction of a transcontinental railroad in 1866 (Moon 1980). During the 1860s, several other railroad companies also attempted to construct railroads from the east coast to Southern California. The Southern Pacific Railroad Company completed a line across the Mojave Desert to Needles in 1883. The route passing through the Mojave Desert and the towns of Barstow, Victorville, and Baker remained a popular line for both freight and recreational travel. The railroad was the main employer in many of the desert cities for years. In 1996, the Southern Pacific merged with Union Pacific. Another successful rail company was the Atchison, Topeka & Santa Fe Railroad (AT&SF). The AT&SF, through its subsidiaries, built a series of branch lines in Southern California, including one through Cajon Pass constructed in 1880s. Starting in 1885, the Harvey House in Barstow provided a welcome stop for rail travelers in Barstow. The building was placed on the National Register of Historic Places (NRHP) in 1975. The building now houses City offices, a railroad museum, and a Route 66 museum. The rail line still links Southern California with the Mojave Desert.

Historic Route 66, one of the main arteries of the National Highway System, first started in the 1920s. Historic Route 66 was one of the first great highways in the United States that went from Chicago to the Pacific Ocean. Route 66 and its precursor the National Old Trails Highway crosses or parallels the Project in a number of locations, including through Cajon Pass. Thousands of businesses opened along Historic Route 66, mostly serving cross-country travelers. During the Great Depression, many of these roadside businesses failed. Property types associated with Route 66 are discussed in recent historic contexts (Bischoff 2005, Cassity 2004). A few businesses associated with Route 66, such as the Wigwam Motel in San Bernardino and the El Rancho Hotel in Barstow, are still in operation. During the war, military use of the road grew, especially associated with the military training bases in the Mojave Desert up until construction of Interstate 40.

In 1956, the Federal Aid Highway Act provided funding to upgrade America's roads. In 1958, as a result of the Act, Interstate 15 opened between Victorville and Barstow. Interstate 15 passes through Cajon Pass between San Bernardino and San Gabriel mountain ranges, and is one of the only passable areas connecting Southern California with the rest of the United States to the east. The portion of Interstate 15 that goes through the Mojave Desert and the Cajon Pass parallels Historic Route 66.

Historic period and modern infrastructure supporting growing populations and metropolitan centers in Arizona, California, Nevada and Utah includes a network of transmission and communication line structures in the Cajon Pass, across eastern California and into southern Nevada. Many of these structures remain in the vicinity of the Proposed Project, including Southern Sierra Transmission line and the Old Boulder line, the first transmission line bringing electricity from Boulder Dam to Los Angeles.

3.8.1.2 Cultural Resources Identified in the Project Area of Potential Effects (APE)

In general, a cultural resource is an object or definite location of human activity, occupation, use identifiable through field inventory, historical documentation, or oral evidence. Cultural resources are prehistoric, historic, archaeological, or architectural sites, structures, buildings, places, or objects and locations of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources include the entire spectrum of objects and places, from artifacts to cultural landscapes, without regard to significance or eligibility for inclusion on the NRHP to the California Register of Historical Resources (CRHR).

Cultural resources that are included in, or eligible for inclusion in, the NRHP maintained by the Secretary of Interior and per the NRHP eligibility criteria at 36 Code of Federal Regulations (CFR) 60.4 are identified by regulations as *historic properties*[1]. *Historic properties* may include any prehistoric or historic district sites, building structure, traditional cultural property, or object. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization that meet the NRHP criteria. The term “eligible for inclusion on the NRHP” refers both to properties formally determined as such in accordance with regulations of the Secretary of the Interior and all other properties that meet the NRHP criteria.

For the purpose of compliance with the California Environmental Quality Act of 1970, as amended (CEQA), limited to that portion of the Proposed Project in California, the discussion of cultural resources in the Project APE includes a subset of cultural resources identified by California regulations as historical resources. Cultural resources that meet the criteria CRHR as provided at California Code of Regulations Title 14, Chapter 11.5, Section 4850 are identified by the regulations as *historical resources*. *Historical resources* may include, but are not limited to, any object, building, structure, site, area, place record, or manuscript that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. *Historical resources* are specific to cultural resources located in the State of California. *Historical resources* also include historic districts, NRHP-listed or NRHP-eligible historic properties, State Historical Landmarks, and California Points of Interest (California Office of Historic Preservation [OHP] 2001, California OHP 2006).

Implementing regulations for Section 106 of the National Historic Preservation Act (NHPA) define the APE as the geographic area or areas within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties (36 Code of Federal Regulations [CFR] § 800 16(d)). The APE and level of effort for identification may vary depending on the nature and extent of the project and may be different for the types of cultural resources that may be affected. The APE for direct effects is generally associated with the

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[1] Guidance on eligibility for the National Register of Historic Places is provided at 36 CFR 60.4, and in the National Park Service's National Register Bulletin, Number 15, *How to Apply the National Register Criteria for Evaluation.* Different types of values embodied in districts, sites, buildings, structures, and objects are recognized. These values fall into the following categories and are similarly evaluated for purposes of the California Register of Historical Resources:

1. Associative Values (Criteria A and B): Properties significant for their association with or linkage to events (Criterion A) or persons (Criterion B) important in our past.
2. Design or Construction Value (Criterion C): Properties significant as representatives of the man-made expression of culture or technology.
3. Information Values (Criterion D): Properties significant for their ability to yield important information about prehistory or history.

Proposed Project construction footprint and the area where direct construction impacts would occur. The APE for indirect effects is generally associated with a larger area including and surrounding the direct APE, wherein indirect impacts (visible, atmospheric, or audible) on historic properties and/or historical resources may occur.

The APE for direct effects is described as the proposed pipeline (Applicant-proposed and alternatives), cut and fill areas, aboveground facilities (pumping stations), and ancillary facilities such as access roads (including new access roads or existing access roads that need widening or other improvement [such as grading, gravel or paving]), staging areas, pipeline laydown areas, rights-of-way acquisition areas, and any additional temporary workspace such as that needed for, but not limited to, horizontal directional drilling (HDD) or at road, railroad, utility and water body crossings. The horizontal extent of the direct APE consisted of a 250-foot-wide area centered on the pipeline (i.e., 125 feet on either side of the proposed centerline of the pipeline); for access roads, the APE consists of the access roads and a surrounding 50-foot buffer; and for staging areas, the boundaries of the staging areas and a surrounding 100-foot buffer (URS Corporation [URS]) 2009a and 2009b; WSA 2009a, 2009b, and 2010). The vertical extent of the direct APE is an area to a depth of at least 6 feet below ground surface for the majority of the Project (URS Corporation2009a).

For HDD locations, the APE included the footprint temporary workspace areas. Additionally, in Nevada, the APE includes four aboveground facilities (WSA 2009b). The APE for indirect effects also included additional areas where historic properties may be impacted by visual, atmospheric, and audible effects and changes to historic integrity aspects of setting, feeling, and association (URS Corporation 2009b). "In areas where the Proposed Project would be underground and/or adjacent to the existing 8-inch and 14-inch diameter pipelines, the indirect APE generally did not consider properties set far back from the edge/boundary of their parcels (e.g., shopping center, large rural property) – only the front row of structures are included in the architectural survey areas; properties elevated high above the alignment atop a deep valley or cut; and properties separated from the Proposed Project by frontage roads or large retaining/sound barrier walls. Very large linear [cultural resources] were not identified or evaluated beyond the area reasonably subject to effect by the Proposed Project. Rather, the identification and evaluation of these complex linear [resources] within the APE considered whether the segment in the APE would be a" [contributing or non-contributing element to the larger resource] as a whole (should that larger resource ever be determined eligible for inclusion in the NRHP and in California, the CRHR and considered a historic property/historical resource for purposes of compliance with National Environmental Policy Act [NEPA] or California Environmental Quality Act [CEQA], respectively) (URS Corporation 2009b: ES-2).

3.8.1.3 Summary of Cultural Resources Identification Efforts

Public Scoping and Tribal Consultation

During the scoping period, meetings were conducted with the public and government agencies to identify issues and concerns. Written comments on the Proposed Project were also received during the scoping period. No cultural resources of concern within the APE were identified during scoping.

Letters describing the Proposed Project were sent to historical societies in and around the APE (URS Corporation 2009a). One response was received from the Rialto Historical Society. They expressed concerns about the overall Proposed Project and the effects on the residents of Rialto, including what was reported to be the last orange grove in the city.

The Native American Heritage Commission (NAHC) maintains two databases to assist in identifying cultural resources of concern to California Native Americans. The NAHC's Sacred Land database has records for places and objects that Native Americans consider sacred or otherwise important, such as cemeteries and gathering places for traditional foods and materials. The NAHC Contacts database has the names and contact information of Native Americans who have expressed interest in being contacted about development projects in specified areas. The NAHC was asked to search its Sacred Land Files for any places of traditional importance to Native Americans and to request a list of Native American who wished to be informed about new development projects in San Bernardino and Riverside counties.

In addition to the contacts made pursuant to information requested form the NAHC, the Bureau of Land Management (BLM) Barstow Field Office initiated formal government-to government consultation with Indian tribes pursuant to the NHPA as well as other laws and regulations. This consultation was initiated with a letter sent on March 7, 2008 (USR Corporation 2009a: Appendix G). The 15 tribes notified and invited to consult on this project are listed below:

Agua Caliente Band of Cahuilla Indians
Chemehuevi Indian Tribe
Colorado River Indian Tribes
Fort Mojave Indian Tribe
The Kawaiisu Tribe
Kern Valley Indian Council
Las Vegas Paiute
Moapa Band of Paiutes
Morongo Band of Mission Indians
Pahrump Paiute Tribe
San Manuel Band of Mission Indians
Serrano Band of Indians
Soboba Bans of Mission Indians
Timbisha Shoshone Tribe
Twentynine Palms Bans of Mission Indians

Consultation with the above listed tribes is on-going, but to date no cultural resources to which the tribes attach religious or cultural significance have been identified within the APE.

One response to the consultation letters has been received. The Colorado River Indian Tribes (CRIT) of the Colorado River Indian Reservation, Arizona and California, agreed with BLM findings. However, the CRIT reserved the right to intervene if new or omitted historic or cultural information becomes available that is related to the Proposed Project (USR Corporation 2009a: Appendix G).

Literature Review and Records Search

Records search were conducted at the San Bernardino Archaeological Information Center, and the Southern Nevada Archaeological Archive at the Harry Reid Center for Environmental Studies and through the Nevada Cultural resources Information System (NVCRIS) database. Archival research was also conducted at the Barstow, Ely, and Las Vegas BLM Field Offices, San Bernardino National Forest, San Bernardino Historical Society, the NRHP on-line database, the on-line database for California Historical landmarks. Map sources included Government Land Office maps, mining atlases, historic plat maps, pre-1950 United States Geological Survey (USGS) maps, the "Nevada in Maps" on-line collection, and a 1893 map form the Library of Congress American Memory website.

The records searches indicated that 168 previous studies have been conducted in the records search limits in California and 293 in Nevada. The surveys are largely investigations for proposed infrastructure and land transfers, and include linear and parcel surveys of varying sizes.

Previously recorded cultural resources in the 2-mile-wide records search area total 1,072 in California (URS Corporation 2009a; WSA 2010) and 143 in Nevada (WSA 2009a). Of these, 67 sites were reported in the Project APE in California and 9 in Nevada. Resources types include residential and commercial buildings, transmission lines, railroads and railroad-related sites, roads, historic period refuse deposits, trails, lithic scatters, camp sites, hearths/roasting pits, and rock art.

Although a number of these resources have not been previously evaluated, there are two NRHP archaeological districts, the Crowder Canyon Archaeological District (NRHP-L-76-514) and the Sidewinder Quarry Archaeological District (P36-020375) reported in California. Other resources determined NRHP-eligible include a church (P36-017601), railroads (CA-SBR-6793H, CA-SBR-10,330H, 26CK5414, 26CK5685), historic roads (CA-SBR-2910H, 26CK4958), the Mormon Trail (CA-SBR-4411H), the Salt Lake Santa Fe Trail/Old Spanish Trail (CA-SBR-4272H), Daggett Ditch (CA-SBR-7883H), Roach Station (26CK2216), Borax Siding (26CK5766), transmission lines (CA-SBR-7694H, CA-SBR-10,315H, CA-SBR-10,316H, 26CK5180, 26CK6237, 26CK6238, 26CK6242), two prehistoric archaeological camp sites (CA-SBR-3694, CA-SBR-6017), and prehistoric quarry/reduction areas (CA-SBR-3694, CA-SBR-7200). Several other resources have been found eligible for the CRHR and /or are California Historic Landmarks: Mojave Trail/Road (CA-SBR-3033H/CHL-577, 963), Mormon/Santa Fe Trail Plaque (CA-SBR-4272H/CHL-576), Von Schmidt Line (CA-SBR-6835H/CHL-859), and Sycamore Grove, Mormon camp site (P36-18058/CHL 573).

Cultural Resources Survey and Inventory

Surveys to identify cultural resources located within the APE for the Proposed Project are described in the following documents. The results are summarized in the NEPA/CEQA analysis and form the basis for consultation pursuant to section 106 of the NHPA. Results of the surveys are segregated by State.

- *Volume I Proposed Calnev Expansion Project: Summary of the San Bernardino County, California and Clark County, Nevada Portions (Draft Report)* (URS Corporation 2008), summarizing the results of the BLM Class III cultural resources survey for the Project;
- *Proposed Calnev Expansion Project: California Portion, San Bernardino County, California Architectural History Survey* (URS Corporation 2009a), summarizing the results of the architectural survey of the California portion of the Project;
- *Volume II Proposed Calnev Expansion Project: California Portion, San Bernardino County, California* (URS Corporation 2009b), summarizing the results of the BLM Class III cultural resources survey for archaeological resources along the California portion of the Project;
- *Class III Cultural Resources Survey, Calnev Expansion Project, California State Line to Las Vegas, NV, Clark County, Nevada (Final Report)* (WSA 2009a);
- *Architectural Survey Report, Calnev Expansion Project, California State Line to Las Vegas, NV, Clark County, Nevada (Final Report)* (WSA 2009b); and

- *Class III Cultural Resources Survey Addendum for the Proposed Calnev Expansion Project, California Portion, San Bernardino, California* (WSA 2010).

Survey Results for Cultural Resources in California

URS conducted a BLM Class III Cultural Resources Survey (USR Corporation 2009a) and architectural survey (USR 2009b) of the APE in California. In 2010, WSA conducted a supplemental BLM Class I/III Cultural Resources Survey in California (WSA 2010). As a result of the literature search and surveys, a total of 234 cultural resources were identified in the APE (Self 2011). Twenty-three (23) of the sites identified in the literatures search were not relocated during the field survey. The cultural resource inventory in California consists of 150 archaeological resources (URS Corporation 2009a; WSA 2010) and 61 architectural resources (URS Corporation 2009b). Twenty-one (21) of the archaeological resources are isolated finds. Descriptions of the cultural resources identified in the California portion of the Proposed Project are discussed below. Impacts on these cultural resources are discussed in Section 3.8.4 followed by a summary of mitigations measures introduced to avoid or reduce impacts resulting from the Project.

Archaeological Resources

Of the 211cultural resources identified during the BLM Class III Cultural Resources Surveys within the California APE, 150 are archaeological resources. Of these 150 archaeological resources, 21 are isolated finds, 1 is a district, and 128 are sites (Table 8.3-1). The isolated finds are all prehistoric artifacts and include flaked lithics, groundstone, and ceramics. Sidewinder Archaeological District (P36-020375) is comprised of multiple sites and loci based on lithic reduction, as well as a network of trails. The most of the sites in the district are associated with lithic procurement. The 128 sites include historic period debris scatters, trails, lithic scatters, lithic reduction areas, petroglyphs, and habitation areas.

Table 3.8-1 Cultural Resources

Resource Number	Alternate Resource Number	Site/ Isolate/ Multi-component	Historic/ Prehistoric	Description
CA-SBR-223	-	Site	P	Artifact Scatter: Lithics
CA-SBR-541	-	Site	P	Lithic Quarry
CA-SBR-827*	-	Site	P	Prehistoric Agave Roasting Pit
CA-SBR-828*	-	Site	P	Prehistoric Roasting Pit
CA-SBR-1068	-	Site	P	Aboriginal Trail
CA-SBR-1910H	-	Site	H	Railroad
CA-SBR-2131	-	Site	P	Artifact Scatter: Lithics
CA-SBR-2340H	-	Site	H	Railroad Bed
CA-SBR-2392	-	Site	P	Campsite
CA-SBR-2535/ CA-SBR-2528	P2272-2 / CA-SBR-2528 / CA-SBR-2529	Site	P	Petroglyphs and Lithic Scatter
CA-SBR-2734	-	Site	P	Campsite
CA-SBR-2910H	NRHP-E-OHP-3926	Site	H	Road

Table 3.8-1 Cultural Resources

Resource Number	Alternate Resource Number	Site/ Isolate/ Multi-component	Historic/ Prehistoric	Description
CA-SBR-3033/H	CHL-577/CHL-576/CHL-963	Site	M	Mojave Trail/Road
CA-SBR-3048H	-	Site	H	Road
CA-SBR-3069H	-	Site	H	Road
CA-SBR-3694	NRHP-E-[80-1]	Site	M	Lithic Reduction Area; Historic Trash Scatter
CA-SBR-3731*	-	Site	P	Lithic Scatter
CA-SBR-4037	Recorded by URS as part of CA-SBR-6757	Site	P	Lithic Quarry
CA-SBR-4055	Recorded by URS as part of CA-SBR-6757	Site	P	Lithic Quarry
CA-SBR-4198	-	Site	P	Habitation Site
CA-SBR-4252H	-	Site	H	Section Line Road
CA-SBR-4268H*	-	Site	H	Road
CA-SBR-4271H	-	Site	H	Road
CA-SBR-4272H	CHL-576	Site	H	Mormon/Santa Fe Trail Plaque
CA-SBR-4411H	CHL-577	Site	H	Mormon Trail Monument
CA-SBR-5351*	-	Site	P	Prehistoric Lithic and Ceramic Scatter, Possible Hearth
CA-SBR-5568/H*	-	Site	M	Artifact Scatter: Lithics
CA-SBR-5732H	PSBR-64H	Site	H	Canal
CA-SBR-6017	NRHP-E-OHP-408	Site	P	Habitation Site
CA-SBR-6109H*	-	Site	H	Irrigation Ditch ("Old Zanja")
CA-SBR-6110H	-	Site	H	Stone and Mortar Ditch
CA-SBR-6117*	-	Site	P	Lithic Scatter
CA-SBR-6506*	-	Site	P	Lithic Scatter
CA-SBR-6693H	-	Site	H	Atchison, Topeka & Santa Fe Railroad, Associated Historic Artifact Scatter
CA-SBR-6699H	-	Site	H	Fontana Powerhouse, Includes Grounds, Outbuildings, Intake, Penstock and Outflow Conduits
CA-SBR-6708H*	-	Site	H	Ditch System (diversion box, ditches, outlet gates)
CA-SBR-6757	-	Site	P	Lithic Reduction Area
CA-SBR-6793H	NRHP-E-PHP-3926	Site	H	Railroad
CA-SBR-6835H	CHL-859	Site	H	Von Schmidt Line Monument
CA-SBR-6847H*	-	Site	H	Railroad Bed
CA-SBR-6868H	-	Site	H	Trash Scatter
CA-SBR-7091H*	-	Site	H	Cistern with Associated Artifact Scatter
CA-SBR-7093H	-	Site	H	Bridge and Trestle

Table 3.8-1 Cultural Resources

Resource Number	Alternate Resource Number	Site/ Isolate/ Multi-component	Historic/ Prehistoric	Description
CA-SBR-7200	Formerly part of CA-SBR-562	Site	P	Artifact Scatter: Lithics; Quarry
CA-SBR-7258*		Site	P	Aboriginal Trail
CA-SBR-7295H		Site	H	Bridge
CA-SBR-7309*		Site	P	Lithic Scatter
CA-SBR-7364H		Site	H	Trash Scatter
CA-SBR-7371*		Site	P	Cleared Areas
CA-SBR-7545H		Site	H	Road
CA-SBR-7689H		Site	H	Road
CA-SBR-7694H	NRHP-E-94-001/P-36-007694/CNX-31	Site	H	Transmission Lines (Boulder Transmission Lines 1, 2, 3)
CA-SBR-7883H		Site	H	Irrigation Canal
CA-SBR-8082H		Site	H	Road
CA-SBR-8127H		Site	H	Historic Artifact Scatter
CA-SBR-8128H		Site	H	Homestead
CA-SBR-8131H		Site	H	Historic Artifact Scatter
CA-SBR-8132H		Site	H	Transmission Line
CA-SBR-8133H		Site	H	Wood Drainage Ditch and Cement Retaining Wall
CA-SBR-8153H		Site	H	Trash Scatter
CA-SBR-8542H	CPHI-SBR-115	Site	H	Bloomington Garage
CA-SBR-8544H		Site	H	Historic Artifact Scatter
CA-SBR-8857H		Site	H	Three Sets of Transmission Lines
CA-SBR-8927H		Site	H	Trash Scatter
CA-SBR-9360H		Site	H	Road
CA-SBR-9361H		Site	H	Wagon Road
CA-SBR-10,148	-	Site	H	Trash Scatter
CA-SBR-10,285H	-	Site	H	Foundations and associated Artifact Scatter
CA-SBR-10,315H	NRHP-E-94-030	Site	H	Transmission Line
CA-SBR-10,316H	NRHP-E-93-007	Site	H	Transmission Line
CA-SBR-10,317H		Site	H	Transmission Line
CA-SBR-10,318H		Site	H	Transmission Line
CA-SBR-10,330H		Site	H	Railroad
CA-SBR-10,504H		Site	H	Fenceline
CA-SBR-10,628H		Site	H	Railroad Roundhouse and Industrial Complex
CA-SBR-10,629H		Site	H	Trash Scatter
CA-SBR-10,630H		Site	H	Trash Scatter
CA-SBR-10,802H		Site	H	Wagon Road

Table 3.8-1 Cultural Resources

Resource Number	Alternate Resource Number	Site/ Isolate/ Multi-component	Historic/ Prehistoric	Description
CA-SBR-12,618H	P36-013632	Site	H	Can Scatter
CA-SBR-12,988H	P36-014509	Site	H	Structural Remains
CA-SBR-13,352H	P36-020724	Site	H	Road
CA-SBR-13,822	P36-021516 / JBP-10	Site	P	Lithic Scatter
CA-SBR-13,823/H	P36-021517 / JBP-12/H	Site	M	Lithic Scatter; Trash Scatter
CA-SBR-13,824H	P36-021518 / JBP-21H	Site	H	Trash Scatters
CA-SBR-13,825	P36-021519 / JBP-22/23	Site	P	Lithic Scatter
CA-SBR-13,826/H	P36-021520 / JBP-24/H	Site	P	Lithic Scatter; Trash Scatter
CA-SBR-13,827	P36-021521 / JBP-25	Site	P	Habitation Debris
CA-SBR-13,828H	P36-021522 / JBP-28H	Site	H	Foundations; Dumps
CA-SBR-13,829	P36-021523 / JBP-29	Site	P	Milling Features
CA-SBR-13,830H	P36-021524 / JBP-31H	Site	H	Trash Scatters
CA-SBR-13,831H	P36-021525 / JBP-33H	Site	H	Foundations; Trash Scatters
CA-SBR-13,832H	P36-021526 / JBP-37H	Site	H	Trash Scatters; Mine
CA-SBR-13,833H	P36-021527 / JBP-38H	Site	H	Dumps
CA-SBR-13,834	P36-021528 / JBP-39	Site	P	Lithic Scatter
CA-SBR-13,835H	P36-021529 / JBP-41H	Site	H	Trash Scatter
CA-SBR-13,836	P36-021530 / JBP-44	Site	P	Hearths; Habitation Debris
CA-SBR-13,838H	P36-021532 / JMK-02H	Site	H	Trash scatters; Walls
CA-SBR-13,839	P36-021533 / JWD-06/H	Site	M	Cairn; Trails
CA-SBR-13,840H	P36-021534 / JWD-07H	Site	H	Dumps
CA-SBR-13,841H	P36-021535 / JWD-08H	Site	H	Trash scatter
CA-SBR-13,842H	P36-021536 / JWD-09H	Site	H	Trash scatter
CA-SBR-13,843H	P36-021537 / JWD-10H	Site	H	Trash scatter
CA-SBR-13,844H	P36-021538 / JWD-11H	Site	H	Trash scatter
CA-SBR-13,845H	P36-021539 / JWD-12H	Site	H	Trash scatter

Table 3.8-1 Cultural Resources

Resource Number	Alternate Resource Number	Site/ Isolate/ Multi-component	Historic/ Prehistoric	Description
CA-SBR-13,846H	P36-021540 / JWD-13H	Site	H	Trash scatter
CA-SBR-13,847	P36-021541 / JWD-14	Site	P	Lithic scatter
CA-SBR-13,848H	P36-021542 JWD-15H	Site	H	Foundations; Trash scatter
CA-SBR-13,849	P36-021543 / RAN-03	Site	P	Lithic scatter
CA-SBR-13,850H	P36-021544 / RAN-08H	Site	H	Trash scatter
CA-SBR-13,852H	P36-021546 / RAN-11H	Site	H	Dump
CA-SBR-13,854H	P36-021548 / RAN-13H	Site	H	Dump
CA-SBR-13,855	P36-021549 / RAN-14	Site	P	Hearths/Pits
CA-SBR-13,856H	P36-021550 / RAN-15H	Site	H	Trash Scatter
CA-SBR-13,857H	P36-021551 / RAN-16H	Site	H	Trash Scatter
CA-SBR-13,858H	P36-021552 / RAN-17H	Site	H	Trash Scatter
CA-SBR-13,859	P36-021553 / RAN-18	Site	P	Lithic Scatter
CA-SBR-13,860H	P36-021554 / RAN-21H	Site	H	Trash Scatter
CA-SBR-13,861H	P36-021555 / RAN-23H	Site	H	Trash Scatters; Wells/Cisterns; Standing Structure
CA-SBR-13,862H	P36-021556 / RAN-35H	Site	H	Trash Scatter
CA-SBR-13,863H	P36-021558 / RAN-38H	Site	H	Trash Scatter
CA-SBR-13,864H	P36-021559 / RAN-39H	Site	H	Trash Scatter
CA-SBR-13,865H	P36-021560 / RAN-40H	Site	H	Trash Scatter
CA-SBR-13,867H	P36-021562 / RAN-42H	Site	H	Trash Scatter
CA-SBR-13,868H	P36-021563 / RAN-43H	Site	H	Trash Scatter
CA-SBR-13,869H	P36-021564 / RAN-200H	Site	H	Foundations/Structure Pads; Dump
CA-SBR-13,870H	P36-021565 / RAN-202H	Site	H	Trash Scatter
CA-SBR-13,871H	P36-021566 / RAN-204H	Site	H	Trash Scatter
CA-SBR-13,872	P36-021567 / RAN-205	Site	P	Lithic Scatter
CA-SBR-13,873	P36-021568 /	Site	P	Lithic Scatter

Table 3.8-1 Cultural Resources

Resource Number	Alternate Resource Number	Site/ Isolate/ Multi-component	Historic/ Prehistoric	Description
	RAN-206			
CA-SBR-13,874	P36-021569 / RAN-208	Site	P	Lithic Scatter
CA-SBR-13,923/H	P36-021757/ WSA-MJB-009	Site	H	Rock Feature
CA-SBR-14,395/H	P36-021595/ WSA-PF-010	Site	H	Trash Scatter
CA-SBR-14,419H	P36-022649/ WSA-MJB-001	Site	H	Trash Scatter
CA-SBR-14,420H	P36-022650/ WSA-MJB-002	Site	M	Artifact Scatter (cans, lithics)
CA-SBR-14,421H	P36-022651/ WSA-MJB-004	Site	H	Stock Tank
CA-SBR-14,422H	P36-022652/ WSA-MJB-005	Site	H	Can Scatter
CA-SBR-14,423 H	P36-022659/ WSA-PF-003	Site	H	Mining Cairn
CA-SBR-14,424 H	P36-022660/ WSA-PF-004	Site	H	Can Scatter
CA-SBR-14,425 H	P36-022661/ WSA-PF-005	Site	H	Rock Ring and Historic Artifact Scatter
CA-SBR-14,426 H	P36-022663/ WSA-PF-006	Site	H	Telephone Line
CA-SBR-14,427 H	P36-022663/ WSA-PF-007	Site	H	Historic Trash Scatter
CA-SBR-14,428 H	P36-022664/ WSA-PF-008	Site	H	1932 Culvert under Baldy Mesa Road
ISO-JBP-013		Isolate	P	1 Flake and 3 Shatter
ISO-JBP-025		Isolate	P	3 Flakes
ISO-JBP-026		Isolate	P	Pot Drop
ISO-RAN-001		Isolate	P	3 Flakes
ISO-RAN-019		Isolate	P	5 Flakes
P1074-61H		Site	H	Historic Trail
P1333-10H*		Site	H	Lower Toll House, Cajon Pass Toll Road
P1333-13H		Site	H	Structural Remains
P2044-11		Site	P	Lithic Quarry
P2044-12*		Site	P	Lithic Scatter, Possible Habitation Site
P2261-1		Site	P	Roasting Pit
P2262-3		Site	P	Artifact Scatter (lithics, groundstone)
P2284-1*		Site	U	Unknown, old site record, Malcolm J. Rogers' field notes incomplete
P2483-3*		Site	P	Artifact Scatter (FAR)
P36-012335		Site	H	Can Scatter
P36-013649		Isolate	P	Projectile Point

Table 3.8-1 Cultural Resources

Resource Number	Alternate Resource Number	Site/ Isolate/ Multi-component	Historic/ Prehistoric	Description
P36-013660		Isolate	H	Tin Can
P36-015497	CPHI-SBR-12/PSBR-3H	Site	H	Baseline Road
P36-018058	CHL-573	Site	H	Sycamore Grove Monument
P36-018061	CHL-576 / P1333-12H	Site	H	Santa Fe- Salt Lake Trail Monument
P36-020137		Site	H	Railroad
P36-020321		Site	H	Residential Building
P36-020324		Site	H	Residential Building
P36-020325		Site	H	Residential Building
P36-020326		Site	H	Residential Building
P36-020327		Site	H	Residential Building
P36-020328		Site	H	Residential Building
P36-020329		Site	H	Residential Building
P36-020330		Site	H	Residential Building
P36-020331		Site	H	School Buildings - Bloomington Middle School
P36-020336		Site	H	Residential Building
P36-020375		Site	P	Sidewinder Quarry Archaeological District
P36-021108	CNX-17	Site	H	Bridge
P36-021351	CNX-19	Site	H	California Aqueduct (portion)
P36-021603	CNX-1	Site	H	Storage Tank Farm
P36-021604	CNX-2	Site	H	Storage Tank Farm
P36-021605	CNX-3	Site	H	Residential Building
P36-021606	CNX-4	Site	H	Residential Building
P36-021607	CNX-5	Site	H	Bloomington High School/Colton Unified School District Education Services Center
P36-021608	CNX-6	Site	H	Residential Building
P36-021609	CNX-7	Site	H	Residential Building
P36-021611	CNX-9	Site	H	Storage tanks
P36-021612	CNX-10	Site	H	Residential Buildings
P36-021613	CNX-11	Site	H	Residential Buildings
P36-021614	CNX-12	Site	H	Residential Building
P36-021615	CNX-13	Site	H	Art Scholl Memorial/Rialto Municipal Airport
P36-021616	CNX-14	Site	H	Residential Building
P36-021617	CNX-15	Site	H	Gem Ranch
P36-021618	CNX-18	Site	H	Residential Building
P36-021619	CNX-20	Site	H	Transmission Towers

Table 3.8-1 Cultural Resources

Resource Number	Alternate Resource Number	Site/ Isolate/ Multi-component	Historic/ Prehistoric	Description
P36-021620	CNX-21	Site	H	2 Residential Buildings and a Meeting Hall
P36-021621	CNX-22	Site	H	Residential Building
P36-021622	CNX-23	Site	H	Abandoned Horse Farm
P36-021623	CNX-24	Site	H	O.K. Corral Ostrich Farm
P36-021624	CNX-25	Site	H	3 Residential Buildings
P36-021625	CNX-26	Site	H	Wild Wash Road
P36-021626	CNX-27	Site	H	Storage Tank Farm
P36-021627	CNX-28	Site	H	USMC Supply Center - Yermo Annex
P36-021628	CNX-29	Site	H	3 Residential Buildings
P36-021629	CNX-30	Site	H	Yermo Road
P36-021630	CNX-32	Site	H	Mountain Pass Mine Chevron Mining Company Property
P36-021632	CNX-34	Site	H	2 Rural Parcels: 1 with Storage Buildings and the other with Storage Buildings, Tanks, and Trailers
P36-021633	CNX-35	Site	H	Stuckey's Restaurant and Service Station
P36-022653	MJB-IO-01	Site	P	Flaked Stone Scatter
P36-022654	MJB-IO-03	Site	P	Flaked Stone Scatter
P36-060476		Isolate	H	Trash Scatter
P36-060479		Isolate	H	Trash Scatter
P36-061544		Isolate	P	Artifact Scatter (lithics)
P36-061545		Isolate	P	Artifact Scatter (lithics)
P36-061546		Isolate	P	Artifact Scatter (lithics)
P36-062505		Isolate	P	Ceramic and Lithic Scatter
P36-062848		Isolate	P	Artifact Scatter (lithics)
P36-062885		Isolate	P	Artifact Scatter (lithics)
P36-062918		Isolate	P	Mano
P36-062921		Isolate	H	Can Scatter
P36-063895		Isolate	H	Can Scatter
P36-064114		Isolate	P	Artifact Scatter (lithics)
P36-064349		Isolate	P	Metate
P36-064351		Isolate	P	Mano
PSBR-2H*	P36-015497	Site	H	Wagon Road
PSBR-4H*		Site	H	Road (Sawpit Canyon Road)
PSBR-5H*		Site	H	Road (Cajon Pass Toll Road)
PSBR-33H		Site	H	Irrigation Canal
PSBR-52*		Site	P	Prehistoric Trail
PSBR-5H		Site	H	Road (Cajon Pass Toll Road)
RAN-207H		Site	H	Trash Scatter; Rock Feature

Table 3.8-1 Cultural Resources

Resource Number	Alternate Resource Number	Site/ Isolate/ Multi-component	Historic/ Prehistoric	Description
SM-01		Site	H	Road (Nipton Road)
SM-02		Site	H	Road (Calico Road)
SM-03		Site	H	Road (Bryman Road)
SM-04		Site	H	Road (Interstate 15)
SM-05		Site	H	Road (Halloran Springs Road)
SM-06		Site	H	Road (Stoddard Mountain Road)
26CK2216		Site	H	Historic Refuse Scatter: Site of Roach Railroad Station
26CK3816		Site	H	Rock Concentration: Possible Historic Cairn
26CK4958		Site	H	Road (Las Vegas Blvd./Hwy 604); Arrowhead Trail (US91; US466)
26CK5175		Site	H	Road (Paradise Road/Old LA Road)
26CK5180		Site	H	H-frame Power Line and Dirt Road Associated with construction of Hoover Dam (Boulder, Boulder City Line)
26CK5202		Site	H	Historic Refuse Scatter
26CK5414		Site	H	UPRR City Branch Railroad
26CK5685		Site	H	SP, LA & SF Railroad Grade
26CK5762		Site	P	Artifact Scatter: Flaked Stone
26CK5763		Site	H	Refuse Scatter
26CK5766		Site	M	Borax Railroad Stop/Siding; Historic Refuse Scatter and Prehistoric Lithic Scatter
26CK6237		Site	H	Transmission Line: Associated with Hoover Dam (Boulder Line 2)
26CK6238		Site	H	Transmission Line: Associated with Hoover Dam (Boulder Line 1)
26CK6242		Site	H	Transmission Line: Associated with Hoover Dam (Boulder Line 3)
26CK6548		Site	H	Temporary Campsite Associated with Construction of the SP, LA & SF Railroad
26CK7633		Site	H	Refuse Scatter
26CK7851		Site	H	Refuse Scatter
26CK7853		Site	H	Refuse Scatter
26CK8332		Site	P	Artifact Scatter: Flaked Stone
26CK8345		Site	H	Refuse Scatter
26CK8355		Site	H	Refuse Scatter

Table 3.8-1 Cultural Resources

Resource Number	Alternate Resource Number	Site/ Isolate/ Multi-component	Historic/ Prehistoric	Description
26CK8498		Site	H	Trash Dump
26CK8499		Site	H	Road (Blue Diamond Road/Highway 160)
26CK8500		Site	H	Power Line
26CK8501		Site	H	Road (Old U.S. Highway 91)
26CK8502		Site	H	Historic and Modern Debris Scatter
26CK8503		Site	H	Dirt Road (former telephone line alignment)
26CK8504		Site	H	Power Line and Dirt Road (Southern Sierra Power Line)
26CK8505		Site	H	Road: Formerly Dirt Road to US 91;Currenlty East 4 Seasons Drive
26CK8506		Site	H	Road: Formerly Dirt Road to Arden; Currently West Silverado Ranch Boulevard
26CK8507		Site	H	Road: Formerly Dirt Road from US 91;Currenlty Eire Avenue
26CK8508		Site	H	Road (crosses 26CK5386)
26CK8509		Site	H	Road
26CK8510		Site	H	Road
26CK8511		Site	H	Road
26CK8512		Site	H	Road
26CK8513		Site	H	Road (crosses 26CK4925)
Cartania Building		Site	H	Factory

Notes:
*Not relocated during survey

Built-environment Resources

Of the 211 cultural resources identified during the surveys within the California APE, 61 are architectural resources (Self 2011). These include a variety of structures and buildings (Table 3.8-1). Many of the residential buildings were recorded in and near the communities at the southern extent to the Proposed Project. Linear structures include railroads, roads, transmission lines, and a portion of the California Aqueduct. Other structures in the inventory include a garage, a storage tank farm, the Rialto Municipal Airport (Art Scholl Memorial), bridges, an abandoned horse farm, and a Stuckey's Restaurant and Service Station. Two large complexes that were addressed were the United States Marine Corps Supply Center–Yermo Annex and the Mountain Pass Mining Company property.

Summary of Historic Properties and Historical Resources in California

Of the 211 cultural resources identified in the APE for the Project, 43 have been listed in, determined eligible, or recommended eligible for listing in the NRHP and an additional 19 have not been evaluated pending additional research (Table 3.8-2). These 62 properties consist of 1 archaeological district, 26 archaeological sites, 25 linear features (roads, trails [and trail monuments], railroads, or transmission lines), and 10 buildings or structures.

Seventy (70) of the archaeological sites, 28 linear features, 31 buildings/structures, and 21 isolated finds have been determined or are recommended not eligible. The California State Historic Preservation Office (SHPO) has concurred that 4 of the linear features are not eligible. SHPO concurrence with the recommended eligibility determinations is pending for the remaining 125 sites and 21 isolates. For purposes of evaluation of impacts and effects, unevaluated resources and the resources previously determined eligible or recommended NRHP-eligible will be treated as historic properties and/or historical resources.

Table 3.8-2 Summary of Historic Properties, Effects, and Proposed Mitigation Measures

Site Number	Alternate Site Number	Historic/ Prehistoric/ Multi-component	Description	Eligibility	Effect	Treatment
California						
CA-SBR-223		P	Artifact Scatter: Lithics	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-541		P	Lithic Quarry	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-1068		P	Aboriginal Trail	Eligible*	Adverse Effect	Avoidance or Mitigation
CA-SBR-2340H		H	Railroad Bed	Eligible*	Adverse Effect	Avoidance or Mitigation
CA-SBR-2535/ CA-SBR-2528	P2272-2 / CA-SBR-2528 / CA-SBR-2529	P	Petroglyphs and Lithic Scatter	Eligible*	Adverse Effect	Avoidance or Mitigation
CA-SBR-2734		P	Campsite	Eligible	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-2910H	NRHP-E-OHP-3926	H	Road (Old National Trails Highway and Route 66)	Eligible	No Adverse Effect	Avoidance (bore under)
CA-SBR-3033/H	CHL-577/CHL-576/CHL-963	M	Mojave Trail/Road	Eligible*	Adverse Effect	Avoidance or Mitigation
CA-SBR-3048H		H	Road	Eligible*	Adverse Effect	Avoidance or Mitigation
CA-SBR-3694	NRHP-E-[80-1]	M	Lithic Reduction Area; Historic Trash Scatter	Eligible	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-4037	Recorded by URS as part of	P	Lithic Quarry	Eligible*	Adverse Effect	Avoidance or Mitigation

Table 3.8-2 Summary of Historic Properties, Effects, and Proposed Mitigation Measures

Site Number	Alternate Site Number	Historic/ Prehistoric/ Multi-component	Description	Eligibility	Effect	Treatment
	CA-SBR-6757					(recovery of informational values)
CA-SBR-4055	Recorded by URS as part of CA-SBR-6757	P	Lithic Quarry	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-4198		P	Habitation Site	Unevaluated; Treat as Eligible	Unknown	Avoidance or Mitigation (recovery of informational values)
CA-SBR-4272H	CHL-576	H	Mormon/Santa Fe Trail Plaque	Eligible*	Adverse Effect	Avoidance or Mitigation
CA-SBR-4411H	CHL-577	H	Mormon Trail Monument	Eligible*	Adverse Effect	Avoidance or Mitigation
CA-SBR-6017	NRHP-E-OHP-408	P	Habitation Site	Eligible	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-6699H		H	Fontana Powerhouse, Includes Grounds, Outbuildings, Intake, Penstock and Outflow Conduits	Eligible*	Adverse Effect	Avoidance or Mitigation
CA-SBR-6757		P	Lithic Reduction Area	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-6793H	NRHP-E-PHP-3926	H	Railroad	Eligible	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-6835H	CHL-859	H	Von Schmidt Line Monument	Unevaluated; Treat as Eligible	Unknown	Avoidance or Mitigation
CA-SBR-6868H		H	Trash Scatter	Unevaluated; Treat as Eligible	Unknown	Avoidance or Mitigation (recovery of informational values)
CA-SBR-7200	Formerly part of CA-SBR-562	P	Artifact Scatter: Lithics; Quarry	Eligible	Adverse Effect	Avoidance or Mitigation (recovery of

Table 3.8-2 Summary of Historic Properties, Effects, and Proposed Mitigation Measures

Site Number	Alternate Site Number	Historic/ Prehistoric/ Multi-component	Description	Eligibility	Effect	Treatment
						informational values)
CA-SBR-7694H	NRHP-E-94-001/P-36-007694/CNX-31	H	Transmission Lines (Boulder Transmission Lines 1, 2, 3)	Eligible	No Adverse Effect	Avoidance
CA-SBR-7883H		H	Irrigation Canal	Eligible*	No Adverse Effect	Avoidance (bore under)
CA-SBR-8127H		H	Historic Artifact Scatter	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-8128H		H	Homestead	Eligible*	Adverse Effect	Avoidance or Mitigation
CA-SBR-8857H		H	Three Sets of Transmission Lines	Unevaluated ; Treat as Eligible	Unknown	Avoidance or Mitigation
CA-SBR-10,315H	NRHP-E-93-007	H	Transmission Line	Eligible*	No Adverse Effect	Avoidance
CA-SBR-10,316H	NRHP-E-94-030	H	Transmission Line	Eligible	No Adverse Effect	Avoidance
CA-SBR-10,330H		H	Railroad	Eligible	No Adverse Effect	Avoidance (bore under)
CA-SBR-10,628H		H	Railroad Roundhouse and Industrial Complex	Eligible*	No Adverse Effect	Avoidance
CA-SBR-10,629H		H	Trash Scatter	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-13,825	P36-021519 / JBP-22/23	P	Lithic Scatter	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-13,827	P36-021521 / JBP-25	P	Habitation Debris	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-13,836	P36-021530 / JBP-44	P	Hearths; Habitation Debris	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-13,855	P36-021549 / RAN-14	P	Hearths/Pits	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of

Table 3.8-2 Summary of Historic Properties, Effects, and Proposed Mitigation Measures

Site Number	Alternate Site Number	Historic/ Prehistoric/ Multi-component	Description	Eligibility	Effect	Treatment
						informational values)
CA-SBR-13,869H	P36-021564 / RAN-200H	H	Foundations/Structure Pads; Dump	Unevaluated; Treat as Eligible	Unknown	Avoidance or Mitigation
CA-SBR-14,423 H	P36-022659/ WSA-PF-003	H	Mining Cairn	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-14,425 H	P36-022661/ WSA-PF-005	H	Rock Ring and Historic Artifact Scatter	Eligible*	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
CA-SBR-14,426 H	P36-022663/ WSA-PF-006	H	Telephone Line	Unevaluated; Treat as Eligible	Unknown	Avoidance or Mitigation
CA-SBR-14,428 H	P36-022664/ WSA-PF-008	H	1932 Culvert under Baldy Mesa Road	Eligible*	No Adverse Effect	Avoidance
P36-018061	P1333-12H	H	Santa Fe - Salt Lake Trail Monument	Unevaluated; Treat as Eligible	Unknown	Avoidance or Mitigation
P1333-13H		H	Structural Remains	Eligible*	Adverse Effect	Avoidance or Mitigation
P2262-3		P	Artifact Scatter (lithics, groundstone)	Unevaluated; Treat as Eligible	Unknown	Avoidance or Mitigation (recovery of informational values)
P36-018058	CHL-573	H	Sycamore Grove Monument	Unevaluated; Treat as Eligible	Unknown	Avoidance or Mitigation
P36-020321		H	Residential Building	Unevaluated; Treat as Eligible	Unknown	Avoidance or Treatment
P36-020324		H	Residential Building	Unevaluated; Treat as Eligible	Unknown	Avoidance or Treatment
P36-020325		H	Residential Building	Unevaluated; Treat as Eligible	Unknown	Avoidance or Treatment
P36-020326		H	Residential Building	Unevaluated; Treat as Eligible	Unknown	Avoidance or Treatment
P36-020327		H	Residential Building	Unevaluated; Treat as Eligible	Unknown	Avoidance or Treatment
P36-020328		H	Residential Building	Unevaluated; Treat as	Unknown	Avoidance or Treatment

Table 3.8-2 Summary of Historic Properties, Effects, and Proposed Mitigation Measures

Site Number	Alternate Site Number	Historic/ Prehistoric/ Multi-component	Description	Eligibility	Effect	Treatment
				Eligible		
P36-020329		H	Residential Building	Unevaluated ; Treat as Eligible*	Unknown	Avoidance or Treatment
P36-020330		H	Residential Building	Unevaluated ; Treat as Eligible	Unknown	Avoidance or Treatment
P36-020331		H	School Buildings - Bloomington Middle School	Unevaluated ; Treat as Eligible	Unknown	Avoidance or Treatment
P36-020375		P	Sidewinder Quarry Archaeological District	Eligible	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
P36-021351	CNX-19	H	California Aqueduct (portion)	Unevaluated ; Treat as Eligible	No Adverse Effect	Avoidance (bore under)
SM-01		H	Road (Nipton Road)	Eligible*	No Adverse Effect	Avoidance (bore under)
SM-02		H	Road (Calico Road)	Eligible*	No Adverse Effect	Avoidance (bore under)
SM-03		H	Road (Bryman Road)	Eligible*	No Adverse Effect	Avoidance (bore under)
SM-04		H	Road (Interstate 15)	Eligible*	No Adverse Effect	Avoidance (Bore Under)
SM-05		H	Road (Halloran Springs Road)	Eligible*	No Adverse Effect	Avoidance (Bore Under)
SM-06		H	Road (Stoddard Mountain Road)	Eligible*	No Adverse Effect	Avoidance (Bore Under)
Nevada						
26CK2216		H	Historic Refuse Scatter: Site of Roach Railroad Station	Eligible	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
26CK4958		H	Road (Las Vegas Blvd./Hwy 604); Arrowhead Trail (US91; US466)	Eligible*	No Adverse Effect	Avoidance (bore under)
26CK5180		H	H-frame Power Line and Dirt Road Associated with construction of Hoover Dam (Boulder, Boulder City Line)	Eligible	No Adverse Effect	Avoidance

Table 3.8-2 Summary of Historic Properties, Effects, and Proposed Mitigation Measures

Site Number	Alternate Site Number	Historic/ Prehistoric/ Multi-component	Description	Eligibility	Effect	Treatment
26CK5685		H	SP, LA & SF Railroad Grade	Eligible	No Adverse Effect	Avoidance
26CK5766		M	Borax Railroad Stop/Siding; Historic Refuse Scatter and Prehistoric Lithic Scatter	Eligible	Adverse Effect	Avoidance or Mitigation (recovery of informational values)
26CK6237		H	Transmission Line Associated with Hoover Dam (Boulder Line 2)	Eligible	No Adverse Effect	Avoidance
26CK6238		H	Transmission Line Associated with Hoover Dam (Boulder Line 1)	Eligible	No Adverse Effect	Avoidance
26CK6242		H	Transmission Line Associated with Hoover Dam (Boulder Line 3)	Eligible	No Adverse Effect	Avoidance
26CK8332		P	Artifact Scatter: Flaked Stone	Eligible	Adverse Effect	Avoidance/ Monitoring

Notes:
*SHPO concurrence pending

Nevada Cultural Resources

In 2008, WSA conducted a BLM Class III Cultural Resources Survey for archaeological resources in the direct APE for the portion of the Project in Clark County, Nevada (WSA 2009a). A total of 38 cultural resources were identified in the Nevada APE (Table 3.8-1). Thirty-seven (37) of these resources are archaeological and linear resources; One (1) architectural resource has been identified as part of the survey in Nevada (WSA 2009b).

Descriptions of the cultural resources identified in the Nevada portion of the Project are discussed below. Impacts on these cultural resources are discussed in Section 3.8.4 followed by a summary of mitigations measures introduced to avoid or reduce impacts resulting from the Project.

Nevada Archaeological Resources

Thirty-eight (37) of the cultural resources identified during the BLM Class III Cultural Resources Survey within the Nevada APE are archaeological or linear resources. Site types include refuse scatters, a historic-period trash dump, a rock concentration, and lithic scatters. Linear features include roads, transmission lines, railroads/railroad grades.

Nevada Built Environment Resources

In 2009, an architectural survey was conducted for the 3 above ground features in the Nevada portion of the Project (WSA 2009b). These features include a new Kinder Morgan facility located approximately ¾-mile northwest of the Highway 215/15 overpass, a Motor Operated Valve (2 potential locations were included in the survey), and a Gate Valve, all located south of the City of Las Vegas. Only 1 building was determined to be older than 45 years.

Nevada Historic Properties

Eight (8) resources identified within the Nevada APE have been determined eligible for listing in the NRHP (Table 3.8-2). These NRHP-eligible properties consist of 3 archaeological sites and 5 linear structures (roads, railroads or transmission lines) that have received SHPO concurrence (Bladrica 2009).

The remaining 30 resources have been recommended or determined not eligible (for some just the portion in the APE was assessed). These 30 resources consist of 12 archaeological sites, 17 linear structures and 1 building. The building was the only one found to be older than 45 years. The building was constructed in 1963 and was recommended not eligible for the NRHP (WSA 2009b). SHPO has concurred that 23 of the resources are not eligible (6 archaeological sites and 17 linear features) (Baldrica 2009), SHPO concurrence on the remaining 7 sites is pending.

For purposes of evaluation of impacts and effects, unevaluated resources and the resources previously determined eligible or recommended NRHP-eligible will be treated as historic properties.

3.8.2 Applicable Regulations, Plans, and Policies

3.8.2.1 Federal

Antiquities Act of 1906

The Antiquities Act is the first law enacted to specifically establish that archaeological sites on public lands are important public resources, and obligated federal agencies that manage public lands preserve the scientific, commemorative, and cultural values of such sites on these lands.

National Historic Preservation Act of 1966, as amended (§ 106; 36 CFR Part 800)

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties with the goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties.

National Environmental Policy Act of 1969, as amended (NEPA)

NEPA requires the analysis of the effect of federal undertakings on the environment to include the effect on cultural resources.

Executive Order (EO) 11593 (1971), Protection and Enhancement of the Cultural Environment

EO 11593 provides government leadership in preserving, restoring and maintaining the historic and cultural environment of the Nation and addresses the NRHP and provides guidance to those involved with federal properties that should be inventoried and nominated for listing on the NRHP.

Archaeological and Historic Preservation Act of 1974 (AHPA)

AHPA imposes additional requirements on an agency if a project will affect historic properties that have archaeological value and notifies the Department of the Interior when an action under the AHPA does not comply with NHPA §106.

Federal Land Policy and Management Act of 1976 (FLPMA) as amended

FLPMA establishes policies and goals to be followed in administration of public lands by the BLM to include preservation of historic and archaeological resources.

American Indian Religious Freedom Act of 1978 (AIRFA)

AIRFA enforces the right of Native Americans to have access to their sacred places. If a place of religious importance to Native Americans may be affected by an undertaking, AIRFA promotes consultation with Indian religious practitioners, which may be coordinated with National Historic Preservation Act (NHPA) §106 consultation.

Archaeological Resources Protection Act of 1979 (ARPA)

ARPA provides for the protection of archaeological resources and sites that are on public lands and Indian lands. ARPA may impose additional requirements on an agency if federal or Indian lands are involved.

Native American Graves Protection and Repatriation Act of 1990 (NAGPRA)

NAGPRA provides a requirement for federal agencies and institutions that receive federal funding to return certain Native American cultural items, including human remains, funerary objects, sacred objects, and objects of cultural patrimony, to lineal descendants and cultural affiliated Indian tribes. For activities on federal lands, NAGPRA requires consultation with "appropriate" Indian tribes prior to the intentional excavation, or removal after inadvertent discovery, of several kinds of cultural items, including human remains and objects of cultural patrimony.

Protocol -Discovery of Human Remains in California

All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code 7050.5) and federal law and regulations ([Archaeological Resources Protection Act (ARPA) 16 USC 470 & 43 CFR 7], NAGPRA 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1-7]) require a defined protocol if human remains are discovered in the state of California regardless if the remains are modern or archaeological. Upon discovery of human remains in California, all work in the area must cease immediately, nothing disturbed and the area is to be secured. The County Coroner's Office of the county where the remains were located must be called. The Coroner has two working days to examine the remains after notification. The appropriate land manager/owner or the site shall also be called and informed of the discovery. If the remains are located on federal lands, federal land managers/federal law enforcement/federal archaeologist are to be informed as well because of complementary jurisdiction issues. It is very important that the suspected remains and the area around them remain undisturbed and the proper authorities called to the scene as soon as possible as it could be a crime scene. Disturbing human remains is against federal and state laws and there are criminal/civil penalties including fines and/or time in jail up to several years. In addition, all vehicles and equipment used in the commission of the crime may be forfeited. The Coroner will determine if the bones are historic/archaeological or a modern legal case.

Modern Remains

If the Coroner's Office determines the remains are of modern origin, the appropriate law enforcement officials will be called by the Coroner and conduct the required procedures. Work will not resume until law enforcement has released the area.

Archaeological Remains

If the remains are determined to be archaeological in origin and there is no legal question, the protocol changes depending on whether the discovery site is located on federally or non-federally owned/managed lands.

Remains discovered on federally owned/managed lands

After the Coroner has determined the remains are archaeological or historic and there is no legal question, the appropriate Field Office Archaeologist must be called. The archaeologist will initiate the proper procedures under ARPA and/or NAGPRA. If the remains can be determined to be Native American, the steps as outlined in NAGPRA, 43 CFR 10.6 *Inadvertent discoveries* must be followed.

Remains discovered on non-Federally owned/managed lands

After the Coroner has determined the remains on non-federally owned/managed lands are archaeological and there is no legal question, the Coroner will make recommendations concerning the treatment and disposition of the remains to the person responsible for the excavation, or to his or her authorized representative. If the Coroner believes the remains to be those of a Native American he/she shall contact by telephone within 24 hours, the California Native American Heritage Commission (NAHC). The NAHC will immediately notify the person it believes to be the most likely descendent of the remains. The most likely descendent has 48 hours to make recommendations to the land owner for treatment or disposition of the human remains. If the descendent does not make recommendations within 48 hours, the land owner shall reinter the remains in an area of the property secure from further disturbance. If the land owner does not accept the descendant's recommendations, the owner or the descendent may request mediation by the NAHC.

EO 13007 (1996), Protection and Preservation of Native American Sacred Sites

EO 13007 established that federal land stewards shall, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites.

EO 13175 (2000), Consultation and Coordination with Indian Tribal Governments

EO 13175 establishes regular and meaningful consultation and collaboration between the United States government and tribal officials in the development of federal policies that have tribal implications.

EO 13287 (2003), Preserve America

EO 13287 requires that it is the policy of the federal government to provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of historic properties owned by the federal government.

United States Forest Service

The USFS follows the guidelines administered under the FLPMA and the Antiquities Act of 1906. 36 CFR 261 states that the USFS has jurisdiction over "Protection of objects or places of historical, archaeological, geological or paleontological interest" and prohibits the following: "Excavating, damaging, or removing any vertebrate fossil or removing any paleontological resource for commercial purposes without a special use permit".

3.8.2.2 State

California

California Environmental Quality Act of 1970, as amended

CEQA establishes statutory requirements for the formal review and analysis to discretionary projects causing a substantial adverse change in the significance of an historical or archaeological resource with a significant effect on the environment. CEQA defines a substantial adverse change is defined as demolition, destruction, relocation, or alteration activities which would impair historical significance.

Administrative Code; Title 14, § 4307

Title 14 § 4307 requires that no person shall remove, injure, deface or destroy any object of paleontological, archaeological, or historical interest or value.

Government Code § 6253, 6254, 6254.10

These sections authorize county and city governments, respectively, to enact zoning ordinances for the protection and regulation of buildings and structures of special historical value.

Government Code § 65860

This section allows the counties or cities to regulate the use of buildings, structures, and land between business, industry, residential, and open space.

Health and Safety Code § 7050.5

This code requires that construction or excavation be stopped near human remains until a coroner determines whether the remains are Native American; requires the coroner to contact the NAHC if the remains are Native American.

Health and Safety Code § 7051

This code addresses the removal of human remains from internment, and requires a place of storage while awaiting internment or cremation, with the intent to sell them or to dissect them with malice or wantonness as a public offense punishable by imprisonment in a state prison.

Health and Safety Code § 7052 and 7050.5

Section 7052 establishes that disturbance of Indian cemeteries is a felony. Section 7050.5 establishes that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American.

Penal Code, Title 14, § 622.5, 623

These sections establish that it is a misdemeanor offense for any person other than the owner to willfully damage or destroy archaeological or historical features on public or privately owned land.

Public Resources Code § 5020 to 5029.5

Section 5020 to 5029.5 created the California Historical Landmark (CHL) Committee and authorizes the Department of Parks and Recreation to designate Registered Historical Landmarks and Registered Points of Historical Interest. This section establishes the California Historic Resources criterion, and creates the CHL Committee and authorizes the Department of Parks and Recreation to designate CHLs and registered Points of Historical Interest; establishes criteria for the protection and preservation of historic resources.

Public Resources Code § 5097.5

Section 5097.5 provides that no person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands. Violation of § 5097.5 is a misdemeanor.

Public Resources Code § 5097.9 to 5097.991

Section 5097.9 to 5097.991 establishes regulations for the protection of Native American religious places; establishes the NAHC; establishes repatriation of Native American artifacts; and requires notification of discovery of Native American human remains to a most likely descendant.

Resolution Number 43

Resolution Number 43 requires all state agencies to cooperate with programs of archaeological survey and excavation, and to preserve known archaeological resources whenever reasonable.

Senate Bill 18

Senate Bill 18 provides that counties and cities address the protection of Native American Traditional Cultural Places during the development of general plans.

Senate Bill 922

Senate Bill 922 provides an exemption for Native American Graves, cemeteries, archaeological site information, and sacred places in the possession of the NAHC, state, or local agencies from the California Public Records Act

Senate Concurrent, Resolution Number 87

Resolution Number 87 provides for the identification and protection of traditional Native American resource Gathering sites on State land.

San Bernardino County General Plan

Conservation Element of the San Bernardino County General Plan includes goals provided to address cultural resources. Goal CO 3 states that the County will preserve and promote its historic and prehistoric cultural heritage; Goal D/CO 6 promotes the protection of cultural resources within the Desert Region; and Goal M/CO 4 promotes the protection of cultural and paleontological resources within the Mountain Region.

City of Adelanto

The City of Adelanto does not specifically refer to Cultural Resources in its General Plan. However, it has conditions of approval. If, for instance, an artifact is discovered on a project within their jurisdiction, the City has steps in place to ensure it is reported to other relevant agencies.

City of Barstow

The Cultural Resources Element of Barstow's General Plan lists the following goals:

- Goal IV.1: The City shall actively support cultural facilities and activities.
- Goal IV.2: Strive to preserve and protect important features and sites (historic, archaeologic and paleontologic) as defined under this Element's Cultural Resources Management Plan, from degradation and destruction.

City of Colton

The Cultural Resources Preservation Element of Colton's General Plan lists the following goals:

- Goal 1: Identify, protect, and preserve Colton's rich archaeological resources for the enjoyment of future generations.
- Goal 2: Identify, designate and preserve specific historically significant structures, landscapes and facilities.
- Goal 3: Educate the public about Colton's heritage and resources.

City of Rialto

Chapter 9, Cultural and Historic Resources, in Rialto's General Plan lists the following goals:

- Goal 1.1: Encourage public understanding and involvement in the unique heritage of the City of Rialto.
- Goal 2.1: All significant archaeological resources in Rialto shall be surveyed, recorded and where feasible, protected.
- Goal 3.1: All significant historic archaeological resources within Rialto shall be surveyed, recorded and where feasible, protected.
- Goal 4.1: Preserve Rialto's significant historic resources as a source of community identity, stability, aesthetic character, and socio-economic value.

City of Victorville

The Resource Element in Victorville's General Plan lists the following goals:

- Goal 1 Policy 1.3: The City will continue to support efforts to identify as well as require the protection or salvaging of significant paleontological and archaeological resources threatened by development.
- Goal 1 Policy 1.4: The City will refine its research and evaluation methods to differentiate between those sites and structures which are locally significant and those which qualify for national or state recognition.

Nevada

The Nevada Revised Statutes (NRS) 381.195 to 381.227, inclusive

NRS 381.195 to 381.227, inclusive, discusses requirement and limitations for applicants obtaining or securing state and federal permit with the intent to investigate, explore, or excavate historic or prehistoric sites, and defines penalties for non-compliance. These statutes include that it is unlawful for any person to commit vandalism upon any historic or prehistoric sites, natural monuments, archaeological sites and objects of antiquity, or to write or paint or carve initials or words, or in any other way deface, any of those objects, Indian paintings, or historic buildings.

NRS 383.150 to 383.190, inclusive

NRS 383.150 to 383.190, inclusive, discusses protocol for the discovery of Indian burial site; permissible excavation and states that a person who disturbs the cairn or grave of a native Indian through inadvertence while engaged in a lawful activity such as construction, mining, logging or farming or any other person who discovers the cairn or grave of a native Indian that has not been previously reported to the Office shall immediately report the discovery and the location of the Indian burial site to the Office.

NRS 383.400 to 383.440, inclusive

NRS 383.400 to 383.440, inclusive, describes the implications for a person who knowingly and willfully removes, mutilates, defaces, excavates, injures or destroys a historic or prehistoric site or resource on state land or who receives, traffics in or sells cultural property appropriated from state land without a valid permit, unless a greater penalty is provided by a specific statute:

NRS 407.130

NRS 407.130 provides for the protection and development of state monument, historic landmark, historic building, historic site, or archaeological area.

Las Vegas 2020 Master Plan, 2002

The goal of the Las Vegas 2020 Master Plan Historic Properties Preservation Plan is to promote the educational, cultural, economic, and general welfare of the public through the preservation, maintenance and protection of structures, sites and districts of significant historic, architectural, and archaeological interest within Las Vegas.

The Regional Coordination Goal the Las Vegas 2020 Master Plan contains Objective 7.4, “To identify, protect and preserve archaeological resources and areas with unique or sensitive geologic features that exist within the city boundaries, and to integrate them with new urban development that extends into archaeologically sensitive areas”. Policy 7.4.1 requires an inventory of archaeological resources within the boundaries of the proposed development. Policy 7.4.2 requires that efforts be made to preserve any significant archaeological resources that may be discovered.

3.8.3 Environmental Consequences

3.8.3.1 Requirements and Focus of NEPA versus CEQA Analysis

<u>**Potential Impacts to be Evaluated under NEPA**</u>

In accordance with Part 1502.16 of the Council on Environmental Quality's regulations for implementing NEPA, this section forms the scientific and analytic basis for the evaluating the significance of impacts on cultural resources by the alternatives identified for the Proposed Project. According to NEPA regulations, in considering whether an action may "significantly affect the quality of the human environment," and agency must consider, among other things, the unique characteristics of the geographic areas such as proximity to historic or cultural resources (40 CFR 1508.27(b)[3]), and the degree to which the action may adversely affect districts, sites highways, structures, or objects listed in to eligible for listing in the NRHP (40 CFR 1508.27(b)[8]).

Effects Determinations under Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR Part 800)

Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation (ACHP), the opportunity to comment on such undertakings. The Section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official(s) and other parties with an interest in the effects of the undertaking on historic properties. The goal of Section 106 consultation is to identify historic properties potentially affected by the undertaking, assess its effects, and seek ways to avoid, minimize or mitigate any adverse effects on historic properties.

Under the NHPA, an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration would be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative. Adverse effects on historic properties include, but are not limited to:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

- Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance (36 CFR §800.5(2)).

These potential impacts to historic properties are addressed as part of Cult-1 below.

CEQA Significance Criteria

Under CEQA, impacts resulting from construction, operation, and maintenance of the Proposed Project are quantified using significance thresholds. If an impact exceeds a threshold, it is deemed a significant impact. Significant impacts require the Applicant to conduct mitigation to reduce the impacts on less than significant levels. The term "significance" is used differently in NEPA and CEQA. For the purposes of this document, the terms *significance* or *significant* will be used only to describe impacts under CEQA. Impacts on cultural resources will be considered significant if the Project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 (addressed as Cult-1 below).
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 (addressed as Cult-1 below).
- Disturb any human remains including those interred outside of formal cemeteries (addressed as Cult-1 below).

3.8.3.2 Impact Analysis

This section describes the impacts associated with each alternative according to the criteria prescribed by NEPA and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA requirements. Under CEQA, where significant impacts are expected, mitigation measures must be outlined to reduce impacts on less than significant levels. As noted, under NEPA, any reasonably expected impact should be linked to a corresponding reasonable and enforceable mitigation measure. The difference between CEQA and NEPA impact assessments is that NEPA requires an assessment of impacts, regardless of whether or not they reach a level of significance.

The following impact analysis distinguishes between NEPA/CEQA impacts on cultural resources and historical resources, including those cultural resources that have been listed in, determined eligible for listing in, or recommended eligible for listing in national, state or local historical registries, and the Section 106 effects on *historic properties*—those cultural resources that have been listed in or determined eligible for listing in the NRHP or recommended eligible for listing in the NRHP. For purposes of evaluation of impacts and effects, unevaluated resources, the resources previously determined eligible or recommended NRHP-eligible will be treated as historic properties and/or historical resources.

Project/Proposed Action (Alternative 1)

Impact Cult-1: Adverse impact to an historic property or historical or archaeological resource.

Construction of the Proposed Project would involve above and below-ground disturbance within the APE, resulting in impacts on surface and subsurface cultural resources. Above ground resources may be disturbed by construction activities, which could result in changes to the integrity of the resource and the significant vales they convey. Below ground construction has the potential to affect buried archaeological resources. Based on the review of environmental settings (e.g., river crossings) and historic maps for the Project including General Land Office plats, USGS maps, highway maps, etc., there are a number of areas where possible buried prehistoric and historical archaeological sites might occur in the APE.

Quantifiable impacts to cultural resources could occur on sites further detailed in the survey reports. If not mitigated, these impacts could be significant under CEQA. The following mitigation measures will be employed pending BLM approval and as long as they do not conflict with any agreement documents prepared for the Project. Impacts to historic properties and/or historical resources would be reduced to less than significant levels under CEQA, with the implementation of these mitigation measures. By avoiding and managing resources as specified below, there would be no residual impacts to cultural resources under NEPA.

- **MM CULT-1a: Avoidance.** The Applicant would avoid cultural resources during construction of the Project by reducing the construction ROW or rerouting the pipeline within the ROW to avoid the resource. Project redesign would avoid impacts on cultural resources in areas where Project construction come in direct contact with a cultural resource. If the Project cannot be routed to avoid the resource, the Applicant would reduce the construction ROW to avoid impacts on cultural resources. Avoidance is the BLM's preferred measure to mitigate impacts on cultural resources. MM CULT-1a would reduce or eliminate impacts on cultural resources resulting from construction of the Project. If the Applicant cannot implement MM CULT-1a due to engineering constraints, then the Applicant would implement MM CULT-1c through CULT-1g.
- **MM CULT-1b: Designation of Environmentally Sensitive Areas (ESAs).** The Applicant would establish ESAs for all locations of cultural resources crossed by the Project. Cultural resources ESAs would be established so that significant cultural resources are buffered by 50 feet. Protective fencing would be erected around the perimeter of the resource to protect the resource from terrestrial deterioration resulting from increased foot traffic from construction workers and to protect the resource from vandalism or looting. Visual markers would be placed at appropriate intervals within fifty feet of the resource to alert construction crews of the presence of the resource (to be placed and removed daily during work hours; and on-site ESA information briefings for each new worker on the site. MM CULT-1b would reduce or eliminate impacts on cultural resources. If the Applicant requires use of the full 100 foot construction ROW due to engineering constraints, than the Applicant would implement MM CULT-1c through CULT-1f to reduce impacts on cultural resources.
- **MM CULT- 1c: Data Recovery.** In instances where the Applicant cannot avoid impacts to archaeological properties that contain significant information values by implementing MM CULT-1a through CULT-1b, the Applicant would implement a data recovery program as provided in the Memorandum of Agreement or Programmatic Agreement developed in consultation pursuant to Section 106 of the NHPA. Data recovery guidance

would be stipulated in the Historical Properties Treatment Plan (HPTP) and would occur in coordination with the land owner. Data recovery efforts would be commensurate with the type of resource and the extent of the impact to the resource. At a minimum, data recovery would include a thorough excavation and analysis of the resource and would always be supported by thorough documentation, including field notes, appropriate archaeological recordation forms appropriate to the state and/or jurisdiction of the action, photography, site sketching, and accurate location information recording supported by the use of geographic positioning system unit. Data recovery plans would be prepared and approved by the land owner prior to construction activities. On BLM land, data recovery for archaeological properties would be consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37). The data recovery program would conform with the guidance of the Advisory Council on Historic Preservation's Treatment of Archaeological Properties and, for historic buildings and structures, the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation (48 FR 44730-34). A data recovery report would be required for all data recovery actions. MM CULT-1c would reduce impacts on cultural resources.

- **MM CULT-1d: Historic Properties Treatment Plan (HPTP).** Where historic properties are within the APE, the Applicant would implement a HPTP prior to construction activities. The HPTP would include requirements, protocol, standards, and contact information pertaining to the treatment of historic properties, including prehistoric resources and significant resources in the built environment. The HPTP would ensure all treatment applied to historic resources is compliant with NHPA §106, CEQA, and all other applicable federal, state, and local requirements. The HPTP would follow the guidelines stipulated in the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995). Compliance with the Standards is generally considered as mitigated to a level of less than a significant impact on the historical resource. MM CULT-1d would reduce impacts on cultural resources to less than significant levels.
- **MM CULT-1e: Supplemental Survey.** Areas that have not been inventoried for cultural resources and are included in the project will be surveyed prior to any ground disturbance. Results of these investigations will be provided to the appropriate agencies. If historic properties or historical resources are identified and cannot be avoided (MM CULT-1a and MM CULT-1b), MM CULT-1d will be implemented, along with MM CULT-1c, if the resource(s) is archaeological. MM CULT-1e would reduce impacts on cultural resources.
- **MM CULT-1f: Monitoring.** The Applicant would retain a qualified archaeologist to conduct full-time monitoring of all areas of the Project specified in the HPTP. The archaeological monitor would have a working knowledge of the Project area and would be competent to identify the range of cultural resources known to exist in the vicinity of the Project. The monitor would be afforded the responsibility to temporarily stop construction activities to inspect areas where ground disturbance has potentially revealed cultural resources. The monitor would also be afforded the responsibility to stop all construction activities in the event an unanticipated cultural resource is located. The Applicant would suspend construction activities until the archaeologist has inspected the discovery and determined any required or recommended treatment for the resource(s). MM CULT-1f would reduce impacts on cultural resources.

- **MM CULT-1g: Unanticipated Discoveries Plan.** Prior to any construction activity, the Applicant's archaeologist would implement an unanticipated discovery plan that would describe, in detail, the actions to be taken in the event unanticipated cultural resources, including human remains, are identified in the course of construction activities. This plan would require compliance with all governing laws and would follow the stipulations outlines in NAGPRA. MM CULT-1g would reduce impacts to cultural resources.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to cultural resources associated with the seven route variations are described below:

Bloomington Alternative

The Bloomington Alternative route variation avoids one eligible cultural resource along the Proposed Project route. Therefore, the potential cultural resource impacts associated with the Bloomington route would be less than those identified for the Proposed Project.

Rialto Alternative

The Rialto Alternative route variation does not avoid any eligible cultural resources. The segment of the Proposed Project within the City of Rialto avoids one eligible cultural resource on the Rialto Alternative. Both segments are in an urban area. Therefore, the potential cultural resource impacts associated with the Rialto route would be greater than those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route, and the segment of the Proposed Project that it would replace within the unnamed riparian area, do not have any differences with respect to eligible cultural resources. No eligible archaeological, architectural, or historic properties or resources were identified in either area during resource surveys. Neither route would affect resources which have been determined to be eligible for listing on the NRHP. However, the Wagon Train Road HDD would involve a drilling operation underneath Interstate 15, a subsurface area that cannot be surveyed prior to construction. Similarly, construction of the Proposed Project would require implementation of mitigation measure MM WR-5, which would require the use of the HDD construction method under the unnamed riparian area. Both methods would be expected to present a lower potential for impacts to cultural resources than the open cut construction method. The open cut method is not an option for the Wagon Train Route. However, implementation of MM WR-5, as would be required should the Proposed Project route be selected, would avoid or reduce any adverse impacts to cultural resources in this area. Implementation of MM WR-5 would reduce impacts to cultural resources to less than significant under CEQA.

Overall, the potential cultural resource impacts associated with the Wagon Train Road route would be similar to those identified for the Proposed Project.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa route would increase the length of the pipeline by approximately 0.8 miles. The longer length of the pipeline would slightly increase the amount of soil disturbance, and therefore may have a slightly increased risk of potential impacts to cultural resource impacts during construction. No cultural resources were identified during surveys of the Proposed Project route in this area. However, the surveys did not include investigation of the Alternative route. Although the Alternative route traverses through a residential neighborhood, and the construction area has already been disturbed, unidentified resource could potentially be present. If present, these resources could be impacted by project construction, including excavation of previously undisturbed areas. These impacts would be direct, adverse impacts under NEPA, and would be significant under CEQA. These impacts would be reduced to less than significant under CEQA through implementation of mitigation measures MM-1a, MM-1b, MM-1c, MM-1d, MM-1f, and MM-1g. In addition, should the Alternative route be selected, the following mitigation measure would also be required:

- **MM CULT-1e: Surveys.** Prior to any construction activity on the Alternative route, the Applicant would conduct Class III level surveys equivalent in scope to those conducted on the Proposed Project route. The results of the surveys would be used to develop additional mitigation, if needed.

Overall, the potential for cultural resource impacts associated with the Phelan Road/Baldy Mesa Alternative is expected to be low.

Zzyzx Alternative

The Zzyzx route and the segment of the Proposed Project that it would replace do not have any differences with respect to eligible cultural resources. The Zzyzx Alternative route variation and the segment of the Proposed Project that it would replace may potentially be different with respect to potential for buried cultural resources. The Proposed route would be constructed over a bedrock-based topographic high, while the Alternative route would be constructed within an active wash. In general, the potential for unidentified, buried archaeological resources to be present would be expected to be higher along the Alternative route, within the wash. However, the Alternative route would occur in area which has already been disturbed by construction of the existing Calnev 8-inch and 14-inch pipelines. Therefore, the potential for unidentified resources to be present in this area is expected to be low.

Any significant impacts with respect to CEQA would be mitigated to less than significant through implementation of mitigation measures MM-1a, MM-1b, MM-1c, MM-1d, MM-1f, and MM-1g.

Baker Alternative

The Baker Alternative route would shorten the length of the pipeline by approximately 1 mile. The Baker route, and the segment of the Proposed Project that it would replace, do not have any differences with respect to eligible cultural resources. Instead of paralleling the existing Southern California Eidison (SCE) and Los Angeles Department of Water & Power (LADWP) power lines west of Baker, the Alternative route would follow the Interstate 15 ROW, a different transmission line route, and then public streets through the town of Baker. In general, the Proposed route would traverse undeveloped land. In contrast, the Alternative route would traverse a developed area.

Impacts would be avoided or reduced through implementation of mitigation measures MM-1a, MM-1b, MM-1c, MM-1d, MM-1f, and MM-1g. These mitigation measures would reduce any impacts under CEQA to less than significant.

Silver Lake Pump Station Alternative

The Alternative and Proposed Project locations for the Silver Lake Pump Station are similar with respect to cultural resources. Impacts associated with either location would be avoided or reduced through implementation of mitigation measures MM-1a, MM-1b, MM-1c, MM-1d, MM-1f, and MM-1g. These mitigation measures would reduce any impacts under CEQA to less than significant.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Proposed Project avoids one eligible cultural resource along the Sunset Alternative. However, the surveys of the Alternative route in this area are incomplete. Although the Alternative route traverses through an urban area, and the construction area has already been disturbed, unidentified resources could potentially be present. If present, these resources could be impacted by project construction, including excavation of previously undisturbed areas. These impacts would be direct, adverse impacts under NEPA. These impacts would be avoided or reduced through implementation of mitigation measures MM-1a, MM-1b, MM-1c, MM-1d, MM-1f, and MM-1g. In addition, should the Alternative route be selected, the following mitigation measure would also be required:

- **MM CULT-1e: Surveys.** Prior to any construction activity on the Alternative route, the Applicant would conduct Class III level surveys equivalent in scope to those conducted on the Proposed Project route. The results of the surveys would be used to develop additional mitigation, if needed.

Both segments are in an urban area in which subsurface resources that would be disturbed by construction have already been disturbed. Therefore, the potential cultural resource impacts associated with the Sunset Lateral Alternative would be the same as those identified for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this Alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction.

Summary

Overall, Alternative 2 would have a slightly increased level of impacts as compared to the Proposed Project. In some areas (such as the Zzyzx route), Alternative 2 would have an increased potential for impacting previously unidentified, buried archaeological resources because the Alternative route would pass through an active wash, as opposed to a bedrock-based location. Similarly, use of the Phelan Road/Baldy Mesa Alternative and Sunset Lateral routes could have an increased risk of impacts because surveys have not been completed in these areas. Use of the Silver Lake Pump Station Alternative location may have an increased risk of disturbance for previously unidentified resources because it is in an undeveloped area, while the Proposed Project location is situated in a developed area adjacent to the SCE substation and the Baker Elementary and High School.

Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. In addition, mitigation measure MM CULT-1g would require pre-construction surveys of the Phelan Road/Baldy Mesa and Sunset Lateral Alternative routes, should those routes be selected. These mitigation measures would reduce the level of impacts under CEQA to less than significant.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker, the Proposed Project route would be followed. With respect to cultural resources, Alternative 3 would not adopt the potential uncertainties associated with the lack of survey data on the Phelan Road/Baldy Mesa Alternative route.

Alternative 3 could potentially have a greater level of impacts than Alternative 2 with respect to the Baker Alternative route. While Alternative 2 would avoid disturbance of approximately 50 acres of previous undisturbed desert, Alternative 3 would not avoid that disturbance. In the Baker area, Alternative 3 would have the same potential cultural resources impacts as the Proposed Project, and these would be greater than the impacts associated with Alternative 2.

At the Zzyzx, Silver Lake Pump Station, and Sunset Lateral Alternative routes, the known cultural resources impacts associated with Alternative 3 would be the same as those identified for Alternative 2.

Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. In addition, mitigation measure MM CULT-1g would require pre-construction surveys of the Sunset Lateral Alternative route, should that route be selected.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure will be installed. No ground-disturbing activities will take place and potential impacts to cultural resources resulting from current activities on the existing pipelines will remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems will be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines will remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, CA to Las Vegas, NV. No new significant impacts to cultural resources would result if the No Project Alternative is adopted.

3.8.3.3 Summary of Alternatives Comparison

All of the Alternatives will potentially impact eligible resources. As indicated in Table 3.8-3 there are differences in impacts based on the seven route variations.

Table 3.8-3 Cultural Resources Avoided by Alternative

	Alternative 1		Alternative 2		Alternative 3	
	Eligible/ Treat as Eligible	Not Eligible	Eligible/ Treat as Eligible	Not Eligible	Eligible/ Treat as Eligible	Not Eligible
Bloomington	0	2	1	1	N/A	N/A
Rialto Change	1	3	0	3	0	3
Wagon Train Road Change	0	2	0	0	0	0
Phelan Road/ Baldy Mesa	0	0	Survey pending	Survey pending	N/A	N/A
Zzyzx	0	1	0	0	0	0
Baker	0	1	0	0	N/A	N/A
Sunset Lateral	1*	1	Survey pending	Survey pending	Survey pending	Survey pending

Notes:
*Eligible but portion in APE not contributing
NA = Not Applicable

3.8.4 Summary of Mitigation

A complete list of mitigation measures/historic property treatments proposed for the Proposed Project will be developed pending consultation with lead federal and state agencies, cooperating federal agencies, the California and Nevada SHPOs, Indian tribes, representatives of local governments, other consulting parties to the Section 106 process, and the public. The mitigation measures for CEQA in Table 3.8-4 will be employed pending BLM approval and as long as they do not conflict with the measures consulted on and agreed to under the Section 106 process and any resulting agreement documents.

Based on the level of disturbance associated with the project, it is anticipated that there will be an adverse effect to historic properties. Therefore, it is anticipated that a Programmatic Agreement will be implemented to ensure the Project complies with Section 106 and implementing regulations (36 CFR 800).

Table 3.8-4 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Impact Cult-1: Adverse impact to an historic property or historical or archaeological resource.	**MM CULT-1a:** Avoidance. **MM CULT-1b:** Designation of Environmentally Sensitive Areas (ESAs). **MM CULT- 1c:** Data Recovery. **MM CULT-1d:** Historic Properties Treatment Plan (HPTP). **MM CULT-1e:** Supplemental Survey. **MM CULT-1f:** Monitoring. **MM CULT-1g:** Unanticipated Discoveries Plan.	Entire route	BLM, USFS, San Bernardino County	Pre-construction and during construction

References

Baldrica, A. 2009. Letter to Gayle Marrs-Smith, Bureau of Land Management regarding National Register of Historic Places site eligibility for CalNeV Expansion Project Stateline to Las Vegas, Clark County (Bureau of Land Management Report Number 5-2605).

Bean, L. J. and C. R. Smith. 1978. Gabrielino. *In Handbook of North American Indians, vol. 8: California.* Smithsonian Institution, Washington.

Bischoff, M. 2005. *Life in the Past Lane: The Route 66 Experience, Historic and Management Context for the Route 66 Corridor in California: Volume 1, Route 66 in the California Desert.* Statistical Research, Tucson, Arizona.

California Office of Historic Preservation (OHP). 2001. *California Office of Historic Preservation, Technical Assistance Series #1: California Environmental Quality Act (CEQA) and Historical Resource*s. Prepared by the California Department of Parks and Recreation, Office of Historic Preservation, Sacramento, California. http://ohp.parks.ca.gov/pages/1054/files/ts01ca.pdf (web site accessed February 2, 2011).

California Office of Historic Preservation (OHP). 2006. *California Office of Historic Preservation, Technical Assistance Series #3: California Register of Historical Resources: Questions and Answers.* Prepared by the California Department of Parks and Recreation, Office of Historic Preservation, Sacramento, California. http://ohp.parks.ca.gov/pages/1056/files/03Ca%20RegQ&A_090606.pdf (web site accessed February 2, 2011).

Cassity, M. 2004. *Route 66 Corridor National Historic Context Study*. Prepared for Route 66 Corridor Preservation Program National Trails System Office – Intermountain Region, National Park Service Santa Re, New Mexico. Prepared by Historical Research and Photography, Oklahoma.

Kelly, I. and C. S. Fowler. 1986. Southern Paiute. In *Handbook of North American Indians*. Vol. 11, *Great Basin*, Warren L.D'Azevedo, editor. Smithsonian Institution, Washington, D.C.

Kelly, I. T. 1934. Southern Paiute Bands. *American Anthropologist* 36(4): 548-560.

King, C. and Casebier, D.G. 1976. *Background to Historic and Prehistoric Resources of the East Mojave Desert Region, Prepared for the United States Department of Interior Bureau of Land Management, California Desert Planning Program.* Archaeological Research Unit, University of California, Riverside.

Larson, D.O. 1981. *A Study of the Settlement Patterns of Southern Nevada as Reflected by the Archaeological Records.* Western Anasazi Reports 3(1). Cedar City.

Moon, G. L. R. 1980. *Barstow Depots and Harvey Houses*. Mojave River Valley Museum Association, Barstow.

Sutton, M.Q., M. Basgall, J.K. Gardner, and M.W. Allen at al. 2007. Advances in the Understanding the Mojave Desert Prehistory. In *California Prehistory: Colonization,* *Culture and Complexity* edited by T.L. Jones and K.A. Klar, pp 229-245. Altimira Press, Lanham, Maryland.

URS Corporation. 2008. Draft Report *Volume I Proposed Calnev Expansion Project: Summary of the San Bernardino County, California and Clark County, Nevada Portions Cultural Resources Survey, BLM Class III.* Prepared for Bureau of Land Management, Barstow Field Office, Barstow, California. Prepared by URS Corporation, San Diego, California.

URS Corporation. 2009a. *Volume 1 and II: Proposed Calnev Expansion Project: California Portion, San Bernardino County, California, Cultural Resources Survey, BLM Class III.* Prepared for Bureau of Land Management, Barstow Field Office, Barstow, California; San Bernardino National Forest, Lytle Creek, California; and County of San Bernardino, San Bernardino, California. Prepared by URS Corporation, San Diego, California. October 2008, revised May 2009, revised December 2009.

URS Corporation. 2009b. *Proposed Calnev Expansion Project: California Portion, San Bernardino County, California, Architectural History Survey.* Prepared for Bureau of Land Management, Barstow Field Office, Barstow, California. Prepared by URS Corporation, San Diego, California. June 2009, revised November 2009.

Rogers, M.J. 1929. Stone Art of the San Dieguito Plateau. *American Anthropologist* 31(3):454-467.

Self, William. 2011. Electronic communication on May 9, 2011, from Bill Self, President, William Self Associates, Inc., Tucson, Arizona, to Jim Shearer, BLM Archaeologist Barstow Field Office. Subject: *Calnev Revised Site Table (Copy of MASTER TABLE – SITES).*

William Self Associates, Inc (WSA). 2009a. *Class III Cultural Resources Survey, Calnev Expansion Project, California State Line to Las Vegas, NV, Clark County, Nevada. Final Report.* Prepared for URS Corporation, San Diego, California. Prepared by William Self Associates, Orinda, California.

William Self Associates, Inc (WSA). 2009b. *Architectural Survey Report, Proposed Calnev Expansion Project, Nevada Portion, Clark County, Nevada.* Prepared for URS Corporation, San Diego, California. Prepared by William Self Associates, Orinda, California.

William Self Associates, Inc (WSA). 2010. *Class III Cultural Resources Survey Addendum for the Proposed Calnev Expansion Project, California Portion, San Bernardino, California (Draft Report).* Prepared for Calnev Pipe Line, LLC, Orange, California. Prepared by Brandon M. Gabler, Scott O'Mack, Michael J. Boley and John C. Ravesloot, William Self Associates, Tucson, Arizona.

Yohe II, R.M. and M.Q. Sutton. 1991. An Archaeological Assessment of Eight Alternative Access Routes into the Proposed Hidden Valley Hazardous Disposal Facility, San Bernardino County, California. On file at the Archaeological Information Center, San Bernardino County Museum, Redlands.

3.9 Paleontological Resources

This section describes paleontological resources that may be affected by the Proposed Project. This section also discloses impacts to paleontological resources and discusses appropriate mitigation measures to reduce impacts to these resources. Information presented in this section was derived from the draft Paleontological Resources Assessment for the Proposed Project (URS Corporation [URS] 2008), the paleontology literature and records review for the Proposed Project (San Bernardino County Museum [SBCM] 2008), and the records search results for the Proposed Project (National History Museum of Los Angeles County [NHMLAC] 2008).

During the scoping period, government agencies and members of the public did not identify any issues or concerns related to paleontological resources in the project area.

3.9.1 Affected Environment

This section discusses paleontological resources (i.e., fossils) located within the right-of-way (ROW). Fossil-bearing geologic units within the ROW are represented by geologic regions including the Los Angeles-San Bernardino Basin, the Transverse Ranges, and the Mojave Desert (Figure 3.2-2). The pipeline ROW primarily traverses undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States Forest Service (USFS) and the Department of Defense (DoD). Lands under the jurisdiction of the State of California, the State of Nevada, San Bernardino County and Clark County are also crossed by the pipeline ROW. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

3.9.1.1 Overview of Paleontological Resources

Section 3.2, Topography, Geology, and Geologic Hazards, includes four maps of the surface geology along the project route (Figure 3-3, Maps 1 to 4) that support the following description of paleontological resources (URS Corporation 2008).

The southern end of the Proposed Project area, from Colton to the northern base of the San Bernardino Mountains, crosses geologic deposits consisting of coarse-grained granitic gravel and cobbles. From Keenbrook north, the pipeline ROW crosses or borders exposures of igneous rock (i.e., volcanic and plutonic) or metamorphic rock.[1] The San Andreas Fault cuts through the Transverse Ranges at Cajon Pass, an area with a variety of geologic features. The features include conglomeratic sandstone formations known as the “Mormon Rocks” that were deposited as a result of San Andreas Fault activity that dates from 7 to 20 million years ago (mya).

Several areas known to contain paleontologic resources have been identified from surface and subsurface rocks of the Cajon and Crowder Formations in the Cajon Pass region. The Cajon Formation contains fossils of terrestrial (primarily occupying land) vertebrates (creatures with a skeletal backbone), invertebrates (creatures without a skeletal backbone), and plants. The Cajon Formation was deposited about 17 to 13.5 mya (Miocene). North of the San Andreas Rift Zone the pipeline ROW crosses exposed surfaces of plutonic igneous rocks (those solidified far

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[1] Rock in which the original composition or texture has changed as a result of being subjected to high temperature or high pressure.

below the Earth's surface) and deposits of the earlier Miocene (about 5 to 25 mya) Punchbowl Formation. Vertebrate fossil localities in this vicinity of the Punchbowl Formation include fossil specimens of elephant, squirrel, horse, and pronghorn antelope. North of Cajon Canyon, the pipeline ROW crosses an uninterrupted area of older Quaternary Alluvium (river deposits). North of Oro Grande Wash and the intersection of Interstate 15 and Highway 395, the pipeline ROW crosses younger Quaternary Alluvium to the north of Southern California Logistics Airport. The closest vertebrate fossil localities in similar kinds of deposits contain fossils of gopher snakes, kingsnakes, leopard lizards, cottontail rabbits, pocket mice, kangaroo rats, and pocket gophers.

The sediments of the Baldy Mesa, Victorville, and Adelanto areas, beyond the north slopes of the San Bernardino Mountains, are sands and silts with cobbles. After crossing the Mojave River and its flood plain, the pipeline ROW crosses desert pavement (large, flat, compacted and vegetation-free areas) with cobbles of many rock types. Along the southern edge of Barstow are Quaternary silts with some cobbles. From here, desert pavement continues to the sands of the Cronise Valley and East Cronise Lake. Surficial (exposed surface) deposits of East Cronise Lake are of Holocene age (about 10,000 years ago) with the youngest deposits dating to about 450 years ago. After the pipeline ROW crosses Interstate 40 and turns northeastward, it crosses or borders exposures of igneous rocks and a middle Miocene (about 11 to 16 mya) sedimentary deposit just south of Elephant Hill. Near the community of Toomey, the pipeline ROW crosses some exposures that possibly represent the Barstow Formation, including a vertebrate fossil locality that produced a fossil horse specimen.

Northeast of the community of Manix, around Manix Wash, fossils of middle to later Pleistocene age (about one mya) have been found of extinct mammals such as mammoths, camels, llamas, large and small horses, ground sloths, dire wolves, and, short-faced bears; fossil representatives of extant mammals include coyotes, pronghorns, sheep, jackrabbits, and mice. Rare fossils of birds including pelicans, storks, flamingos, swans, geese, ducks, gulls, and eagles are significant additions to the Lake Manix fauna. At Soda Lake, deposits of the late Miocene Avawatz Formation include fossils of lizards, birds, rabbits, mice, dogs, cats, horses, camels, and pronghorn antelope.

West of Baker, the pipeline ROW crosses small hills containing granitic bedrock and Quaternary lake deposits of the dry Soda Lake. In the elevated terrain around Halloran Spring, the pipeline ROW borders or crosses exposures of Precambrian (rocks older than 570 mya) metamorphic rocks, granitic igneous rocks, and Pleistocene volcanic rocks. In the Shadow Valley between the Halloran Summit and the Mescal Range, the pipeline ROW crosses expanses of Quaternary Alluvium around Valley Wells. Between the Mescal Range and the Clark Mountain Range the pipeline ROW crosses Precambrian bedrock. From here, desert pavement and gravel continue, interrupted by some Paleozoic (230 to 570 mya) limestone and Ivanpah Dry Lake, to the Las Vegas Valley. The Las Vegas Formation occurs in the Las Vegas Valley, and contains vertebrate fossils of Pleistocene age, including amphibians, birds, and a variety of mammals including Shasta ground sloth, flat-footed ground sloth, extinct lion or jaguar, extinct large camel, extinct large and small horse, bison, and Columbian mammoth.

3.9.1.2 Federal Fossil Yield Classification Systems

There are two classification systems in place for rating a geologic unit's potential to contain paleontological resources. These two systems are described below. For consistency and ease of understanding, this Environmental Impact Statement(EIS)/Environmental Impact Report(EIR) has applied the BLM's Potential Fossil Yield Classification (PFYC) system to all geologic units.

Potential Fossil Yield Classification

The BLM's PFYC system is used to classify various types of geologic units—groups of rock or ice with distinct identifying features—based on the:

1) Abundance of fossils commonly found in a geologic unit; and
2) Sensitivity of fossils commonly found in a geologic unit to adverse impacts.

There are five classes in the PFYC system: Class 1 (very low), Class 2 (low), Class 3 (moderate or unknown), Class 4 (high), and Class 5 (very high) (BLM 2007). The classes are used to indicate the relative abundance of fossils commonly found in a geologic unit.

The letters "a" and "b" are applied to Classes 3 to 5 to indicate the potential for adverse impacts to fossils due to surface-disturbing activities as follows: Class 3a (moderate potential), Class 3b (unknown potential), Class 4a (high potential), Class 4b (high potential with moderating circumstances), Class 5a (very high potential), Class 5b (very high potential with moderating circumstances). The term "moderating circumstances" indicates that though there is a high potential for adverse impact, the potential is lowered by moderating circumstances (e.g., a bedrock unit with a protective layer of soil, thin alluvial material, or other condition that may lessen or prevent potential impacts).

Fossil Yield Potential Classification

The PFYC was originally developed by the United States Forest Service's (USFS) Paleontology Center of Excellence and named the FYPC. The USFS continues to maintain the FYPC system to classify geological units according to their probability of yielding paleontological resources (USFS 2001). Similar to the PFYC, the FYPC maintains five classes to describe the probability for geological units to yield paleontological resources: Class 1 (not likely to contain recognizable fossil remains), Class 2 (not likely to contain vertebrate fossils or scientifically significant fossils), Class 3 (fossil content varies in significance, abundance, and predictable occurrence; also sedimentary units of unknown fossil potential), Class 4 (geologic units have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation), and Class 5 (regularly and predictably produces vertebrate fossils and/or scientifically significant plant and invertebrate fossils and are at risk of natural degradation and/or human-caused impacts).

3.9.1.3 Summary of Paleontological Surveys

In August and September 2008, URS Corporation conducted a survey of paleontological resources along a 150 foot wide strip centered on the proposed pipeline corridor. Table 3.9-1 presents the results of this survey.

The Proposed Project area contains formations known to contain paleontological resources assigned PFYC classifications 5, 4, and 3b (URS Corporation 2008). About seven percent of the length crossed by the Proposed Project is known to contain paleontological resources that have a Class 5 rating. This rating indicates the presence of fossil-bearing geologic units that consistently and predictably produce vertebrate fossils or scientifically important invertebrate or plant fossils. About three percent of the length crossed by the Proposed Project is known to contain paleontological resources in the Proposed Project area and have a Class 4 rating. Geologic units with Class 4 and 5 ratings include the Crowder Formation, the Cajon Valley

Formation, some Quaternary sediments, and some Quaternary lake deposits. About 39 percent of land crossed by the Proposed Project has a Class 3b rating for paleontological resources (URS Corporation 2008).

The PFYC ratings of the various segments of the pipeline route were determined by URS based on review of published and unpublished paleontological literature and geologic maps, research review findings, and field observations. Recommendations for potential mitigation are based on the PFYC ratings and may be revised once construction activities commence based on findings in the field. Recommendations for periodic review during ground disturbing activities can be guided based on the nature of the geologic units revealed during construction. For example, units containing caliche-cemented gravels and cobbles are not typical fossil bearing units and could be inspected once a day or on alternate days. Former lake beds and well-sorted sands and gravels are more likely to contain fossil remains and should be checked more regularly, at least twice a day. Should fossil remains be detected along any segments, photographs and measurements may be required to document the geology and context before fossils are recovered (URS Corporation 2008).

Table 3.9-1 Paleontological Survey Results and Proposed Mitigation

Segment	Milepost	Geologic Units	PFYC Rating	Recommended Mitigation
Fontana to Institution Road	0 - 12.2	Qoed, Qw, Qyf	2	No mitigation
		Qof	3b	Periodic review during ground-disturbing activities
Bloomington Alternative	2.9 - 4.3	Qyf	2	No mitigation
		Qof	3b	Periodic review during ground-disturbing activities
Flood Berm Alternative	7.3 - 8.2	Qoed, Qyf	2	No mitigation
Rialto Alternative	9 - 10.4	Qyf	2	No mitigation
Institution Road to I-15	12.2 - 15.6	Qvof	3b	Periodic review during ground-disturbing activities
		Qw, Qyf	2	No mitigation
		Kpg, Tgtp	1	No mitigation
I-15 to Blue Cut	15.6 - 20.6	Qf, Qw, Qyf	2	No mitigation
Blue Cut to Cajon	20.6 - 23.7	Kpg, Kps	1	No mitigation
		Qw, Qyf	2	No mitigation
		Kcd	4	Full-time monitoring during ground disturbing activities
		Tcv, Qyls	5	Full-time monitoring during ground disturbing activities
Cajon to Cajon Junction	23.7- 25	Qw, Qyf	2	No mitigation
Wagon Train Alternative	24.1 - 25.5	Qyf	1	No mitigation
		Tcr, Tcv	5	Full-time monitoring during ground disturbing activities

Table 3.9-1 Paleontological Survey Results and Proposed Mitigation

Segment	Milepost	Geologic Units	PFYC Rating	Recommended Mitigation
Cajon Junction to Baldy Mesa ascent	25 - 28.5	Tcv	5	Full-time monitoring during ground disturbing activities
		Qof	3b	Periodic review during ground-disturbing activities
		Qyf	2	No mitigation
Baldy Mesa and its ascent	28.5 - 32.2	Qyw	2	No mitigation
		Qvof	3b	Periodic review during ground-disturbing activities
Victorville and Adelanto	32.3 - 47	Qyf, Qyw	2	No mitigation
Adelanto	42 - 47	Qyf	2	Periodic review during ground-disturbing activities
Highway 395 Alternative	44.2 - 44.3	Qyf	2	Periodic review during ground-disturbing activities
George Air Force Base	47 - 53	Qyf	2	Periodic review during ground-disturbing activities
West bank of the Mojave River	53 - 54	Qod	3b	Periodic review during ground-disturbing activities
Mojave River Alternative	53.5 - 54.7	Qw	2	No mitigation
Mojave River bed	54 - 55.4	Qw	2	No mitigation
Robinson Ranch Road access road	54	Qw	2	No mitigation
Helendale	55.4 - 59	Q, Qo, Qod	2	No mitigation
Brynam Road access road	58	Q, Qo	3b	Periodic review during ground-disturbing activities
Silver Mountains	59 - 62.6	KJqm, Mzv	1	No mitigation
Cardigan Road access road from Brynam Road to MP 61	61	Q, Qo, Qod	3b	Periodic review during ground-disturbing activities
		KJqm, Mzv	1	No mitigation
Wild Wash Road to Outlet Center Road	62.6 - 72.4	Q, Qo	3b	Periodic review during ground-disturbing activities
		KJqm, granitic bedrock	1	No mitigation
Wild Wash access road	I-15 - 64	Q	3b	Periodic review during ground-disturbing activities
Stoddard Mountain Road access road	68	Q, Qo	3b	Periodic review during ground-disturbing activities
Outlet Mall Road to I-15 crossing	72.4 - 76	Q, Qod, Qo	3b	Periodic review during ground-disturbing activities
		Granitic bedrock	1	No mitigation
Outlet Mall access road	I-15 - 72.4	Q, Qod	3b	Periodic review during ground-disturbing activities
I-15 to L Street	76 - 78.4	Q, Qod	3b	Periodic review during ground-disturbing activities
L Street to Highway 257	78.4 - 80.8	Qod	3b	Periodic review during ground-disturbing activities

Table 3.9-1 Paleontological Survey Results and Proposed Mitigation

Segment	Milepost	Geologic Units	PFYC Rating	Recommended Mitigation
Lenwood Road access road	76	Q	3b	Periodic review during ground-disturbing activities
Highway 257 to I-40	80.8 - 85.8	Q, Qod	3b	Periodic review during ground-disturbing activities
I-40 to far side of Piedmont Mountains	85.8 - 88.5	Mc	3b	Periodic review during ground-disturbing activities
		Mia	1	No mitigation
		Q	3b	Periodic review during ground-disturbing activities
North side of Mojave River	88.5 - 96	Q	5	Full-time monitoring during ground disturbing activities
Minneola Road to Alvord Mountain Road	96 - 103	Q	3b	Periodic review during ground-disturbing activities
Alvord Mountain Road to Field Road	103 - 112	Q	3b	Periodic review during ground-disturbing activities
		Qol, Qo	5	Full-time monitoring during ground disturbing activities
		Qw	2	No mitigation
Field Road to I-15	112 - 117.9	Q, Qw	4	Full-time monitoring during ground disturbing activities
I-15 to Afton Canyon Road	117.9 - 119.6	Qw	2	No mitigation
		Q	5	Full-time monitoring during ground disturbing activities
Afton Canyon Road to Basin Road	119.6 - 128.3	Qpc, Q	3b	Periodic review during ground-disturbing activities
		gr-mz	1	No mitigation
		Qw	2	No mitigation
Basin Road to Riser Road	128.3 - 131.7	Q	3b	Periodic review during ground-disturbing activities
Basin Road access road	128.6	Q	2	No mitigation
Riser Road to Zzyzx Road	131.7 - 138.2	gr-mz, Tv	1	No mitigation
		Q	3b	Periodic review during ground-disturbing activities
		Qw	2	No mitigation
Zzyzx Road to Nickel Mountain	138.2 - 144	Q, Tc	3b	Periodic review during ground-disturbing activities
		Qw	2	No mitigation
Baker Alternative	141.5 - 145.5	Q	3b	Periodic review during ground-disturbing activities
		Ql	4	Full-time monitoring during ground disturbing activities
Soda Lake - Silver Lake connection	144 - 146.5	Ql/Qw	3b	Periodic review during ground-disturbing activities
Baker to Halloran Springs	146.5 - 158.1	Q, Qal	3b	Periodic review during ground-disturbing activities

Table 3.9-1 Paleontological Survey Results and Proposed Mitigation

Segment	Milepost	Geologic Units	PFYC Rating	Recommended Mitigation
Halloran Springs to Kingston Wash	158.1 - 170.8	Qal	3b	Periodic review during ground-disturbing activities
MP 168.2 access road	168.2	Qal	3b	Periodic review during ground-disturbing activities
Unnamed lake	170.8 - 172	Ql	5	Full-time monitoring during ground disturbing activities
Cima Road to Mountain Pass Mine	172 - 182.5	Q, Qal, Qc	3b	Periodic review during ground-disturbing activities
		Ipls	2	No mitigation
Mountain Pass Mine to Yates Well Road	182.5 - 190.9	Q	3b	Periodic review during ground-disturbing activities
		Qap, Qapf, Qia, Qya, Qyae, Qypf	2	No mitigation
Nipton	182.5 - 185.9	epC	1	No mitigation
		Q	3b	Periodic review during ground-disturbing activities
Yates Well Road to state line	190.9 - 195	Qap, Qapf, Qyag, Qyaog, Qypf	2	No mitigation
Yates Well access road	191	Qap, Qapf, Qyae, Qyao, Qypf	2	No mitigation
State line to Jean	195 - 208	Qap, Qapf, Qiag, Qya, Qyae, Qyag, Qyaog, Qye, Qypf	2	No mitigation
Primm access road	198	Qapf + Qypf	2	No mitigation
		Qia + Qya	3b	Periodic review during ground-disturbing activities
Jean to Sloan	208 - 220.9	QToa, Qha/fv, Qoa, Qha/ca	3b	Periodic review during ground-disturbing activities
		Qye, Qya, Qia	2	No mitigation
MP 209.4 access road	209.4	Qya	2	No mitigation
Sloan to Las Vegas	220.9 - 233.5	Qau, Qia, Qayy, Qya	2	No mitigation
		Qha/ca, Qoa	3b	Periodic review during ground-disturbing activities
		Qts	5	Full-time monitoring during ground disturbing activities

Source: URS 2008

epC	early Precambrian metamorphic rocks
gr-mz	Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite
Ipls	Paleozoic marine limestone or dolomite
Kcd	Cretaceous sedimentary rocks of the Cosy Dell area
KJqm	Cretaceous or Jurassic quartz monzonite
Kpg	Pelona Schist greenstone unit
Kps	Pelona Schist muscovite schist unit
Mc	unnamed Miocene continental deposits
Mia	Miocene shallow intrusive andesite

Mzv	Mesozoic volcanic rocks
Tc	undifferentiated Tertiary sandstone, shale, and others
Tcr	Crowder Formation
Tcv	Cajon Valley Formation
Tgtp	granodiorite or Telegraph Peak
Q	undifferentiated Quaternary sediments
Qal	Quaternary alluvium - undifferentiated
Qap	active playa deposits
Qapf	active playa fringe deposit
Qau	undivided young and intermediate Quaternary alluvium
Qayy	youngest alluvium
Qc	Pleistocene nonmarine
Qf	very young alluvial fan deposits
Qha/ca	abundant Quaternary hill slope deposit/carbonate rocks
Qha/fv	abundant Quaternary hill slope deposit/felsic volcanic rocks
Qia	intermediate Quaternary alluvial fan deposits
Qiag	intermediate Quaternary alluvial fan deposits composed of grus
Ql	Quaternary lake sediments
Qo	older alluvium - dissected alluvial fans
Qoa	old Quaternary alluvial fan deposit
Qod	well dissected alluvial fans
Qoed	old eolian deposits (dune sand)
Qof	old alluvial fan deposits of Pleistocene age
Qol	older Quaternary lake deposits
Qpc	Pliocene and/or Pleistocene continental deposits
Qtoa	oldest Quaternary Tertiary fan deposits
Qts	undivided fin-grained Quaternary sediments of the Las Vegas Valley
Qvof	very old Quaternary alluvial fan deposits
Qw	Quaternary wash deposits
Qya	young Quaternary alluvial fan deposit
Qyae	young Quaternary mixed alluvial and eolian sand deposit
Qyaog	young alluvial fan deposit composed of grus
Qye	young Quaternary eolian sand deposit
Qyf	young Quaternary alluvial fan deposits
Qyls	young Quaternary landslide deposits
Qypf	young playa fringe deposit
Qyw	very old Quaternary alluvial fan deposits

3.9.2 Applicable Regulations, Plans, and Policies

3.9.2.1 Federal

Paleontological Resources Preservation Act (PRPA) of 2009

The PRPA provides protection for vertebrate paleontological resources on federal lands by limiting the collection of vertebrate fossils and scientifically important fossils to permitted and qualified researchers.

Antiquities Act of 1906 Public Law 59-209; 16 United States Code (USC) 431 et seq.

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 National Park Service (NPS 2007). This Act does not refer to paleontological resources specifically; however, the protection of "objects of antiquity" (understood to include paleontological resources) by various federal agencies, including the BLM and the National Park Service (NPS), is included in the Act.

Archeological Resources Protection Act (ARPA) 1979

ARPA requires protection of non-fossilized and fossilized paleontological specimens, or any portion or piece thereof, if found in an archeological context.

Federal Land Policy and Management Act of 1976, as amended (FLPMA)

The FLPMA provides protection for the scientific quality of scientific resources on federal lands including paleontological resources (BLM and Office of the Solicitor 2001). Protection and preservation of significant paleontological resources as scientific resources are adhered to under 43 CFR by the BLM and 36 CFR by the USFS.

National Natural Landmarks Program

The National Natural Landmarks Program, administered by the NPS, encourages the preservation of the nation's best examples of geologic features and identifies landmarks at risk of degradation or damage.

National Historic Preservation Act of 1966 (NHPA)

The NHPA requires an analysis of the effect of federal undertakings on paleontological resources.

United States Forest Service

The USFS adheres to the following federal guidelines with regard to paleontological resources:

- Organic Act of 1897: Provides the USFS with the authority to protect and preserve forests from destruction;
- Petrified Wood Act of 1962: Establishes petrified wood as mineral material;
- Archaeological and Historical Conservation Act of 1974: Provides for the preservation of historical and archeological data threatened by dam construction or alterations of terrain; and
- Federal Cave Resources Protection Act of 1988: Provides for the protection of fossils in cave contexts.

The USFS also adheres to the following federal mandates implemented to protect paleontological resources:

- Crimes and Criminal Procedures (USC 641): Stipulates that unauthorized collected fossils are government property;
- 36 CFR 261.9 (i): Stipulates no commercial collecting; allows for the authorized collection of vertebrate fossils for scientific/educational purpose only; and
- 36 CFR 228 Subpart A: Provides the authority to minimize adverse environmental impacts on surface resources.

3.9.2.2 State

State of California

Public Resources Code § 5097 to 5097.6

Public Resources Code §5097 to 5097.6 provides guidance for state agencies in the management of archaeological, paleontological, and historical sites affected by major public works projects on state land.

Administrative Code Title 14, § 4307

Administrative Code Title 14, § 4307 addresses removal, injury, defacement or destruction of any object of paleontological value.

County of San Bernardino

The County of San Bernardino (Development Code §82.20.030) addresses paleontologic mitigation program requirements, as follows:

1) In areas of potential but unknown sensitivity, field surveys before grading shall be required to establish the need for paleontological monitoring.
2) A project that requires grading plans and is located in an area of unknown fossil occurrence, or that has been demonstrated to have fossils present in a field survey, shall have all grading monitored by trained paleontologic crews working under the direction of a qualified professional, so that fossils exposed during grading can be recovered and preserved.
3) Qualified paleontologic personnel shall prepare recovered specimens to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Preparation and stabilization of all recovered fossils is essential in order to fully mitigate adverse impacts to the resources.
4) Qualified paleontologic personnel shall identify and curate specimens into an established, accredited museum repository with permanent retrievable paleontologic storage. These procedures are also essential steps in effective paleontologic mitigation and California Environmental Quality Act (CEQA) compliance. Mitigation of adverse impacts to significant paleontologic resources is not considered complete until curation into an established museum repository has been fully completed and documented.
5) Qualified paleontologic personnel shall prepare a report of findings with an appended itemized list of specimens. The report and inventory, when submitted to the appropriate Lead Agency along with confirmation of the curation of recovered specimens into the collection of the San Bernardino County Museum (SBCM), will signify completion of paleontologic mitigation programs.

The San Bernardino County General Plan's Conservation Element states that the County will preserve and promote its historic and prehistoric cultural heritage, protect paleontological resources within the Desert Region, and protect paleontological resources within the Mountain Region.

City of Barstow General Plan

Goal IV.2: of the Cultural Resources Element addresses preservation and protection of important paleontological features and sites from degradation and destruction.

City of Victorville General Plan Resource Element

Goal I Policy 1.3 of the Resource Element states that the City will continue to support efforts to identify as well as require the protection or salvaging of significant paleontological resources threatened by development.

State of Nevada

Nevada Revised Statutes 381.195 to 381.227, inclusive

Nevada Revised Statutes 381.195 to 381.227, inclusive, address Antiquities Permits in the State of Nevada, including the requirements for holding the Permit, and penalties for violation of Permit requirements. The Antiquities Permit is required to investigate, explore, or excavate a prehistoric site, including natural monuments and objects of antiquity

3.9.2.3 Professional Standards and Guidelines

Society for Vertebrate Paleontology (SVP)

The SVP provides standards for conducting paleontological resource monitoring and mitigation activities and curation of resulting fossils (SVP 1995, 1996) and assessment of potential impacts on paleontological resources.

3.9.3 Environmental Consequences

3.9.3.1 Requirements and Focus of National Environmental Policy Act (NEPA) versus CEQA Impact Analyses

Potential Impacts to be Evaluated Under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential impacts to paleontological resources have been identified for evaluation:

- The potential for the Proposed Project to destroy a sensitive paleontological resource (addressed as PALEO-1 below); and
- The potential for construction activities to destroy or disturb an unknown sensitive paleontological resource (addressed as PALEO-2 below).

CEQA Significance Criteria

Under CEQA, the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to paleontological resources, the relevant CEQA significance criteria provided in Section V of the checklist are based on whether the proposed project would:

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (addressed as part of PALEO-1 and PALEO-2 below).

3.9.3.2 Impact Analyses

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under NEPA and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Mitigation measures (MMs) are compiled in Section 3.9.4, Summary of Mitigation.

Proposed Project/Proposed Action (Alternative 1)

Impact Paleo-1: Destruction of a Sensitive Paleontological Resource.

Surface disturbing activities could adversely affect highly fossiliferous geologic units assigned a PFYC class of 5 that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils. Surface disturbing activities could also adversely affect fossils assigned a PFYC class rating of 4 located in geologic units that contain a high occurrence of significant fossils. If fossils were encountered, impacts would be significant under CEQA.

Implementation of MM PALEO-1a through MM PALEO-1g would reduce impacts under CEQA to less than significant levels. With implementation of mitigation measures, there would be no residual impacts under NEPA.

- **MM PALEO-1a: Applicant Retention of Qualified Project Paleontologist.** Prior to construction, the Applicant would retain a qualified paleontologist (Project Paleontologist) to supervise monitoring of construction excavations for the Proposed Project. The paleontologist would be permitted through the USFS permitting process. The Project Paleontologist would have authority to temporarily divert grading away from exposed fossils in order to recover fossil specimens. The Applicant would be required to obtain all necessary permits for land access and specimen collection for paleontological investigations prior to and during construction.
- **MM PALEO-1b: Paleontological Mitigation and Monitoring Plan.** The Project Paleontologist would prepare a Paleontological Mitigation and Monitoring Plan (PMMP) to ensure paleontological resources would not be adversely affected and that would reduce impacts on paleontological resources to less than significant levels. Field surveys have already been completed, and relevant information obtained during the surveys would be incorporated into the Plan. The PMMP would include a review of pertinent paleontologic and geologic literature; a check of pertinent locality records; and summaries of the field surveys conducted along the Proposed Project corridor (including all facilities, staging areas, and access roads); and would confirm determinations of paleontologic sensitivity along the route. Additional field surveys, if unsurveyed areas are identified, would include the inspection of exposed rock units and microscopic

examination. The PMMP would also address the treatment of paleontologic resources discovered during construction. Specific guidelines for paleontological resource monitoring would be included in the PMMP.

- **MM PALEO-1c: Paleontological Awareness Training for Project Crews.** The Applicant would require that all construction staff would participate in a paleontological resources orientation workshop that would provide general training and procedures to be implemented in the event fossil remains are encountered by ground-disturbing activities. Workshop curriculum would be determined by a qualified paleontologist. Paleontological awareness training protocol would be detailed in the PMMP.
- **MM PALEO-1d: Construction Monitoring.** Ground-disturbing activities in rock units having high paleontologic sensitivity (PFYC designations 3, 4, 5) would be monitored on a part-time or full-time basis by a qualified paleontological construction monitor, with experience in the region, retained by the Applicant and overseen by the Applicant's Project Paleontologist. Full-time monitoring would occur in previously undisturbed sediments subject to earth-moving activities. Once monitoring of the earth-moving activities is completed for a segment and trench walls have been inspected, no more monitoring is required for that segment. All monitoring would be performed with required permits applicable to the respective jurisdiction of the Proposed Project and paleontological monitoring areas. Monitoring procedures would be detailed in the PMMP.
- **MM PALEO-1e: Identification and curation of specimens.** Paleontological specimens identified and collected during construction would be reposited in the Division of Geological Sciences, SBCM. The Applicant would obtain a written repository agreement with the SBCM prior to Proposed Project commencement. Mitigation of adverse impacts to significant paleontologic resources would be considered incomplete until all collected specimens have been accessioned into the SBCM's collection. Procedures for the retention of specimen provenance information, specimen identification, and specimen curation would be detailed in the PMMP.
- **MM PALEO-1f: Preparation of Monthly Monitoring Progress Reports.** The Project Paleontologist would document monthly interim results of all paleontological actions and submit these documents to the BLM, USFS, County of San Bernardino, and the Division of Geological Sciences, SBCM and, if applicable, the Nevada State Museum, Las Vegas, within ten business days following the end of the report month.
- **MM PALEO-1g: Analysis of Paleontological Resources and Preparation of a Final Paleontological Resource Recovery Report (PRRR).** The Project Paleontologist would prepare a final PRRR following Proposed Project construction and supply copies to the BLM, USFS, the County of San Bernardino, the SBCM, and, if applicable, the Nevada State Museum, Las Vegas, within 90 calendar days following completion of Proposed Project construction. The PRRR would include documentation of any and all significant paleontological resources in the Project Area of Potential Effect (APE), summarize construction monitoring, and present the results of the PMMP. The report would be prepared in accordance with the Lead Agencies, the Applicant, SVP guidelines, and all other applicable requirements. Content required for production of the PRRR would be detailed in the PMMP.

Impact Paleo-2: Construction activities would destroy or disturb an unknown sensitive paleontological resource.

Ground-disturbing activities have the potential to disturb unknown paleontological resources in formations assigned a PFYC class of 3b. Occurrences of paleontological resources are closely tied to the geologic units that contain them; therefore, the probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface.

If paleontological resources were encountered, these impacts could be significant under CEQA. Implementation of MM PALEO 2 would reduce impacts to undiscovered paleontological impacts to less than significant levels. With implementation of mitigation measures, there would be no residual impacts under NEPA.

- **MM PALEO-2a: Monitoring.** Ground-disturbing activities in rock units where significant fossils could be present would be monitored by a paleontological construction monitor. Monitoring activities are dependent upon the circumstances of the earth-moving activity and the specific nature and circumstances of the unit or units being impacted. Monitoring would be conducted by a qualified Project Paleontologist with experience in the region. All monitoring would be performed with required permits applicable to the respective jurisdiction of the Proposed Project and paleontological monitoring areas. Monitoring procedures would be detailed in the PMMP.
- **MM PALEO-2b: Paleontological Resources Testing and Recovery.** Construction activities would be temporarily stopped in the event of an unanticipated paleontological discovery in the course of subsurface disturbance. In the event a Project Paleontologist is not on site at the time of the discovery, the Applicant would notify all concerned parties (including the District Ranger if on National Forest Service land) and the Project Paleontologist. To expedite salvage of a paleontological resource, the Project Paleontologist would have the authority to request the assistance of Proposed Project resources (e.g., heavy machinery or construction staff) to remove the resource and relocate it to a designated stockpile area. Construction would resume at the discovery location after the Project Paleontologist has authorized Proposed Project activities to resume. The Project Paleontologist would identify and curate recovered paleontological specimens in accordance with the PMMP.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to paleontological resources associated with the seven route variations are described below:

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to paleontological resources. No paleontological resources were identified in either area during resource surveys. In addition, both segments are in an urban area in which soils that would be disturbed by construction have already been disturbed. Therefore, the potential paleontological resource impacts associated with the Bloomington route would be the same as those identified for the Proposed Project.

Rialto Alternative

The Rialto Alternative route variation, and the segment of the Proposed Project that it would replace within the City of Rialto, do not have any differences with respect to paleontological resources. No paleontological resources were identified in either area during resource surveys. In addition, both segments are in an urban area in which soils that would be disturbed by construction have already been disturbed. Therefore, the potential paleontological resource impacts associated with the Rialto route would be the same as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route, and the segment of the Proposed Project that it would replace within the unnamed riparian area, do not have any differences with respect to paleontological resources. No paleontological resources were identified in either area during resource surveys. However, the Wagon Train Road horizontal directional drilling (HDD) would involve a drilling operation underneath Interstate 15, a subsurface area that cannot be surveyed prior to construction. Similarly, construction of the Proposed Project would require implementation of mitigation measure MM WR-5, which would require the use of the HDD construction method under the unnamed riparian area. Therefore, the potential paleontological resource impacts associated with the Wagon Train Road route would be the same as those identified for the Proposed Project.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa route would increase the length of the pipeline by approximately 0.8 miles. The longer length of the pipeline would slightly increase the amount of soil disturbance, and therefore may have a slightly increased risk of potential impacts to paleontological impacts during construction. However, no paleontological resources were identified during surveys of either area, and therefore, the potential paleontological resource impacts associated with the Phelan Road/Baldy Mesa route would be the same as those identified for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, may potentially be different with respect to paleontological resources. The Proposed Route would be constructed over a bedrock-based topographic high, while the alternative would be constructed within an active wash. Because the potential for the occurrence of paleontological resources is low within an active wash, the risk to existing resources would be lower for the alternative route than for the Proposed Project. However, no paleontological resources were identified during surveys of either area. Although the risk to paleontological resources may be slightly lower for the alternative route, there are not expected to be any adverse impacts associated with either the Proposed Project or the alternative route.

Baker Alternative

The Baker Alternative route would shorten the length of the pipeline by approximately 0.6 mile. The shorter length of the pipeline would slightly reduce the potential for impacts to paleontological resources during construction. In addition, the alternative route would pass primarily through developed areas within the town of Baker, and would therefore involve construction in areas that have already been disturbed. Although no paleontological resources were identified in the surveys of either area, the risk of encountering such resources would be slightly lower along the alternative route.

Silver Lake Pump Station Alternative

The alternative and Proposed Action locations for the proposed Silver Lake Pump Station do not have any differences with respect to paleontological resources. Because the Proposed location occurs adjacent to a switchyard and school, and the alternative location occurs in an undeveloped area, any potential disturbance of paleontological resources would be slightly higher at the alternative location than the Proposed location. Although no paleontological resources were identified in the surveys of either area, the risk of encountering such resources would be slightly higher at the alternative location, because that location is in an area which has not been previously disturbed.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation, and the segment of the Proposed Project that it would replace that passes through Bracken Junction, do not have any differences with respect to paleontological resources. No paleontological resources were identified in either area during resource surveys. In addition, both segments are in an urban area in which soils that would be disturbed by construction have already been disturbed. Therefore, the potential paleontological resource impacts associated with the Sunset Lateral alternative would be the same as those identified for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to paleontological resources.

Summary

Overall, Alternative 2 would have a slightly increased level of impacts as compared to the Proposed Project. In some areas (such as the Zzyzx route), Alternative 2 would have a reduced potential for impacts because the alternative route would pass through an active wash, as opposed to a bedrock-based location, Similarly, use of the Baker alternative route would have a reduced risk of impacts because it would occur in an area that has already undergone soil disturbance. The location of the Silver Lake Pump Station in Alternative 2 would provide a slightly higher risk of impacts to paleontological resources, because it would occur in area which has previously been undisturbed. MM proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. These mitigation measures would reduce the level of impacts under CEQA to less than significant.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. With respect to paleontological resources, Alternative 3 would incorporate the reduced impacts to soil resources associated with Zzyzx alternative route, but would also incorporate the slightly higher risk of impacts at the Silver Lake Pump Station location. All other paleontological resources impacts under both NEPA and CEQA would remain the same as Alternatives 1 and 2.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure would be installed. No ground-disturbing activities would take place and potential impacts to paleontological resources resulting from current activities on the existing pipelines would remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems would be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines would remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, CA to Las Vegas, NV. No paleontological resource impacts are associated with the current operations.

For the purposes of CEQA, no significant impacts to paleontological resources would result if the No Project Alternative is adopted.

3.9.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.9-2, there are differences in impacts based on the route variations.

Table 3.9-2 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
Potential impacts include damage to resources during construction. Impacts would be mitigated.	Slightly longer route increases threats to unidentified resources. Impacts would be mitigated.	Slightly longer route increases threats to unidentified resources. Impacts would be mitigated.	No impacts

3.9.4 Summary of Mitigation

A complete list of mitigation measures is presented by impact in Table 3.9-3. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.9-3 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Impact PALEO-1: Destruction of a Sensitive Paleontological Resource	**MM PALEO-1a:** Applicant Retention of Qualified Project Paleontologist **MM PALEO-1b:** Paleontological Mitigation and Monitoring Plan **MM PALEO-1c:** Paleontological Awareness Training for Project Crews **MM PALEO-1d:** Construction Monitoring **MM PALEO-1e:** Identification and curation of specimens **MM PALEO-1f:** Preparation of Monthly Monitoring Progress Reports **MM PALEO-1g:** Analysis of Paleontological Resources and Preparation of a Final Paleontological Resource Recovery Report (PRRR)	Throughout pipeline ROW	BLM/San Bernardino County	Pre- Construction
Impact PALEO-2: Construction activities would destroy or disturb an unknown sensitive paleontological resource	**MM PALEO-2a:** Monitoring **MM PALEO-2b:** Paleontological Resources Testing and Recovery	Throughout pipeline ROW	BLM/County of San Bernardino	Pre-Construction

References

Bureau of Land Management (BLM) and Office of the Solicitor. 2001. *The Federal Land Policy and Management Act of 1976 as amended*. Washington, D.C.

Bureau of Land Management (BLM). 2007. *Instructional Memorandum No. 2008-009; Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands*. Washington, D.C.

National Park Service (NPS). 2007. *Antiquities Act 1906-2006*. October 29. http://www.nps.gov/archeology/SITES/antiquities/about.htm. Accessed April 29, 2009.

Natural History Museum of Los Angeles County (NHMLAC). 2008. *Paleontological resources for the proposed Calnev Pipeline Project, from Colton, California, to Las Vegas, Nevada Project area*. Prepared for URS Corporation.

San Bernardino County Museum (SBCM). 2008. *Paleontology Literature and Records Review, Proposed Calnev Pipeline Project, Nevada and Southern California*. Prepared for URS Corporation.

Society for Vertebrate Paleontology (SVP). 1995. Assessment and mitigation of adverse impacts to nonrenewable paleontology resources – standard guidelines. *Society for Vertebrate Paleontology News Bulletin*.

Society for Vertebrate Paleontology (SVP). 1996. Conditions of receivership for paleontologic salvage collections. *Society for Vertebrate Paleontology New Bulletin*.

United States Forest Service (USFS). 2001. *Land and Resource Management Plan for the Thunder Basin National Grassland Medicine Bow-Routt National Forest Rocky Mountain Region*. Appendix J: Paleontology, Fossil Yield Potential Classification.

URS Corporation. 2008. *Calnev Expansion Project Paleontological Resources Assessment*. Prepared for Kinder Morgan. San Diego, CA.

3.10 Land Use

This section describes the existing and planned land uses that may be affected by the Calnev Proposed Project. This section also includes a description of the land status (i.e., land ownership), land use plans, and grazing allotments in the vicinity of the Proposed Project.

During the scoping period, government agencies and members of the public identified the following issues and concerns related to Land Use (1) proximity of Proposed Project facilities to schools; (2) alignment of a portion of the pipeline through the Mojave National Preserve; and (3) potential incompatibility with existing and planned uses in the City of Rialto. These comments are addressed and mitigation measures proposed in Section 3.10.3, Environmental Consequences.

3.10.1 Affected Environment

This section discusses land use within 1 mile of the pipeline right-of-way (ROW). A 1-mile buffer was chosen because it would include direct, as well as reasonably foreseeable indirect, impacts to land use.

3.10.1.1 Land Status/Ownership

The pipeline ROW primarily traverses undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States Forest Service (USFS), and the Department of Defense (DoD). Lands under the jurisdiction of the State of California, the State of Nevada, San Bernardino County, and Clark County are also crossed by the pipeline ROW. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

Calnev had originally proposed in its application to BLM to construct the new 16-inch pipeline parallel to its existing 8-inch and 14-inch pipeline through a section of the Mojave National Preserve, which is under the jurisdiction of the National Park Service (NPS). However, Calnev has since amended its application and proposes a route outside of the boundaries of the Mojave National Preserve. Consequently, the Project will have no impacts on NPS lands.

Table 3.10-1 lists the number of miles and acres traversed by the pipeline ROW by land ownership category. Figure 3.10-1 shows the federal, state, and local lands crossed by the Project.

Bureau of Land Management

The pipeline would cross the jurisdictions of the BLM California Desert District Office Region, which includes 10.4 million acres out of about 26 million acres of BLM-managed land in the California Desert Conservation Area (CDCA). The California Desert District's mission is to protect the natural, historic, recreation and economic riches, and scenic beauty of the CDCA. The California Desert District is divided into five resource areas: Ridgecrest, Palm Springs/South Coast, El Centro, Barstow, and Needles. The pipeline would cross the Barstow and Needles resource area.

Table 3.10-1 Pipeline Miles and Proposed Project Area by Land Ownership Category

Owner	Linear Miles	Acres[1]
Federal Public Lands		
Bureau of Land Management	134.7	3,265.2
USDA Forest Service	12.3	298.9
Department of Defense [2]	5.2	125.9
Subtotal	**152.2**	**3,690.0**
Private Lands/State Lands	80.8	960.8
Total	**233**	**4,650.84**

Source: Supplement to ROW Grant Application (SF-299) for Calnev Expansion Project. Revised as of 8/5/08

Notes:

[1] Calculated by multiplying difference between linear miles and total pipeline length, assuming 100' ROW.

[2] Includes easements across USMC Property (Nebo and Yermo annexes) Nellis Air Force Base.

The pipeline would also cross the jurisdiction of the BLM, Southern Nevada District Office that consists of two field offices:

- **Las Vegas Field Office:** Includes BLM-managed public lands in Clark County (other than Red Rock and Sloan National Conservation Areas.)
- **Red Rock/Sloan Field Office:** Includes Red Rock Canyon National Conservation Area and Sloan Canyon National Conservation Area.

Department of Defense

The pipeline would cross Marine Corps Logistics Base (MCLB) Barstow, a storage, distribution and maintenance depot east of Barstow California. MCLB is composed of three locations including the 2,000 acre Yermo Annex; the Main Base at the Nebo Facility, two miles west of the Yermo Annex; and the Marine Corps Rifle Range, located south of Interstate 40.

United States Forest Service

The pipeline would cross through the San Bernardino National Forest, which is under the jurisdiction of the USFS. According to the National Forest Management Act of 1976 and its implementing regulations, all actions authorized subsequent to the plan must be in conformance with the approved forest plan. An action must be specifically mentioned in the forest plan or be clearly consistent with the decisions to be in conformance.

State of California

In California, the pipeline would traverse the County of San Bernardino and the incorporated cities of Colton, Rialto, Adelanto, Victorville, and Barstow.

State of Nevada

In Nevada, the pipeline would cross Clark County and the incorporated cites of Henderson and Las Vegas.

3.10.1.2 Existing and Planned Land Uses

Existing Land Uses

The pipeline would be routed through a variety of land uses including residential, rural residential, industrial, and commercial areas. In California, the pipeline would traverse developed land uses in the cities of Colton and Rialto along the I-15 corridor. As the pipeline continues north along I-15 it would cross through the San Bernardino National Forest and then transition into the cities of Victorville and Adelanto. The pipeline would also pass through MCLB and would generally continue along the north side of the Mojave National Preserve.

In Nevada, the pipeline would continue along I-15 and pass through the unincorporated communities of Primm and Jean in Clark County, Nevada and would end at the Bracken Junction near McCarran Airport in Las Vegas. The pipeline would parallel existing roads and railroads and cross suburban and rural residential areas and grazing lands and range allotments, and off-highway recreation areas

Of the 234 miles of pipeline that would be constructed, about 150 miles would be constructed adjacent to the existing Calnev system, within utility corridors designated by the BLM and the USFS.

Public Schools

During public scoping, concerns were raised about the proximity of the pipeline to schools that attract a high concentration of individuals. Within California, 25 public schools are located within one mile of the pipeline ROW (Table 3.10-2). In Nevada, no schools are located with one mile of the pipeline ROW.

Grazing Allotments

The BLM and USFS administer and manage grazing allotments on public lands in the vicinity of the Proposed Project area. The primary laws that govern grazing on public land are the Taylor Grazing Act of 1934, the Federal Land Policy Management Act of 1976, and the Public Rangelands Improvement Act of 1978. The federal government authorizes grazing use through grazing permits or leases.

Table 3.10-2 Schools Within 1 Mile of the Proposed Project Area

School Name	Address	Distance (miles)	Nearest Milepost
Bloomington			
Bloomington Middle School	18829 Orange Street Bloomington, CA 92316	0.10	2
Crestmore Elementary School	18870 Jurupa Avenue Bloomington, CA 92316	1.00	2
Smith Elementary School	9551 Linden Avenue Bloomington, CA 92316	0.70	3
Zimmerman Elementary School	11050 Linden Avenue Bloomington, 92316	0.80	2
Bloomington High School	10750 Laurel Avenue Bloomington, CA 92316	0.90	2
Lewis Elementary School	18040 San Bernardino Avenue	0.90	3

Table 3.10-2 Schools Within 1 Mile of the Proposed Project Area

School Name	Address	Distance (miles)	Nearest Milepost
	Bloomington, CA 92316		
Grimes Elementary School	1609 Spruce Avenue Bloomington, CA 92316	0.25	Between 3 & 4
Rialto			
Simpson Elementary School	1050 S. Lilac Avenue Rialto, CA 92376	0.25	Between 4 & 5
Zupanic High School	266 W. Randall Avenue Rialto, CA 92376	0.50	Between 4 & 5
Curtis Elementary School	451 S. Lilac Avenue Rialto, CA 92376	0.25	5
Boyd Elementary School	310 E. Merrill Avenue Rialto, CA 92376	1.00	5
Werner Elementary School	1050 W. Rialto Avenue Rialto, CA 92377	0.40	Between 5 & 6
Rialto Middle School	324 N. Palm Avenue Rialto, CA 92376	0.60	6
Dunn Elementary School	830 N. Lilac Avenue Rialto, CA 92376	0.25	Between 6 & 7
Dollahan Elementary School	1060 W. Etiwanda Avenue Rialto, CA 92376	0.50	Between 6 & 7
Eisenhower High School	1321 N. Lilac Avenue Rialto, CA 92376	0.30	7
Preston Elementary School	1750 N. Willow Avenue Rialto, CA 92376	1.00	8
Hughbanks Elementary School	2241 N. Apple Avenue Rialto, CA 92377	0.80	Between 9 & 10
Kucera Middle School	2140 W. Buena Vista Drive Rialto, CA 92377	1.00	Between 10 & 11
Kolb Middle School	2351 N. Spruce Street Rialto, CA 92377	0.50	Between 9 & 10
Carter High School	2630 N. Linden Avenue Rialto, CA 92377	0.60	10
Trapp Elementary School	2750 N. Riverside Avenue Rialto, CA 92377	0.80	10
Victorville			
Baldy Mesa Elementary School	10376 Baldy Mesa Road Victorville, CA 92392	0	35
Quail Valley Middle School	10058 Arrowhead Rd Phelan, CA 92371	0.3	34
Baker			
Baker Elementary & High School	72100 Schoolhouse Ln Baker, CA 92309	0.14	Between 145 and 146

A permit or lease authorizes a permittee or lessee to graze livestock on administrative units called allotments. An allotment generally consists of federal rangelands, but may also include intermingled parcels of private or state lands. The boundaries of these allotments may be fenced. There may also be fences, water pipelines, water troughs and storage tanks and stock watering reservoirs within these allotments. The BLM and the USFS stipulate the number of livestock and season of use for each allotment. This use is quantified in Animal Unit Months and is adjusted based on the amount of forage growth.

Eleven grazing allotments occur within the Proposed Project vicinity in California and Nevada (Table 3.10-3). Three range allotments (inactive grazing allotments) occur north of Highway 138 near Baldy Mesa in the northern portion of the San Bernardino National Forest within the Front Country Ranger District. Seven grazing allotments occur in the California Desert District Conservation area within jurisdiction of the Barstow BLM Field Office. One grazing allotment occurs in Nevada within jurisdiction of the Las Vegas BLM Field Office.

Table 3.10-3 Grazing and Range Allotments Within the Proposed Project Vicinity

Milepost (MP)	Agency/Type	Allotment Name	Allotment Number
California (MP 0 to 195)			
San Bernardino National Forest			
MP 18 to 29	USFS Range Allotment	Baldy Mesa [1]	12538
MP 18 to 29	USFS Range Allotment	Lone Pine [1]	12535
MP 18 to 29	USFS Range Allotment	Summit Little Horse Thief [1]	12534
BLM Barstow Field Office Area			
MP 55 to 76	BLM Grazing Allotment	Stoddard Mountain Middle Unit[2]	08010
MP 76 to 86	BLM Grazing Allotment	Stoddard Mountain East Unit[3]	08010
MP 114 to 132	BLM Grazing Allotment	Cronese Lake [4]	08007
MP 109 to 132	BLM Grazing Allotment	Cady Mountain [4]	08006
BLM Needles Field Office Area			
MP 143 to 195	BLM Grazing Allotment	Valley View [5]	
MP 158 to 179	BLM Grazing Allotment	Valley Wells	09009
MP 179 to 195	BLM Grazing Allotment	Clark Mountain	09003
Nevada (MP 195 to 233)			
BLM Las Vegas Field Office Area			
MP 212 to 222	BLM Grazing Allotment	Hidden Valley	15412

Source: BLM 2009

Notes:

[1] Inactive USFS grazing allotments.

[2] Allotment status is "active" and no impacts to livestock operations would occur now or in the future from the proposed pipeline alignment (Chavez 2010).

[3] Allotment status is "non-use" and livestock is prohibited due to the presence of Bighorn sheep (Chavez 2010).

[4] Allotment status is "non-use" and vacant (Chavez 2010).

[5] Allotment is not being used for grazing by the owner/lessee and the allotment will be closed by the end of 2010 (Bartz 2010).

Within California, the pipeline would traverse the BLM's Stoddard Mountain Middle and East Units within the West Mojave Planning Area and would not cross any grazing or range allotments in Nevada.

3.10.2 Applicable Regulations, Plans, and Policies

The majority of lands within the Proposed Project area are administered by a combination of federal and state landowners. The sections below detail the regulatory requirements for land use by federal agency, county, and city. Planning areas referenced in this section and crossed by the Proposed Project are shown on Figure 3.10-2.

3.10.2.1 Federal

Federal Land Policy and Management Act of 1976, as amended (FLMPA)

The FLMPA 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 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 (Federal Land Policy Management Act §103(c)). The Proposed Project would be consistent with the BLM policies related to the siting of ROWs, the processing of applications for use authorizations, and the management of public land.

California Desert Protection Act of 1994 (PL 103-433)

The California Desert Protection Act of 1994 established the Death Valley and Joshua Tree National Parks and the Mojave National Preserve (MNP) in the California desert. This act also designated 69 wilderness areas within the CDCA to be administered by the BLM, and two wilderness areas in the Havasu and Imperial National Refuges to be administered by the USFWS. Details on wilderness areas in the vicinity of the Proposed Project are described in Section 3.11, Special Management Areas. The California Desert Protection Act includes general policies for establishing and managing these areas, and policies on administration, grazing, buffer zones, mining claims, and law enforcement.

For the MNP, Congress made various findings about the need to protect the Mojave Desert. The Act establishes the MNP, consisting of about 1,419,800 acres, and abolishes the East Mojave National Scenic Area, which was designated in 1981. The Secretary is required to administer the preserve in accordance with National Park System laws, and must permit hunting, fishing and trapping as allowed by federal and state laws, with certain exceptions. Mining claims are governed by the National Park System laws, and grazing is permitted to continue at no more than the current level. The Act required the Secretary of the Interior to submit a comprehensive management plan for the preserve to Congress by November, 1997 and to establish a Mojave National Preserve Advisory Commission, for a ten-year period, to advise on the development and implementation of the plan.

The Proposed Project would be consistent with the provisions of the California Desert Protection Act of 1994 because the pipeline ROW would not cross through any National Parks, National Preserves, or Wilderness Areas.

California Desert Conservation Area Plan

In 1980, the BLM prepared a comprehensive management plan for the CDCA. The CDCA contains over 12 millions acres of public lands that are administered by the BLM. The goal of the CDCA Plan is to provide for the use of the CDCA area, including economic, educational, scientific, and recreational uses, in a manner which enhances wherever possible – and which does not diminish, on balance – the environmental, cultural and aesthetic values of the Desert and its productivity (BLM 1980).

All public lands in the CDCA under BLM management have been designed geographically into four multiple use classes, based on the sensitivity of resources and kinds of uses for each geographic area:

- Class C (controlled). These include 69 wilderness areas totaling 3,667,020 acres created by Congress with the October, 1994 passage of the California Desert Protection

Act. These lands are to be preserved in a natural state and access is generally limited to non-motorized, non-mechanized means (i.e., by foot or horseback).

- Class L (limited use). These lands are managed to protect sensitive, natural, scenic, ecological, and cultural resource values. They provide for generally lower-intensity, carefully controlled multiple uses that do not significantly diminish resource values.
- Class M (moderate use). These lands are managed in a controlled balance between higher intensity use and protection. A wide variety of uses, such as mining, livestock grazing, recreation, energy, and utility development are allowed. Any damage, which permitted uses cause, must be mitigated.
- Class I (intensive use). These lands are managed for concentrated use to meet human needs. Reasonable protection is provided for sensitive natural values, and mitigation of impacts and rehabilitation of impacted areas will occur when possible.

The CDCA Plan also includes an Energy Production and Utility Corridor Element, the goals of which are to:

1. Fully implement the network of joint-use planning corridors to meet projected utility needs to the year 2000.
2. Identify environmental constraints and siting procedures that can be used desert-wide by telecommunications firms and public agencies to guide their planning of both individual communication sites and line-of-sight communication systems.
3. Identify potential sites for geothermal development, wind energy parks, and power plants.

As part of this element, the CDCA Plan designated a regional network of sixteen utility planning corridors (later increased to nineteen by plan amendments). Corridors are from two to five miles wide, and are several to hundreds of miles in length. Their purpose is to guide detailed planning and siting of utility projects requiring a right of way from the BLM. The designated corridors allow for the following utilities:

(1) New electrical transmission towers and cables of 161 kV (kilovolt) or above;

(2) All pipelines with diameters greater than 12 inches;

(3) Coaxial cables for interstate communications; and

(4) Major aqueducts or canals for inter-basin transfers of water.

Within the CDCA Planning Area, the pipeline would primarily be aligned within the following designated utility corridors:

- Corridor No. 27-225: Contains a 500-kV and a 138-kV transmission line and a 14-in pipeline.
- Corridor No. 27-266: Contains two 500-kV transmission lines and a 138-kV transmission line.

The Proposed pipeline route is located outside of these designated corridors in the area between MP-54 and MP-76, between Victorville and Barstow. In this area, the Proposed Route is located adjacent to the existing Calnev 8-inch and 14-inch pipelines, which were constructed prior to the designation of Utility Corridors in the CDCA Plan. Therefore, the Proposed route would require a CDCA Plan Amendment to allow the placement of the Proposed pipeline outside of designated utility corridors.

Las Vegas Field Office Noxious Weed Plan

The BLM Las Vegas Field Office has prepared the Las Vegas Noxious Weed Plan to provide guidance for an active integrated weed management program using best management practices. This plan is applicable to the construction, operation, and maintenance of the Proposed Project.

San Bernardino National Forest Land Resource Management Plan

The San Bernardino National Forest Land and Resource Management Plan guides all natural resource management activities and establishes management standards and guidelines for the San Bernardino National Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management. The goals and objectives pertain to recreation, wilderness, wildlife and fish, range, timber, soil and water, minerals, lands, facilities, protection, and public information.

The pipeline would cross through the San Bernardino National Forest within a designated energy corridor (Corridor No. 108-267). This corridor currently includes a 500-kV transmission line, a 230-kV transmission line, and a 14-inch and a 36-in pipeline (Department of Energy 2008). Construction of the pipeline within this designated corridor would not conflict with any elements of the San Bernardino National Forest Land and Resource Management Plan.

3.10.2.2 State and Local

State of California

The applicable land management plans and goals and policies for local jurisdictions in California are described below.

County of San Bernardino General Plan

The County of San Bernardino 2007 General Plan (adopted March 13, 2007, effective April 12, 2007) governs land use planning and development decisions in the unincorporated areas of the County (County of San Bernardino 2007). The plan contains goals, policies, and implementing actions for a variety of issues including natural and man-made hazards and natural and man-made resources. The Energy subsection of the Conservation Element discusses the under-grounding of pipelines and that the County's goal and policy are as follows:

- GOAL CO 8: The County will minimize energy consumption and promote safe energy extraction, uses and systems to benefit local regional and global environmental goals.
- POLICY CO 8.1: Maximize the beneficial effects and minimize the adverse effects associated with the siting of major energy facilities. The County will site energy facilities equitably in order to minimize net energy use and consumption of natural resources, and avoid inappropriately burdening certain communities. Energy planning should conserve energy and reduce peak load demands, reduce natural resource consumption, minimize

environmental impacts, and treat local communities fairly in providing energy efficiency programs and locating energy facilities.

Bloomington Community Plan

The Bloomington Community Plan area is bordered on the southeast by the Santa Ana River and on the southwest by the Jurupa Mountains. The San Gabriel and San Bernardino Mountains are situated north of the Bloomington area. The general objectives of the Community Plan that are applicable to the Proposed Project are as follows:

- Goal BL/Land Use (LU) 5: Provide for the joint use of utility easements to meet the land use and recreation needs of the community, subject to the limitations/restrictions of the utility agency.
- Policies BL/LU 5.1: Work with the utility companies to pursue opportunities for joint access and use of utility line easements. Suggested uses include, but are not limited to, linear trails, parks, and plant nurseries, and with appropriate review and mitigation, potential truck parking areas.

Muscoy Community Plan

Muscoy is an unincorporated community that is surrounded by the City of San Bernardino on the north, east and south and a railroad line and then the City of Rialto Lytle Creek Wash and the Cajon Creek Wash on the west. Cajon Boulevard (also known as Historic Route 66) runs along the eastern boundary of the plan area and further east lies Interstate 215. Interstate 210 borders the community on the south. Railroad lines border the community on both the east and west boundaries

The Muscoy Community Plan serves as a long-range guide for future growth, land uses and development in this unincorporated community of San Bernardino County. To maintain the unique character of the community, the goals and policies of this Plan were designed to be more specific than the County's General Plan. The community's main priorities for retaining the rural character are to maintain the following:

- Low-density residential and commercial development;
- Agricultural and animal raising opportunities and an equestrian-friendly environment; and
- Adequate infrastructure commensurate with meeting community needs.

City of Colton General Plan

The City of Colton's General Plan includes a series of goals and policies intended to aid the City in achieving its vision for the future. The general objectives of the Land Use Element that are applicable to the Proposed Project are as follows:

- To create a land use pattern that provides a safe, harmonious and attractive living environment: a balance hierarchy of commercial land uses which will service the consumer and economic needs of the City and region; a strong industrial base highly competitive within the area's labor force pool and industrial growth market ; and adequate open space and recreational areas.

- To provide a compatible mix and arrangement of land uses and to promote future development in a manner that is consistent with the availability of infrastructure.

City of Rialto General Plan

The City of Rialto's General Plan contains goals and policies in the Public Facilities Section of the Land Use Element (City of Rialto 1992). The goals applicable to the proposed Project are as follows:

- Ensure that all developed areas of the City are adequately served with essential public services and infrastructure including, but not limited to, streets, water, surface drainage, sanitary sewers, law enforcement, fire protection and public schools.
- The City will coordinate all development proposals with other affected public entities to ensure the provisions of adequate public facilities.

The current City of Rialto General Plan was adopted in 1992. Since then, several minor General Plan amendments have been adopted, including revisions to the Housing Element generally in accordance with state mandates. In July 2008, the City of Rialto undertook a comprehensive update of the General Plan to reflect a new vision for the community and to address current issues.

City of Rialto Merged Redevelopment Plan

The City of Rialto's Redevelopment Plan covers five separate areas incorporated into the City's redevelopment program by the City Council between 1979 and 2002 that have been "merged" into a single Redevelopment Project Area (City of Rialto 2004). The five areas that make up the 7,865-acre Merged Redevelopment Project Area are known as:

- Industrial (formerly the Industrial Redevelopment Project Area) adopted by Ordinance No. 782 on July 7, 1979;
- Gateway (formerly the Gateway Redevelopment Project Area) adopted by Ordinance No. 945 on December 17, 1985;
- Agua Mansa (formerly the Agua Mansa Redevelopment Project Area) adopted by Ordinance No. 1037 on July 19, 1988; and
- Central Business District or CBD (formerly the Central Business District Redevelopment Project Area) adopted by Ordinance No. 1101 on July 5, 1990; and 2002 Added Territory (the area added to the Merged Project Area by and amendment adopted by Ordinance No. 1333 on July 2, 2002.

One of the projects currently being planned by the City of Rialto Redevelopment Agency is the Rialto Airport Redevelopment Project, also known as "Renaissance Rialto". This project consists of a 1,500 acre master planned community located along the I-210 freeway, west of Ayala Avenue (City of Rialto 2004) that would convert a former municipal airport and redevelop it with office/ commercial uses, including a 10-acre school that would be operated by the Rialto Unified School District.

The Proposed Project, between MP 7 and MP 8 (Figure 2-2), would be aligned along Ayala Drive, adjacent to the eastern edge of the Renaissance Rialto project, within 300 feet of the planned school site. Alternative 2 would be routed more than 0.5 miles from the planned school.

City of San Bernardino General Plan

The City of San Bernardino's General Plan includes a series of goals and policies for the Land Use Element. The policies applicable to the Proposed Project are as follows:

- Pursuant to Goal 2.11.4 within Chapter 2, Land Use, of the City of San Bernardino General Plan (adopted November 1, 2005): All services and utilities should be screened from view either with fencing or landscaping or placed underground.
- Pursuant to Policy 9.10.4 of the Utilities Element of the City of San Bernardino General Plan (Utilities Infrastructure Financing):Provide public funding support for expansion and upgrading of public utilities and infrastructure when improvements will provide substantial public benefit to the City.

State of Nevada

The applicable land management plans and goals and policies for local jurisdictions in Nevada are described below.

South Clark County Land Use Plan

A special overlay zone was adopted by Clark County in December 2005 as part of the South Clark County Land Use Plan. The Utility and Transportation Corridor (UTC) is generally aligned east of and parallel to Highway I-15, from Primm, Nevada to St. Rose Parkway (State Route 146). The South Clark County Land Use Plan was updated in 2008 and includes Policy 25.1, which encourages the "joint use of this corridor so that needed infrastructure is consolidated".

The pipeline ROW would be located within the UTC between MP 206 and MP 222 (Figures 2-18 and 2-19). A five mile segment of the pipeline between MP 206 and MP 211 would be located outside of the UTC because it would not be technically feasible to be developed within the UTC. While the South Clark County Land Use Plan encourages the use of the UTC for new infrastructure, the plan also allows placement of new infrastructure outside the UTC when necessary to address technical feasibility issues. In addition, South Clark County requested that the new pipeline be placed adjacent to the existing pipeline ROW rather than within the UTC. Consequently, the project would be consistent with the planning provisions of the South Clark County Land Use Plan.

Alternative 2, with the inclusion of the South Clark County MRV through this area, would be aligned within the corridor and would also be consistent with the South Clark County Land Use Plan.

3.10.3 Environmental Consequences

3.10.3.1 Requirements and Focus of NEPA versus CEQA Impact Analyses

Potential Impacts to be Evaluated under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential impacts to land use have been identified for evaluation:

- Restriction of the land use authorizations of the BLM, USFS, or the Department of Defense (addressed as LU-1 below);
- Restriction of land tenure adjustments (addressed as LU-2 below);
- Disturbance to residences (addressed as LU-3 below);
- Impose restrictions on livestock and grazing management (address as AG-1 below).

CEQA Significance Criteria

Under California Environmental Quality Act (CEQA), the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to land use and agriculture, the relevant CEQA significance criteria provided in Sections IX and II of the checklist are based on whether the proposed project would:

- Physically divide an established community (addressed as LU-4 below);
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Proposed Project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect (addressed as LU-5 below);
- Conflict with any applicable habitat conservation plan or natural community conservation plan (addressed as LU-6 below);
- Convert Prime Farmland, Unique Farmland, of Farmland of Statewide Importance (Farmland) to non agricultural use (addressed as AG-2 below);
- Conflict with existing zoning for agricultural use, or a Williamson Act contract (addressed as AG-3 below);
- Conflict with existing zoning for forest land or timberland (addressed as AG-4 below);
- Result in loss of forest land or conversion of forest land to non-forest use (addressed as AG-5 below); or
- Involve other changes which could result in conversion of Farmland or forest land to other use (addressed as AG-6 below).

3.10.3.2 Impact Analysis

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under National Environmental Policy Act (NEPA) and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Mitigation measures (MMs) are compiled in Section 3.10.4, Summary of Mitigation.

Proposed Project/Proposed Action (Alternative 1)

Impact LU-1: Restrict Land Use Authorizations.

The Proposed Project is an authorized use that is consistent with other land uses in the ROW, with the exception of some areas discussed below. The majority of Proposed Project facilities would be located within the ROW of the existing Calnev system and would not prohibit or impinge upon other land uses being authorized in the same ROW. Any future utility proposals within the ROW would be subject to subsequent environmental review in compliance with NEPA and/or CEQA.

The only exceptions to this are the Zzyzx area, the Baker area, and the Silver Lake Pump Station area. In the Zzyzx area, the Proposed route would cross a ridge adjacent to Interstate 15. During engineering evaluation, the Applicant determined that the required location for the Proposed route along the ridge would create a longitudinal encroachment on the Caltrans Interstate 15 ROW. Therefore, the Proposed route in this area would have a direct, adverse impact on the Caltrans ROW. That impact would be permanent, as the pipeline would remain within the Caltrans ROW following construction.

In the Baker area, the Proposed route would traverse through a narrow pass between two hills, and would parallel the transmission line ROW for the Southern California Edison (SCE) and Los Angeles Department of Water & Power (LADWP) lines in this area. The LADWP ROW is an exclusive ROW, and construction of the pipeline within this ROW would create a conflict with the provisions of the ROW, creating a direct, adverse impact to that ROW grant. Although it would pass close to the LADWP ROW, the Proposed route would not encroach on the ROW, and therefore no conflict would exist. The Proposed route would coincide with the SCE transmission line ROW, which is not an exclusive ROW. The construction and operation of the pipeline on the SCE ROW would not impact SCE's use of that ROW.

At the Proposed location of the Silver Lake Pump Station, the Applicant has considered three separate locations to the west, south, and east of the SCE switchyard. The objective of these proposed locations is to locate the pump station in close proximity to the switchyard, and thus eliminate the need for extended transmission lines from the switchyard to the pump station. However, SCE has future, but undefined, plans to expand the switchyard. Construction of the pump station in close proximity to the switchyard could potentially constrict the ability of SCE to expand the switchyard. This could potentially be a direct, adverse impact on the SCE ROW in this area. If it occurred, this impact would be permanent.

Construction of the Proposed Project would also temporarily restrict access for other authorized users of the project area. Should this occur, the agencies would provide other means of access to authorized users through alternate routes. The modification of access to other authorized users would be a direct, adverse impact. However, the impact would be temporary, lasting no more than a few weeks until the construction activity had moved away from the area, and the site had been restored.

Impact LU-2: Restrict Land Tenure Adjustments.

In managing public lands under its jurisdiction, the BLM provides for land use, purchase, exchange, donation and sale; determines the boundaries of Federal land; and maintains historic records for these ownership transactions. Land ownership transfer through purchase, exchange, donation and sale is an important component of the BLM's management strategy.

The BLM's Land Tenure program is designed to:

- Improve management of natural resources through consolidation of federal, state and private lands;
- Increase recreational opportunities and preserve open space;
- Secure key property necessary to protect endangered species and promote biological diversity;
- Preserve archaeological and historical resources;
- Implement specific acquisitions authorized by Acts of Congress; and
- Allow for expansion of communities and consolidation of non-federal land ownership.

The BLM Las Vegas Field Office has indicated that BLM lands, including Township 23, Range 61, Sections 5, 8,17,20, 25, 30 31, and 34 are available for disposal in the vicinity of the Proposed Project, in accordance with Public Law (Congressional Law) 105263 and the SNPLA (Las Vegas Resource Management Plan). Congress has also authorized the transfer of land within Township 23 and Range 61 from the BLM to the Clark County Department of Aviation for future development of the Sloan Heliport (Chandler 2009).

The Proposed Project would not interfere with the purchase, exchange, donation or sale of Federal land (Chandler 2009). Therefore, no impacts would occur.

Impact LU-3: Temporary Disturbance to Residences.

Noise, odor, construction emissions, and dust impacts could disturb residences up to 500 feet from the construction work area. Implementation of noise and air quality mitigation measures would avoid or reduce these impacts. Where residential properties are directly affected by construction activities such as trenching, landscape removal, restricted access, implementation of the following mitigation measures would further reduce these impacts.

- **MM LU-3a: Restore Property.** The Applicant would immediately replace landscaping following construction activities; repair driveways; fences or other property damaged, and restore the property to its previous condition.
- **MM LU-3b: Secure Trench Area.** In locations where pipeline construction is not within roadways, the applicant would install safety fencing around construction areas or would backfill or cover open trenches at the end of each workday within 500 feet of residences.
- **MM LU-3c: Maintain Access**. The Applicant would work with individual residents to maintain access to properties.

With implementation of the mitigation measures, there would be no residual impacts associated with disturbance of residents.

Impact LU-4: Physically divide an established community.

Construction of the Proposed Project would have temporary impacts to land uses that are related to construction activities. However, the lands that would be disturbed would also be restored post construction and the Proposed Project would not result in any permanent changes to the existing land use patterns. Access roads and maintenance roads would also be part of the Proposed Project. However, there would be no change in existing land use patterns. Therefore the Proposed Project would not divide the physical arrangement of a neighborhood or area, and therefore impacts under CEQA would be less than significant.

Impact LU-5: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Proposed Project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

The majority of the pipeline would be aligned within a USFS and a BLM utility corridor and would be consistent with the land use policies developed by these agencies for federal lands crossed by the Project. The portion of the Project that crosses non-federal lands would also be consistent with each of the land use plans, policies, and regulations of the respective state and local jurisdictions. Therefore, impacts of the Proposed Project would be less than significant under CEQA.

Impact LU-6: Conflict with any applicable habitat conservation plan or natural community conservation plan.

The pipeline would cross the coverage area of the WEMO Conservation Plan. No other habitat conservation plan or natural community conservation plan applies to the Proposed Project area. That portion of the pipeline that would traverse the WEMO would be located with the BLM utility corridor identified and designated for this use. Potential impacts relating to habitat and species covered under WEMO are discussed in Section 3.7, Biological Resources, of this Environmental Impact Statement (EIS)/Environmental Impact Record (EIR). Therefore, impacts of the Proposed Project would be less than significant under CEQA.

Impact AG-1: Restrictions on Livestock and Grazing Management.

The pipeline crosses through the Stoddard Mountain grazing allotment managed by the BLM. Livestock grazing has been and continues to be a significant use of renewable resources on public lands in the California Desert. As of 1999, 4.5 million acres (36 percent of public lands in CDCA) in 54 grazing allotments are being leased to cattle and sheep interests. Sheep grazing is generally intermittent, while use by cattle may be continuous or intermittent, depending on the locality and type of ranching operation, as well as the pattern of annual rainfall. The Stoddard Mountains grazing allotment is 170,126 acres of inactive ephemeral sheep allotment; the BLM has expressed no concerns pertaining to the pipeline crossing this allotment. Therefore, the Proposed Project would not restrict grazing, and would not have any adverse impact.

Impact AG-2: Conversion of Farmland to non-agricultural use.

As discussed in Section 3.3.1.2, the pipeline would not pass through soils considered “prime farmland” or “soils of statewide importance” as defined under the Farmland Protection Policy Act. Therefore the impacts of the Proposed Project would be less than significant under CEQA.

Impact AG-3: Conflict with existing zoning for agricultural use, or a Williamson Act contract.

The Proposed Project would not conflict with any zoning or Williamson Act contract for agricultural use. All land use associated with the project would be temporary, occurring only during construction. Upon completion of construction, any current surface-based agricultural uses would continue. Therefore the impacts of the Proposed Project would be less than significant under CEQA.

Impact AG-4: Conflict with existing zoning for forest land or timberland.

The Proposed Project would not conflict with any zoning for forest land or timberland. The Proposed Route does not pass through any areas with the potential for forestry. Therefore the impacts of the Proposed Project would be less than significant under CEQA.

Impact AG-5: Loss of forest land or conversion of forest land to non-forest use.

The Proposed Project would not result in the conversion of any forest land to non-forest use. The Proposed Route does not pass through any forest land. Therefore the impacts of the Proposed Project would be less than significant under CEQA.

Impact AG-6: Other changes which could result in conversion of Farmland or forest land to other use.

The Proposed Project would not result in any other changes that could convert Farmland or forest land to other uses. Therefore the impacts of the Proposed Project would be less than significant under CEQA.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to land use and agriculture associated with the seven route variations are described below:

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to land use or agriculture. Both segments are in an urban area that is not under jurisdiction of federal land use plans. Construction of the project in this area would be approved by San Bernardino County and the City of Rialto, and would therefore be consistent with approved land uses and local land use plans. Neither route in this area is associated with either Farmland or forest land.

The alternative would have the potential for temporary noise, odor, construction emissions, and dust impacts that could disturb residences within 500 feet of the construction work area. Implementation of air quality and noise mitigation measures (discussed in Section 3.6.4 and 3.13.4, respectively) would avoid or reduce these impacts. Where residential properties are directly affected by construction activities such as trenching, landscape removal, and restricted access, implementation of the mitigation measures LU-3a, LU-3b, and LU-3c would further reduce these impacts. Following construction, these impacts would no longer exist.

Overall, the potential land use and agricultural impacts associated with the Bloomington route would be the same as those identified for the Proposed Project.

Rialto Alternative

The Rialto Alternative route variation, and the segment of the Proposed Project that it would replace within the City of Rialto, do not have any differences with respect to land use or agriculture. Both segments are in an urban area that is not under jurisdiction of federal land use plans. Construction of the project in this area would be approved by San Bernardino County and the City of Rialto, and would therefore be consistent with approved land uses and local land use plans. Neither route in this area is associated with either Farmland or forest land.

The alternative would have the potential for temporary noise, odor, construction emissions, and dust impacts that could disturb residences within 500 feet of the construction work area. Implementation of air quality and noise mitigation measures (discussed in Section 3.6.4 and 3.13.4, respectively) would avoid or reduce these impacts. Where residential properties are directly affected by construction activities such as trenching, landscape removal, and restricted access, implementation of the mitigation measures LU-3a, LU-3b, and LU-3c would further reduce these impacts. Following construction, these impacts would no longer exist.

Overall, the potential land use and agricultural impacts associated with the Rialto route would be the same as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route, and the segment of the Proposed Project that it would replace within the unnamed riparian area, do not have any differences with respect to land use or agriculture. Both segments are under jurisdiction of the USFS. Construction of the project in this area would be approved by the USFS, and would therefore be consistent with the approved land use. Also, neither route in this area is associated with either Farmland or forest land. Neither the Wagon Train Road alternative route or the Proposed route through the unnamed riparian area pass near residences, so neither would have the potential to impact residences through noise, odor, or air emissions.

The Wagon Train Road route would pass under Interstate 15, which is a current land use associated with this location. The pipeline would be installed under the highway using the horizontal directional drilling (HDD) construction method, which would not restrict or conflict with use of the land for the highway.

Overall, the potential land use and agricultural impacts associated with the Wagon Train Road route would be the same as those identified for the Proposed Project.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa route and the segment of the Proposed Project route that it would replace along Baldy Mesa Road, do not have any differences with respect to land use or agriculture. Both segments are in a residential area that is not under jurisdiction of federal land use plans. Construction of the project in this area would be approved by San Bernardino County, and would therefore be consistent with approved land uses and local land use plans. Neither route in this area is associated with either Farmland or forest land.

The alternative would have the potential for temporary noise, odor, construction emissions, and dust impacts that could disturb residences within 500 feet of the construction work area. Implementation of air quality and noise mitigation measures (discussed in Section 3.6.4 and 3.13.4, respectively) would avoid or reduce these impacts. Where residential properties are directly affected by construction activities such as trenching, landscape removal, and restricted access, implementation of the mitigation measures LU-3a, LU-3b, and LU-3c would further reduce these impacts. Following construction, these impacts would no longer exist.

Overall, the potential land use and agricultural impacts associated with the Phelan Road/Baldy Mesa route would be the same as those identified for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, are very similar with respect to land use or agriculture. Both segments are under jurisdiction of the BLM. Construction of the project in this area would be approved by the BLM, and would therefore be consistent with the approved land use. Also, neither route in this area is associated with either Farmland or forest land. Neither the alternative route nor the Proposed route in this area pass near residences, so neither would have the potential to impact residences through noise, odor, or air emissions.

As discussed for the proposed Project route, the required location for the Proposed route along the ridge would create a longitudinal encroachment on the Caltrans Interstate 15 ROW. The alternative route would avoid the highway and follow the ROW for the existing pipelines.

Baker Alternative

The Baker Alternative route would have some differences with respect to land use as compared to the Proposed Project. Instead of paralleling the existing SCE and LADWP power lines in the narrow space available west of Baker, the alternative would follow Interstate 15, a different transmission line route, and then public streets through the town of Baker. In general, the

Proposed route would traverse undeveloped land under the jurisdiction of BLM, while the Alternative route would traverse a larger segment of land under the jurisdiction of the County and the town of Baker. The alternative route would require construction within 500 feet of residences, which could have temporary adverse impacts on the residences. These impacts would be reduced through implementation of the mitigation measures LU-3a, LU-3b, and LU-3c. Following construction, these impacts would no longer exist. Also, by being located within the town of Baker rather than diverting through an undeveloped area west and north of the town, the alternative route could create potential impacts associated with current and future utilities within the town.

Overall, the potential impacts associated with either route are expected to be minor. However, except for the narrow restriction to the pipeline route created by the two hills west of Baker, the location of the Proposed route through an undeveloped area presents a lower potential for future conflicts than the Alternative route.

Silver Lake Pump Station Alternative

The Alternative location for the proposed Silver Lake Pump Station would be approximately 2000 feet to the east of the Proposed location. The Alternative location would be in an undeveloped area that is not adjacent to the switchyard, and would therefore not present any potential conflict with that or any other land use. The Alternative location would not be located near residences, Farmland, forest land, or other utilities that could present any potential impacts.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation, and the segment of the Proposed Project that it would replace that passes through Bracken Junction, do not have any differences with respect to land use or agriculture. Both segments are in an urban area that is not under jurisdiction of federal land use plans. Construction of the project in this area would be approved by Clark County and the City of Las Vegas, and would therefore be consistent with approved land uses and local land use plans. Neither route in this area is associated with either agricultural or forest land. Although both routes are in a highly developed area, the area consists of industrial and commercial facilities, and tourism-related facilities (casinos). Therefore, there would not be any potential for impacts to residences. Overall, the potential land use and agricultural impacts associated with the Sunset Lateral alternative would be the same as those identified for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to land use.

Summary

Overall, Alternative 2 would have a reduced level of land use impacts as compared to the Proposed Project. In the Zzyzx area, Alternative 2 would have a reduced potential for impacts by routing the pipeline further from the existing Caltrans ROW, thus eliminating any potential impacts to Caltrans use of that ROW. Similarly, the location of the Silver Lake Pump Station in

Alternative 2 would eliminate any potential impact with future expansion of the SCE switchyard. Conversely, the Baker Alternative route would have potential impacts associated with utilities and residences in the developed part of Baker. While these impacts could be addressed and mitigated, the Proposed Project route in the undeveloped area outside of Baker would have no potential for these impacts.

Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. These mitigation measures would reduce the level of impacts under CEQA to less than significant.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. With respect to land use, Alternative 3 would incorporate the reduced impacts associated with Zzyzx alternative route and the Silver Lake Pump Station alternative location. Alternative 3 would also not adopt the potentially higher impacts associated with the Baker Alternative route. All other land use impacts under both NEPA and CEQA would remain the same as Alternatives 1 and 2.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure would be installed. No ground-disturbing activities would take place and potential impacts to land use resulting from current activities on the existing pipelines would remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems would be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines would remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, CA to Las Vegas, NV. No land use impacts are associated with the current operations.

For the purposes of CEQA, no significant impacts to land use would result if the No Project Alternative is adopted.

3.10.3.3 Summary of Alternatives Comparison

There would be no impacts to land use associated with any of the alternatives.

Table 3.10-4 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
No Impacts	No impacts.	No impacts.	No impacts.

3.10.4 Summary of Mitigation

A complete list of mitigation measures is presented by impact in Table 3.10-4. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.10-5 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
LU-3: *Construction activities could impact residences within 500 feet of construction work areas.* Noise, odor, construction emissions, and dust impacts could disturb residences up to 500 feet from the construction work area.	• **MM LU-3a: Restore Property.** • **MM LU-3b: Secure Trench Area.** • **MM LU-3c: Maintain Access.**	Within 500 feet of any residences along pipeline route.	BLM and San Bernardino County	During and immediately following construction.

References

Bureau of Land Management (BLM). 1980. *California Desert Conservation Area Plan*, as amended.

Bureau of Land Management (BLM). 2009. *GeoCommunicator web mapping tool.* http://www.geocommunicator.gov/blmMap. Accessed May 17, 2009.

City of Rialto. 1992. *City of Rialto General Plan.*

City of Rialto. 2004. *Merged Redevelopment Project Five Year Implementation Plan (2004 to 2009)*. Prepared by the City of Rialto Redevelopment Agency. Adopted April 20.

City of San Bernardino. 2005. *City of San Bernardino General Plan.* November.

County of San Bernardino. 2007. *San Bernardino County General Plan.* March.

Department of Energy. 2008. *Final Programmatic Environmental Impact Statement for the Designation of Energy Corridors on Federal Lands in 11 Western States* (DOE/EIS-0386). Prepared by the Department of Energy and the BLM. http://corridoreis.anl.gov/index.cfm. Accessed May 16, 2009.

Personal Communications

Bartz, Everett, Range Management Specialist. 2010. BLM Needles Field Office. Telephone conversation with Emery McCaffery, Ecology and Environment, Inc., San Diego, CA.

Chandler, Mark. 2009. BLM Las Vegas Southern Nevada Field Office. Telephone conversation with Kim Zuppiger, Ecology and Environment, Inc., San Diego, CA.

Chavez, Remijio A., Range Management Specialist. 2010. BLM Barstow Field Office. Telephone conversation with Emery McCaffery, Ecology and Environment, Inc., San Diego, CA.

Figure 3.10-1: Planning Jursidictions Crossed by the Project Route

SOURCES:
ESRI 2008; USGS 2005

Locations of project components are approximate
Mile Post 54 has been removed due to route change

E:\GIS\CalNev_Pipeline\MXDs\planning_jurisdictions.mxd
June 28, 2011

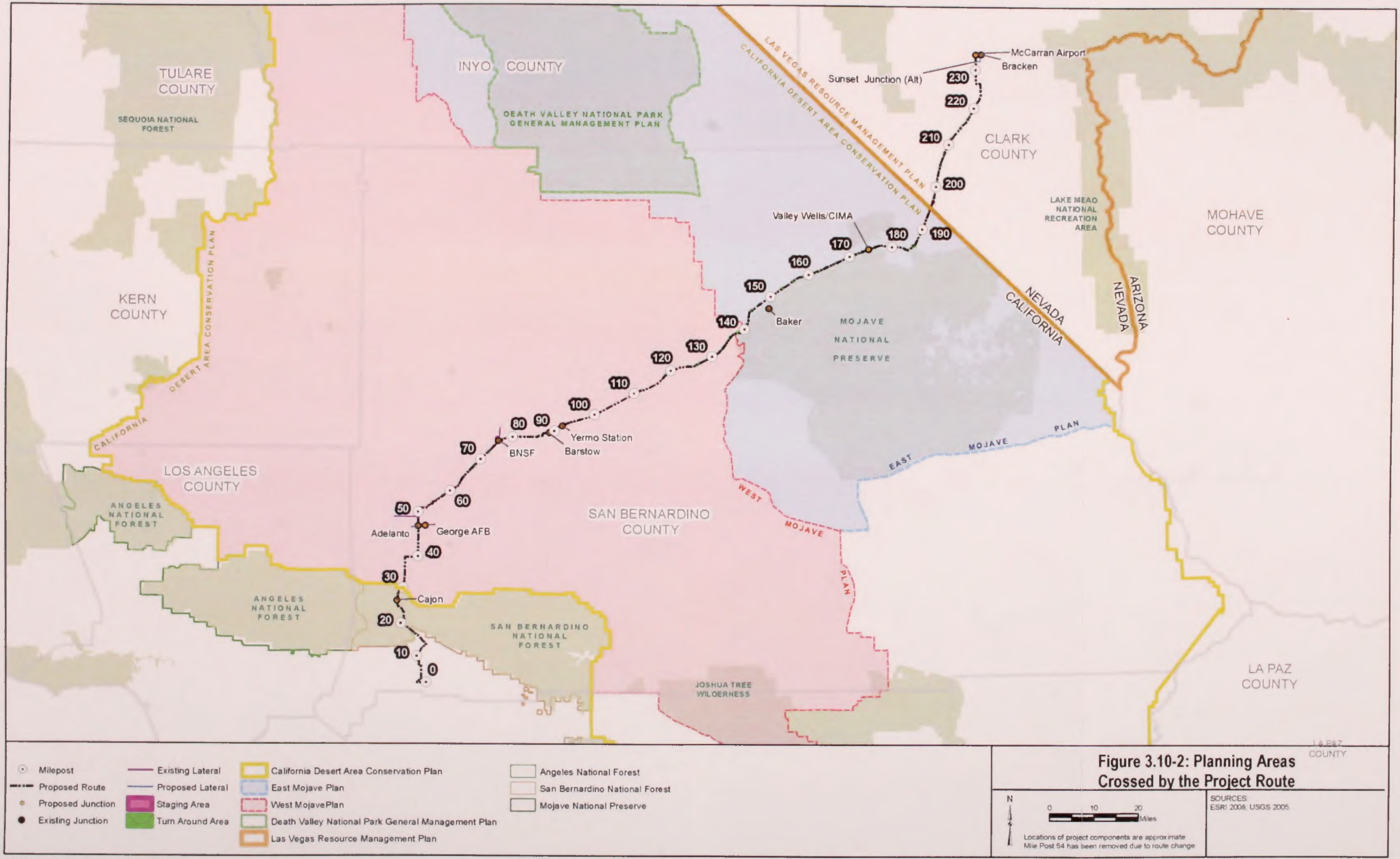

Figure 3.10-2: Planning Areas Crossed by the Project Route

Locations of project components are approximate
Mile Post 54 has been removed due to route change

SOURCES:
ESRI 2008, USGS 2005

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Date: June 28, 2011

3.11 Special Management Areas

This section describes the Special Management Areas (SMAs) that may be affected by the Proposed Project. Other sections relevant to the SMAs discussed in this section include: 3.7, Biological Resources; 3.8, Cultural Resources; 3.10, Land Use; 3.12, Aesthetics and Visual Resources; and 3.14, Recreation.

During the scoping period, government agencies and members of the public identified the following issues and concerns related to SMAs: (1) the National Park Service (NPS) does not have a legal instrument to allow construction of an additional pipeline adjacent to the existing Calnev system right-of-way (ROW) across the Mojave National Preserve (MNP) and (2) there is also no legal instrument to allow construction of a new ROW across the MNP.

3.11.1 Affected Environment

The Bureau of Land Management (BLM) and U.S. Forest Service manage federal lands that possess unique and important historical, anthropological, ecological, biological, geological, and paleontological features as SMAs. SMAs include designated wilderness and wilderness study areas, habitat for federally or state-listed species, other rare or unique habitats, natural environments, open spaces, scenic landscapes, special recreation management areas, historic locations, cultural landmarks, and fossil-bearing regions. SMAs are either designated by an Act of Congress or Presidential Proclamation or are created under BLM administrative procedures to preserve, protect, and monitor these significant components of our national heritage.

The pipeline ROW primarily traverses undeveloped lands administered by the BLM in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States Forest Service (USFS) and the Department of Defense (DoD). Lands under the jurisdiction of the State of California, San Bernardino County, the State of Nevada, and Clark County, are also crossed by the pipeline ROW. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada. Areas where the route would cross SMAs are listed in Table 3.11-1 and shown on Figure 3.11-1. These SMAs are discussed in the sections below.

Calnev had originally proposed in its application to BLM to construct the new 16-inch pipeline parallel to its existing 8-inch and 14-inch pipeline through a section of the Mojave National Preserve, which is an SMA under the jurisdiction of the National Park Service. However, Calnev has since amended its application and proposes a route outside of the boundaries of the Mojave National Preserve. Consequently, the Project will have no impacts on the MNP.

Table 3.11-1 Approximate Locations where Project Route would Cross Special Management Areas

Milepost (MP)	Land Owner/Jurisdiction	SMA Name/Designation
California (MP 0 to 195)		
MP 0 to 195	BLM	California Desert Conservation Area[1]
MP 17 to 30	SBNF	San Bernardino National Forest
MP 24.5	SBNF	Pacific Crest Trail
MP 90, 138	BLM and NPS	Old Spanish National Historic Trail
MP 60	BLM	Monkeyflower ACEC[2]
MP 180	BLM	Shadow Valley DWMA

Table 3.11-1 Approximate Locations where Project Route would Cross Special Management Areas

Milepost (MP)	Land Owner/Jurisdiction	SMA Name/Designation
MP 180	BLM	Clark Mountain ACEC
MP 190	BLM	Ivanpah DWMA
Nevada (MP 195 to 230)		
MP 212, MP 216 to 222	BLM and NPS	Old Spanish National Historic Trail

Note:

[1] Public lands between these mileposts are part of the California Desert Conservation Area.

[2] The Proposed Project route would pass near but not cross the Monkeyflower Area of Critical Environmental Concern.

3.11.1.1 Designated Wilderness Areas and Wilderness Study Areas

Wilderness Areas

Federal Wilderness Areas (WAs), designated by Congress, are defined by the Wilderness Act of 1964 as places "where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Designation is aimed at ensuring that these lands are preserved and protected in their natural condition. WAs, which are generally 5,000 acres or more in size, offer outstanding opportunities for solitude or a primitive and unconfined type of recreation; such areas may also contain ecological, geological, or other features that have scientific, scenic, or historical value (BLM 2008).

The pipeline ROW does not intersect or run immediately adjacent to any designated Wilderness areas. The nearest designated wilderness areas are the BLM-managed Hollow Hills Wilderness Area and the BLM-managed Stateline Wilderness Area in California, which are 4 and 3 miles away, respectively, from the Proposed Project route.

The Hollow Hills Wilderness Area is located 4 miles north of Baker, California. It contains plains, hills, and alluvial fans typical of the California desert. Desert tortoise and Mojave fringe-toed lizard are known to inhabit this area. Creosote, desert holly, and scale scrub plant communities prevail throughout this area (BLM 2009a). This wilderness is far enough away and upgradient of the pipeline such that no effects are anticipated from any aspect of the pipeline construction, operation, or maintenance.

The Stateline Wilderness Area is located in San Bernardino County, California, about 3 miles northwest of Primm, Nevada and Interstate 15. The area contains the eastern terminus of the 15-mile-long Clark Mountain Range. Dominant vegetation includes creosote brush and Mojave yucca, Joshua tree, cacti, and various mixed shrubs on the slopes. The highest elevations contain some pinyon-juniper habitat. Typical wildlife for the Mojave Desert includes coyote, black-tailed jackrabbits, ground squirrels, kangaroo rats, quail, roadrunners, rattlesnakes, and several species of reptile (BLM 2009b). This wilderness is far enough away and upgradient of the pipeline such that no effects are anticipated from any aspect of the pipeline construction, operation, or maintenance.

Wilderness Study Areas

Wilderness Study Areas are areas of land that may meet the criteria of WAs, as set forth by the Wilderness Act of 1964, but have yet to receive either the official designation of WA or their release from consideration as WA from Congress. The pipeline will border the Soda Mountains Wilderness Study Area.

3.11.1.2 National Conservation Areas

In 1976, Congress passed the Federal Land Policy and Management Act (FLPMA). Section 601 of FLPMA was included to give direction about a special place--the California Desert Conservation Area (CDCA). Section 601 of FLPMA recognized the unique natural and economic resources of the California desert and their location near the heavily populated LA basin, the fragility of those resources, the increasing pressures on those resources, and the need for a plan to "...provide for the immediate and future protection and administration of the public lands in the California Desert with the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality."

The National Landscape Conservation System (NLCS) is the primary management framework for SMAs. In June 2000, the NLCS was created by the BLM to bring some of the agency's premier lands into a single system. NLCS designations include National Conservation Areas and similar designations, including the entire CDCA. Based on the specific direction provided in Section 601 of FLPMA, the CDCA has been included in the NLCS, with the exception of specific areas that were subsequently set aside with the primary goal of providing for both casual and organized off-highway vehicle use to relieve the pressures and conflicts occurring in other parts of the CDCA. The entire length of the pipeline through BLM-managed lands in California is located within the CDCA.

3.11.1.3 National Forest Units

In 1891, Congress passed the Forest Reserve Act, which gave the President the authority to "set apart and reserve, in any state or territory having public land bearing forests....as public reservations." In 1905, the Transfer Act was passed and transferred the management of these lands from the Department of the Interior to the Bureau of Forestry, which became the USFS. The USFS was established by Congress to provide quality water and timber for the nation's benefit. Since its establishment, the USFS has been given the responsibility of managing national forests for additional multiple uses and benefits and for the sustained yield of renewable resources such as water, forage, wildlife, wood, and recreation. Multiple use means managing resources under the best combination of uses to benefit the American people, while ensuring the productivity of the land and protecting the quality of the environment (USFS 2004). The pipeline ROW crosses through a portion of one National Forest, the San Bernardino National Forest ([SBNF] Figure 3.11-1). The pipeline ROW crosses the SBNF from about Milepost (MP) 17 to 30 in the vicinity of the Cajon Pass.

3.11.1.4 National Parks System

The NPS was established by Congress in 1916 as a division of the Department of the Interior and was assigned the responsibility of managing all national parks, national monuments, and historical properties collectively referred to as the National Parks System. The existing Calnev system crosses the MNP, which is administered by the NPS, from approximately MP 138 to 158, and from about MP 183.5 to 185.5 (Figure 2-12 through 2-16).

Established in 1994, the MNP is managed by the NPS to “preserve unrivaled scenic, geologic, and wildlife values associated with these unique natural landscapes” (United States Congress 1994). The 1994 legislation, which designated the MNP, specifically allowed for the continued maintenance of several rights-of-way through the MNP, including two existing oil and gas pipelines. It did not provide for the authorization of new oil and gas pipeline rights-of-way.

Calnev had originally proposed in its application to BLM to construct the new 16-inch pipeline parallel to its existing 8-inch and 14-inch pipeline through a section of the Mojave National Preserve. However, Calnev has since amended its application and proposes a route outside of the boundaries of the Mojave National Preserve.

3.11.1.5 National Wildlife Refuge System

The National Wildlife Refuge System (WRS) is administered by the United States Fish and Wildlife Service (USFWS). The mission of the Refuge System is to manage a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitat. The Refuge System also maintains the biological integrity, diversity, and environmental health of these natural resources for the benefit of present and future generations of Americans (USFWS 2008). The pipeline ROW does not intersect or pass within close proximity (within 5 miles) of any National Wildlife Refuge Areas in California or Nevada; therefore, no effect on wildlife refuges is anticipated.

3.11.1.6 National Scenic and Historic Trails

In 1968, Congress passed the National Trails System Act “to provide for the ever-increasing outdoor recreation needs of an expanding population and to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas, and historic resources of the Nation” (United States Congress 1968).

The National Trails System consists of congressionally designated National Scenic Trails, which are protected scenic corridors for outdoor recreation, National Recreation Trails that provide a variety of outdoor recreation uses to the public, and National Historic Trails, which recognize prominent past routes of heritage, exploration, migration, and other events of significance in our nation’s history. The historic trails generally consist of remnant sites and trail segments, and thus are not necessarily continuous (USFS 2009). This Project crosses one National Scenic Trail and one National Historic Trail.

National Scenic Trails

National Scenic Trails are designated in areas that exhibit significant characteristics of the physiographic regions of the nation (United States Congress 1968). The pipeline ROW crosses one national scenic trail, the Pacific Crest Trail (PCT) at one location in the San Bernardino National Forest, near MP 24.5.

The PCT extends 2,650 miles from the Mexican border to the Canadian border, passing through California, Oregon, and Washington states. The trail crosses many types of terrain, such as desert areas and high altitude, glaciated expanses of the Sierra Nevada and Cascade Mountain Ranges (USFS 2009).

National Historic Trails

National historic trails are extended trails, not necessarily continuous, that follow an original trail or route of travel of national significance. National historic trails are responsible for the protection of the historic route and its historic remnants and artifacts for public use and enjoyment (United States Congress 1968). The pipeline ROW intersects one national historic trail, the Old Spanish National Historic Trail at three locations, and parallels the trail along another 6-mile segment.

The Old Spanish National Historic Trail received historical trail designation by Congress in 2002. The trail served as a trade route in the early to mid 1800s by Mexican tradesmen and American settlers traveling between Santa Fe, New Mexico and Mission San Gabriel (Los Angeles area), California. The trail crosses six states and covers more than 2,700 miles (Old Spanish Trail Association 2009). Refer to Section 3.8, Cultural Resources, for further information.

3.11.1.7 Wild and Scenic Rivers System

The National Wild and Scenic Rivers System (NWSRS) is managed by the Wild and Scenic Rivers Council; the council is composed of representatives of the BLM, USFWS, NPS, and USFS. The NWSRS was created in 1968 as an act of Congress "to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations" (Wild and Scenic Rivers Council 2009). Rivers within the NWSRS are classified as wild, scenic, or recreational. Portions of the Mojave River have been determined suitable for the NWSRS. However, the ROW would not cross the Mojave River within 5 miles of these designated areas. Therefore, no effect to the NWSRS is anticipated.

3.11.1.8 Areas of Critical Environmental Concern and Desert Wildlife Management Areas

The BLM uses the Area of Critical Environmental Concern (ACEC) designation to highlight public land areas where special management attention is necessary to protect and prevent irreparable damage to important historical, cultural, and scenic values; fish or wildlife resources; or other natural systems or processes. The ACEC designation may also be used to protect human life and safety from natural hazards. The BLM identifies, evaluates, and designates ACECs through its resource management planning process. Allowable management practices and uses, mitigation, and use limitations, if any, are described in the planning document and the concurrent or subsequent ACEC Management Plan.

The proposed pipeline borders the Mojave fringe-toed lizard, Calico Early Man Site, Parish's Phacelia, and Manix ACECs. The proposed pipeline crosses the Mojave Monkeyflower, and Cronese Basin ACECs and the Shadow Valley and Ivanpah Designated Wildlife Area (DWMAs).

3.11.2 Applicable Regulations, Plans, and Policies

Created in 2000 by the Secretary of the Interior, the NLCS brought into a single system specially designated areas managed on a landscape level under the BLM's multiple-use mandate. Nine years later, passage of the Omnibus Public Lands Management Act [P.L. 111-11 Section 2002(b)] provided a statutory basis for the NLCS. The NLCS is composed of national monuments, national conservation areas and similarly designated lands, wilderness and wilderness study areas, wild and scenic rivers, and national scenic and historic trails. The mission guiding management of the NLCS is to conserve, protect, and restore nationally significant areas recognized for their exceptional scientific, cultural, ecological, historical, and recreational values for which they were designated.

Federal Land Policy and Management Act, as amended (FLPMA)

In 1976, Congress passed the Federal Land Policy and Management Act (FLPMA). Section 601 of FLPMA was included to give direction about a special place--the CDCA. Section 601 of FLPMA recognized the unique natural and economic resources of the California desert and their location near the heavily populated LA basin, the fragility of those resources, the increasing pressures on those resources, and the need for a plan to "…provide for the immediate and future protection and administration of the public lands in the California Desert with the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality."

The Federal Land Policy and Management Act §103(a) defines an ACEC as an area "...within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards." The BLM identifies, evaluates, and designates ACECs through its resource management planning process. Allowable management practices and uses, mitigation, and use limitations, if any, are described in the planning document and the concurrent or subsequent ACEC Management Plan.

California Desert Conservation Area Plan (CDCA) and its Amendments

Within the CDCA, specific SMAs also identify designated Wilderness and Wilderness Study Areas; national scenic and historic trails; wild, scenic, and recreational rivers; ACECs; and habitat management planning areas. Chapter 4 of the CDCA Plan addresses ACECs and special areas.

Management goals in the CDCA Plan for ACECs are as follows:

- Identify and protect the significant natural and cultural resources requiring special management attention found on BLM-administered lands in the CDCA;
- Provide for other uses in the designated areas, compatible with the protection and enhancement of the significant natural and cultural resources; and
- Systematically monitor the preservation of the significant natural and cultural resources on BLM-administered lands, and the compatibility of other allowed uses with these resources.

Management goals in the CDCA Plan for special areas are as follows:

- Recognize significant natural and cultural resources found on BLM-administered lands in the CDCA;
- Provide for other uses in the designated special areas, compatible with the protection and enhancement of the significant natural and cultural resources; and

- Systematically monitor the qualities of the significant natural and cultural resources on BLM-administered lands and the compatibility of other allowed uses with these resources.

The West Mojave Plan (WEMO) amendment to the CDCA Plan was developed to address recovery of the desert tortoise and management of a number of other species in the western Mojave Desert. The WEMO presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel and nearly 100 other sensitive plants and animals and the natural communities of which they are a part. The Northern and Eastern Mojave Resource Management Plan (NEMO) Planning Effort was developed in response to USFWS recovery plans for the federally and state-listed desert tortoise and Amargosa vole. The relationship of specific strategies identified in this planning effort, and recommendations in those recovery plans, are indicated in specified appendices (Appendix A for desert tortoise, Appendix H for Amargosa vole). The NEMO Planning Effort adopted the goals of both recovery plans, and the recovery objectives for the Amargosa vole. For the desert tortoise, this planning effort, as in other planning efforts within the four-state range of the listed desert tortoise, has developed strategies that vary in some respects from the recommended actions in the recovery plan. These differences are based on identifying recovery unit alternatives and alternatives specific to Desert Wildlife Management Areas to meet the goals of the USFWS recovery plan.

Southern California Province Forest Plan

This plan is being prepared by four National Forests located in Southern California, including Angeles and SBNF, which are adjacent to and south of the West Mojave planning area. Decisions reached by the Southern California Province Plan will affect National Forest lands only. The most important cross-boundary issues that affect both the USFS planning efforts and the West Mojave Plan involve the implementation of the Carbonate Habitat Management Strategy; developing conservation programs for the San Diego horned lizard, the short-joint beavertail cactus, the gray vireo, and the arroyo toad; and the coordination of motorized vehicle access networks.

San Bernardino National Forest Land Resource Management Plan

The San Bernardino National Forest Land and Resource Management Plan guides all natural resource management activities and establishes management standards and guidelines for the San Bernardino National Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management. The goals and objectives pertain to recreation, wilderness, wildlife and fish, range, timber, soil and water, minerals, lands, facilities, protection, and public information.

Military Integrated Natural Resource Management Plans (INRMPs)

There are five military bases located within the West Mojave planning area that have prepared, or are preparing, an INRMP to guide the management of natural resources on each base. The INRMPs affect military lands only. The two INRMPS within the vicinity of the Project ROW are: (1) Edwards Air Force Base, management of the desert tortoise, Mohave ground squirrel, alkali mariposa lily, desert cymopterus, and Barstow woolly sunflower; and (2) the Marine Corps Logistics Base (MCLB) near Barstow, the management of the desert tortoise. These INRMPs also cross boundaries with the WEMO Plan Area.

Las Vegas Resource Management Plan (LVRMP)

Led by the BLM, this land use plan addressed all resource uses on public lands but emphasizes recovery of the desert tortoise in the northern and eastern Mojave Desert in southern Nevada. Thus, the LVRMP and NEMO share portions of both recovery units that are the focus for their recovery strategies. The LVRMP abuts NEMO on the southeastern boundary of the Planning Area and it is about 40 percent larger than NEMO.

3.11.3 Environmental Consequences

3.11.3.1 Requirements and Focus of NEPA versus CEQA Impact Analyses

Potential Impacts to be Evaluated Under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential impacts to SMAs have been identified for evaluation:

- The potential for the Proposed Project to conflict with management objectives established for the CDCA, a national conservation area within the NLCS (addressed as SMA-1 below);
- The potential for the Proposed Project to conflict with management objectives established for any ACECs or DWMAs (addressed as SMA-2 below); and
- The potential for the Proposed Project to impact two trails within the National Trail System (addressed as SMA-3 below).

Specific impacts to resources within these SMAs are addressed under the pertinent resource values or uses. Effects to SMAs would occur if the Project would violate existing plans, policies or laws governing the specific SMAs that may be impacted.

CEQA Significance Criteria

CEQA has no significance criteria that are associated with protection of federally-designated SMAs. Specific resource impacts within the SMAs, which could potentially impact the nature of those SMAs, are included within the scope of the CEQA impact analysis in those resource-specific sections.

3.11.3.2 Impact Analysis

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. Mitigation measures (MMs) are compiled in Section 3.9.4, Summary of Mitigation.

Proposed Project/Proposed Action (Alternative 1)

Impact SMA-1: Conflict with management objectives established for the CDCA

Section 501(a)(2) of FLPMA authorized the Secretaries of Interior and Agriculture to authorize pipelines over, under or through public lands and forest lands, respectively. Section 601(2)(d) included the CDCA as an appropriate location for the granting of rights-of-way on public lands. Under the CDCA Plan, new utilities, including pipelines, may be installed within designated utility corridors with the planning area. The Proposed pipeline route is located outside of these designated corridors in the area between MP-54 and MP-76, between Victorville and Barstow. In this area, the Proposed Route is located adjacent to the existing Calnev 8-inch and 14-inch pipelines, which were constructed prior to the designation of Utility Corridors in the CDCA Plan. Although the Proposed route would be located outside of designated corridors, it is consistent with one of the Decision Criteria for establishment of the Utility Corridors, which is to minimize the number of separate rights-of-way by utilizing existing rights-of-way. Although the Proposed route would require a CDCA Plan Amendment to allow the placement of the Proposed pipeline outside of designated utility corridors, it would not conflict with the management objective of minimizing the number of separate rights-of-way.

Impact SMA-2: Conflict with management objectives established for ACECs and DWMAs

Mojave Monkeyflower ACEC

The Mojave Monkeyflower ACEC was established in the West Mojave Amendment to the CDCA Plan. The goals for the Mojave Monkeyflower ACEC are to protect viable populations of this the Mojave Monkeyflower (*mimulus mohavensis*) plant, on public land throughout the Newberry Range and Brisbane Valley and to coordinate with mining companies to protect the species. The objectives of the Mojave Monkeyflower ACEC are to establish a core reserve on public land in the Brisbane Valley and on the west of the Newberry Mountains; to provide site-specific management of occupied habitat on public lands outside of the core reserves; and to establish a private land mitigation bank. The proposed pipeline route crosses the Brisbane Valley portion of the ACEC. Because construction could impact individuals of the species, the project would be required to comply with protection guidelines of the ACEC.

Cronese Basin ACEC

The Cronese Basin ACEC was established to protect both natural and cultural resources. The primary purpose of the ACEC management plan is to define long-range management philosophy, goals, and actions for the ACEC. The secondary purpose is to identify costs and establish priorities. The natural resource goals of the ACEC are to 1) control exotic plants and reintroduce native plants to help maintain and enhance marsh, riparian, and lacustrine habitats and to protect and preserve floral/faunal species in the area; and 2) to maintain water quality and volume. The cultural resource goals of the ACEC are to manage cultural resources within the ACEC including, but not limited to their protection, preservation, and enhancement, and 2) consideration of the importance and significance of cultural resource values. The proposed pipeline route crosses the southern portion of the Cronese Basin ACEC. Because construction could impact natural and cultural resources within the area, the project would be required to comply with protection guidelines of the ACEC.

Shadow Valley and Ivanpah ACECs / DWMAs

The primary management objectives for the Shadow Valley and Ivanpah ACECs / DWMAs are to maintain a viable population of desert tortoises through the protection of Category I critical habitat. The proposed pipeline would cross the southern portion of the Shadow Valley ACEC/DWMA and the northern portion of the Ivanpah ACEC/DWMA. Because construction could impact natural and cultural resources within the area, the project would be required to comply with protection guidelines of the ACEC.

- **MM SMA-2: Comply with Protection Measures for ACECs and DWMAs.** For project activities in each ACEC and DWMA, the Applicant will obtain and comply with specific resource protection guidelines established for that area.

Impact SMA-3: Adversely affect trails within the National Trails System.

Construction activities would temporarily impact recreational activities on the PCT and the Old Spanish National Historic Trail (OSNHT) because the Proposed pipeline ROW directly intersects with these two trails. However, the site-specific impacts on these trails from the Project would not disrupt the overall integrity of either of the trails or adversely affect the suitability of their designation as national trails. Both trails would still meet the criteria set out in the legislation for their designation. Therefore, there would be no impact on the National Trails System.

For further impact analysis and discussion of mitigation measures for the recreational and aesthetic aspects of the PCT, please refer to Section 3.14, Recreation. For further impact analysis and discussion of mitigation measures for the historic aspects of the Old Spanish National Historic Trail, please refer to Section 3.8, Cultural Resources.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to SMAs are described below:

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to SMAs. Neither route is located on federal land, and neither route is within a designated SMA. Therefore, impacts to SMAs associated with the Bloomington route would be the same as those identified for the Proposed Project.

Rialto Alternative

The Rialto Alternative route variation, and the segment of the Proposed Project that it would replace within the City of Rialto, do not have any differences with respect to SMAs. Neither route is located on federal land, and neither route is within a designated SMA. Therefore, impacts to SMAs associated with the Rialto route would be the same as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route, and the segment of the Proposed Project that it would replace within the unnamed riparian area, do not have any differences with respect to SMAs. Both routes are within the San Bernardino National Forest Land, and therefore their approval is subject to the San Bernardino National Forest Resource Management Plan. Neither route is included within the CDCA.

Both routes are located in close proximity to the PCT, and would cross the PCT at different locations. However, the site-specific impacts of either the Proposed project or the Wagon Train Road HDD Alternative on the PCT would not disrupt the overall integrity of either of the trail or adversely affect the suitability of its designation as a national trail. The PCT would still meet the criteria set out in the legislation for its designation. Therefore, there would be no impact on the National Trails System.

Overall, the potential impacts to SMAs associated with the Wagon Train Road route would be the same as those identified for the Proposed Project.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa Alternative route, and the segment of the Proposed route along Baldy Mesa Road that it would replace, do not have any differences with respect to SMAs. Neither route is located on federal land, and neither route is within a designated SMA. Therefore, impacts to SMAs associated with the Phelan Road/Baldy Mesa route would be the same as those identified for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, do not have any differences with respect to SMAs. Although both routes are located on federal land within the CDCA, there is no difference in the routes with respect to their impact on specially designated areas. Therefore, impacts to SMAs associated with the Zzyzx Alternative route would be the same as those identified for the Proposed Project.

Baker Alternative

The Baker Alternative route, and the segment of the Proposed route to the west and north of the town of Baker that it would replace, do not have any differences with respect to impacts to SMAs. The alternative route is shorter by approximately 0.6 mile, and a portion of the alternative route would be located on non-federal land within the town of Baker. In contrast, the Proposed route is longer, and would be located entirely on BLM-managed land within the CDCA. However, both routes are within designated utility corridors, and neither route would affect the character of the CDCA as an SMA. Therefore, impacts to SMAs associated with the Baker Alternative and Proposed routes would be the same.

Silver Lake Pump Station Alternative

The alternative and Proposed Action locations for the proposed Silver Lake Pump Station do not have any differences with respect to SMAs. Although both pump stations would be located on federal land within the CDCA, there is no difference in the locations with respect to their impact on specially designated areas. Therefore, impacts to SMAs associated with the Silver Lake Pump Station Alternative location would be the same as those identified for the Proposed Project.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation, and the segment of the Proposed Project that it would replace that passes through Bracken Junction, do not have any differences with respect to SMAs. Neither route is located on federal land, and neither route is within a designated SMA. Therefore, impacts to SMAs associated with the Sunset Lateral alternative would be the same as those identified for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to SMAs.

Summary

Overall, there would be no difference between Alternative 2 and the Proposed Project with respect to impacts to SMAs. Although the routes would cross the PCT at different locations in the Wagon Train area, neither route would affect the status of the PCT in the National Trails System. As discussed in Section 3.14 (Recreation), mitigation measures would be required for both the Proposed Project and Alternative 2 to avoid impacts to recreational users of the trail during construction. Also, none of the potential alternative routes for Alternative 2 would eliminate the need for amendment to the CDCA Plan to construct the pipeline outside of a designate Utility Corridor.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. Because no potential impacts to SMAs were identified as part of Alternatives 1 or 2, there would consequently also be no impacts to SMAs under Alternative 3.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure would be installed. No ground-disturbing activities would take place and potential impacts to SMAs resulting from current activities on the existing pipelines would remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems would be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines would remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, CA to Las Vegas, NV. No SMA impacts are associated with the current operations.

3.11.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.11-2, there are differences in impacts based on the route variations.

Table 3.11-2 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
Route would pass through SMAs, and would need to comply with SMA-specific measures.	No difference in passage of route through SMAs. Would need to comply with SMA-specific measures.	No difference in passage of route through SMAs. Would need to comply with SMA-specific measures.	No impacts.

3.11.4 Summary of Mitigation

A complete list of mitigation measures is presented by impact in Table 3.11-3. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table. In addition, impacts to specific resources within the SMAs are possible, and these would be mitigated as discussed in those specific resource sections.

Table 3.11-3 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
SMA-2: Conflict with management objectives established for ACECs and DWMAs	**MM SMA-2:** Comply with Protection Measures for ACECs and DWMAs	Within respective SMA	BLM	During and immediately following construction.

References

Bureau of Land Management (BLM). 2008a. *Wilderness Areas.* http://www.blm.gov/ca/st/en/prog/wilderness/wa.html. Accessed May 14, 2009.

Bureau of Land Management (BLM). 2009a. *Hollow Hills Wilderness.* http://www.blm.gov/ca/pa/wilderness/wa/areas/hollow_hills.html. Accessed January 29, 2009.

Bureau of Land Management (BLM). 2009c. *Stateline Wilderness.* http://www.blm.gov/ca/pa/wilderness/wa/areas/stateline.html. Accessed January 29, 2009.

Old Spanish Trail Association. 2009. *Background on the Old Spanish Trail.* http://www.oldspanishtrail.org. Accessed January 29, 2009.

United States Congress. 1968. *The National Trail System Act of 1968.* http://www.nps.gov/nts/legislation.html. Accessed May 14, 2009.

United States Congress. 1994. *California Desert Protection Act*. July. http://www.nps.gov/archive/moja/planning/cdpa.htm. Accessed May 14, 2009.

United States Forest Service (USFS). 2004. *History*. http://www.fs.fed.us/aboutus/history. Accessed May 14, 2009.

United States Forest Service (USFS). 2009b. *Welcome to the Pacific Crest National Scenic Trail Website.* http://www.fs.fed.us/pct. Accessed May 14, 2009.

United States Fish and Wildlife Service (USFWS). 2008. *Welcome to the National Wildlife Refuge System.* http://www.fws.gov/refuges/about/welcome.html. Accessed May 14, 2009.

Wild and Scenic Rivers Council. 2009. *National Wild and Scenic Rivers Home Page.* http://www.rivers.gov. Accessed May 14, 2009.

Figure 3.11-1: Special Management Areas in the Vicinity of the Project Route

SOURCES: ESRI 2008; USGS 2005

Locations of project components are approximate
Mile Post 54 has been removed due to route change

E:\GIS\CalNev_Pipeline\MXDs\special_management_areas.mxd
Date: June 29, 2011

3.12 Aesthetics and Visual Resources

This section describes the existing visual resources that may be affected by the Proposed Project. This section also discloses permanent and temporary impacts on visual resources. During the scoping period, government agencies and members of the public identified the following issues and concerns related to visual resources: (1) ensure minimal visual impact on the surrounding environment by, for example, dyeing concrete; and (2) repair damage to landscaping and roadways caused by Proposed Project activities. These comments are addressed and mitigation measures proposed in Section 3.12.3, Environmental Consequences.

3.12.1 Affected Environment

This section discusses the visual resources in or near the Proposed Project area. The proposed pipeline route and alternatives would primarily traverse undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States Forest Service (USFS) and the Department of Defense (DoD). Lands under the jurisdiction of the State of California, the State of Nevada, San Bernardino County, and Clark County would also be crossed by the pipeline. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

Descriptions as well as photographs that represent current views of the area are presented in this section to establish a baseline visual setting for the Proposed Project. Visual resources in the area are organized into two landscape categories: 1) developed or built; and 2) undeveloped or natural.

Developed or Built Landscape

Developed lands in the Proposed Project area include residential, rural residential, industrial, and commercial lands in the municipalities and populated places crossed by the Proposed Project. South of the San Bernardino National Forest (SBNF), the pipeline would cross the cities of Colton, Bloomington, and Rialto. These cities are characterized by industrial developments (Figure 3.12-1) and residential developments (Figure 3.12-2). North of the SBNF, the pipeline would cross the cities of Victorville, Adelanto, and Barstow. The portions of these cities crossed by the Proposed Project are characterized by lower density development and can be largely classified as rural residential (Figure 3.12-3). The pipeline crosses undeveloped land in Nevada until its terminus in the Paradise/Winchester Community Planning Area in Clark County. Development in this area is characterized by industrial and residential development.

Of the 234 miles of pipeline that would be constructed, approximately 150 miles would be constructed adjacent to the existing Calnev ROW. In rural areas, the existing pipeline is permanently visible where revegetation efforts were incomplete; additionally, the access road paralleling the entirety of the existing Calnev system and the Calnev pipeline hats, or markers, along the pipeline route are evident (Figure 3.12-5).

Undeveloped or Natural Landscape

After leaving Rialto, the pipeline would cross the SBNF parallel to Interstate 15 (I-15) within an established utility corridor. Views within the SBNF along the Proposed Project route are characterized by cismontane vegetative cover and mountainous backdrop (Figure 3.12-4).

Beyond the SBNF, the pipeline would cross lands almost entirely in the Mojave Desert. This area is generally characterized as open, desert habitat. Terrain features include dry lakebeds, rolling hills, bajada slopes, broad flat plains, and jagged mountains. Vegetation consists primarily of creosote bush (Figure 3.12-5).

Terrain in the Nevada portion of the Proposed Project is similar to that in California. It is largely flat with dry lake beds (Figure 3.12-6). Vegetative cover in Nevada includes creosote bush, saltbush species, diverse cacti and yucca species as well as annual flowers.

3.12.2 Applicable Regulations, Plans, and Policies

3.12.2.1 Federal

Federal Land Policy and Management Act as amended (FLMPA)

The FLPMA of 1976 (90 Stat. 2743; 43 United States Code 1601, et seq) established BLM as the jurisdictional agency for expanses of land in the West 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." (BLM 2001).

Federal regulations regarding aesthetics and visual resources related to the Proposed Project are outlined in BLM published Resource Management Plans (RMPs) and are enacted through the application of Visual Resource Management (VRM) classifications described in the Methodology section of this chapter. The following RMPs apply to land crossed by the proposed pipeline.

California Desert Conservation Area (CDCA) Plan

Within California, a portion of the Proposed Project would be located on land managed according to the CDCA Plan (BLM 1980). The CDCA Plan does not include VRM classifications. However, both the Barstow Field Office and Needles Field Office have established Interim Visual Resource Inventories, which include interim classifications based on the BLM Manual H-8410 (BLM 1986). As defined in Manual H-8410, BLM VRM classifications are developed based on perceived scenic quality, sensitivity levels, and distance zones. Four classifications correspond to management objectives as follows:

- **VRM 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.

- **VRM 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.
- **VRM 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.
- **VRM 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.

Las Vegas Resource Management Plan

Within Nevada, a portion of the Proposed Project would be located on land managed according to the Las Vegas RMP (1988). The BLM Southern Nevada District Office manages land under its jurisdiction according to the goals and policies outlined in the Las Vegas RMP (1998) 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 proposed pipeline would cross VRM Class III and VRM Class IV land in Nevada. The following management directions pertain to visual resources on BLM lands crossed by the proposed pipeline:

- **VS-1b.** Designate 1,727,870 acres of public lands as VRM Class III for partial retention of the existing character of the landscape. In these areas, authorized actions may alter the existing landscape, but not because they attract or focus the attention of the casual viewer.
- **VS-1c.** Designate 635,135 acres of public lands as VRM Class IV, which allows activities involving major modification of the landscape's existing character. Authorized actions may create significant landscape alterations and would be obvious to casual viewers.

San Bernardino National Forest Land Management Plan (LMP)

The SBNF LMP guides all natural resource management activities and establishes management standards and guidelines for visual resources within the SBNF. The LMP outlines Scenic Integrity Objectives (SIOs) which prescribe the level of visible change allowable within SBNF boundaries. Scenic Classes are determined based on distance zones, concern level, and existing scenic integrity and managed to ensure that changes and development fit with existing type, form, line, color, and texture. Scenery management classifications for USFS land correspond to the following management objectives:

- **Very High (Unaltered-Preservation).** Scenic integrity refers to landscapes where the valued landscape character is intact with only minute if any deviations. The existing landscape character and sense of place is expressed at the highest possible level.

- **High (Appears Unaltered-Retention).** Scenic integrity refers to landscapes where the valued landscape character appears intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.
- **Moderate (Slightly Altered-Partial Retention).** Scenic integrity refers to landscapes where the valued landscape character appears slightly altered. Noticeable deviations must remain visually subordinate to the landscape character being viewed.
- **Low (Moderately Altered-Modification).** Scenic integrity refers to landscapes where the valued landscape character appears moderately altered. Deviations begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes, or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but also compatible or complimentary to the character within.

Landscapes within the SBNF with high or very high SIOs are managed to maintain a natural appearance.

SBNF LMP Part 3: Design Criteria for the South California National Forest outlines design criteria for the SBNF, including aesthetic management standards and directs use of the Scenery Integrity Objectives (SIOs) and the timeframe to achieve these uses (USFS 2005b). Design criteria applicable to the project include the following:

- **S9.** Design management activities to meet the SIOs shown on the SIOs Map; and
- **S10.** SIOs will be met with the following exceptions:
  - Minor adjustments not to exceed a drop of one SIO level is allowable with the Forest Service Supervisor's approval.
  - Temporary drops of more than one SIO level may be made during and immediately following project implementation provided they do not exceed three years in duration.

The pipeline would cross through the SBNF within the designated Cajon Pass energy corridor. Regarding developed land within the SBNF or visual resources previously disturbed by infrastructure projects, the LMP states that, "Most of the human-influenced alterations affecting landscape scenic integrity have occurred on the San Bernardino National Forest…Heavily altered or unacceptably altered landscapes in key places are the priority areas for landscape restoration." The LMP further states that, "Development of other utility infrastructure in suitable land use zones and corridors has the potential to introduce prominent non-characteristic linear patterns in forest vegetation that is difficult to visually integrate into the landscape" (USFS 2005a).

National Park Service (NPS)

The NPS was established by Congress in 1916 as a division of the Department of the Interior and was assigned the responsibility of managing all national parks, national monuments, and historical properties. The existing Calnev system crosses the Mojave National Preserve (MNP), which is administered by the NPS, from approximately MP 138 to 158, and MP 183.5 to 185.5 (Figure 2-16). A portion of the proposed pipeline would be routed along the northern boundary of the MNP, along I-15.

The MNP General Plan cites three primary sources of impacts to visual resources within the Preserve: cellular towers, air pollutants, and light pollution. The General Plan does not address construction of infrastructure projects except for specific instructions regarding cellular towers. For cellular tower projects, the General Plan states that construction of aboveground facilities must not "distract from the visual quality of the scenery" (NPS 2002).

National Trails System Act

National Trails were established under the National Trail System Act of 1968 (16 United States Code §1241-51), designating and protecting national scenic trails, national historic trails, and national recreational trails. National trails are administered by BLM, the NPS, and the USFS; these agencies provide coordination and oversight for the entire length of a trail. However, as these trails traverse both public and private lands as well as lands controlled by various agencies, on-site management activities are performed by the jurisdictional agency, the state, or the landowner (NPS 2008). The pipeline would cross the Pacific Crest Trail, managed by the USFS and the Old Spanish Trail, managed jointly by the NPS and BLM.

National Historic Preservation Act (NHPA)

The NHPA includes language protecting the visual integrity of sites listed or eligible for the National Register of Historic Places: "Examples of adverse effects…include…introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features…" (36 Code of Federal Regulations Part 800.5). Impacts to visual resources protected by the NHPA are discussed in Chapter 3.8, Cultural Resources.

3.12.2.2 State

State of California

California Department of Transportation

The California State Department of Transportation administers the State Scenic Highway Program to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways (California Streets and Highways Code § 260, et seq.). The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in the Streets and Highways Code § 263. The program entails the regulation of land use and density of development, attention to the design of sites and structures, attention to and control of signage, landscaping and grading as well as other restrictions. The local jurisdiction is responsible for adopting and implementing such regulations. If a highway is listed as eligible for official designation, it is also part of the Scenic Highway System and care must be taken to preserve its eligibility status. Interstate 15 is not officially designated as a scenic highway, but is eligible for the California State Scenic Highway System from its intersection with State Route 58 in Barstow to its intersection with SR 127 in Baker. Additionally, the pipeline would both parallel and cross Historic Route 66 in California.

State of Nevada

Nevada Department of Transportation

The Nevada Department of Transportation (NDOT) developed the I-15 Landscape and Aesthetics Corridor Plan (NDOT 2005) as required by the NDOT Master Plan (NDOT 2002). The I-15 Landscape and Aesthetics Corridor Plan does not contain any rules, regulations, or policies regarding projects built within view of the I-15 corridor. However, in outlining planned landscape and aesthetic improvement projects for the corridor, the I-15 Landscape and Aesthetics Corridor Plan does establish scenic zones along the highway. The Proposed Project would parallel the portion of I-15 classified as the "Gateway to Nevada's Excitement" Design Segment. Design Objectives for the portion of I-15 paralleled by the Proposed Project are classified as Statewide Gateway (near Primm, Nevada), Preserved Desert Landscape Character (from Roach, Nevada to Jean, Nevada), and Managed Desert Landscape Character (from Jean, Nevada to Sloan, Nevada). Design objectives for these segments of I-15 applicable to the Proposed Project include the following:

- Preserved Desert Landscape Character
  - 2. Preserve scenic views of mountain ranges in the distance, middle ground of the Mojave Desert, and lake beds in the foreground.
- Managed Desert Landscape Character
  - 1. Plan for a future design context that will integrate expected growth, major facilities, and development within this segment.
  - 2. Maintain the desert character in conjunction with new urbanization and growth.

There are no designated or eligible Scenic Highways within view of the Proposed Project in Nevada.

3.12.2.3 Local

San Bernardino County, California

The Conservation and Open Space Elements of the San Bernardino County General Plan include the following goals, objectives, and programs relating to aesthetic and visual resources (County of San Bernardino 2007):

- **Goal D/CO 1.** Preserve the unique environmental features and natural resources of the Desert Region, including native wildlife, vegetation, water, and scenic vistas.
- **Policy D/CO 1.2.** Require future land development practices to be compatible with the existing topography and scenic vistas and protect the natural environment.
- **Policy D/CO 3.2.** All outdoor lighting including street lighting shall be provided in accordance with the Night Sky Protection Ordinance and shall only be provided as necessary to meet certification standards.
- **Goal OS5.** The County will maintain and enhance the visual character of scenic routes in the County.
- **Policy OS 5.1.** Features meeting the following criteria will be considered for designation as scenic resources: a.) A roadway, vista point or area that provides a vista of

undisturbed natural areas, b.) Includes a unique or unusual feature that comprises an important or dominant portion of the viewshed (the area within the field of view of the observer), c.) Offers a distant vista that provides relief from less attractive views of nearby features (such as views of mountain backdrops from urban areas).

- **Policy OS 5.2.** Define the scenic corridor on either side of the designated route, measured from the outside edge of the ROW, trail, or path. Development along scenic corridors will be required to demonstrate through visual analysis that proposed improvements are compatible with the scenic qualities present.
- **Policy OS 5.3.** The County desires to retain the scenic character of visually important roadways throughout the County. A "scenic route" is a roadway that has scenic vistas and other scenic and aesthetic qualities that, over time, have been found to add beauty to the County. Interstate 15 has been designated as a scenic highway by the County, but the following areas are excluded from this designation:
  - Areas within the Barstow Planning Area and the community of Baker where there is commercial/industrial development;
  - Portions within the Yermo area from Ghost Town Road to the East Yermo Road overcrossing on the south side only; and
  - From the First Street to East Yermo Road overcrossing on the north side and all incorporated areas.
- **Night Sky Protection Ordinance (Ord. 3900).** This ordinance provides that "Commercial and industrial outdoor lighting must be fully shielded so that no light is emitted above the horizontal plane...do not direct light or light trespass onto adjacent property...or to any member of the public who may be traveling on adjacent roadways."

Clark County, Nevada

Clark County's Open Space Plan identifies five components to preserve the outdoor elements of the Greater Las Vegas metro area, including "Regionally Significant/Heritage Open Space (preserving special landscapes of scenic, natural, or cultural value throughout the valley)." The Open Space Plan recommends developing conservation overlays as a mechanism for protecting visual resources within the Greater Las Vegas area.

Clark County's Conservation Element does not directly address aesthetic or visual resources. However, the Conservation Element does include maps of unique geological features within the planning area. The Proposed Project would not be located within the vicinity of any unique geological features as identified in the Clark County Conservation Element (Clark County 2000).

3.12.3 Environmental Consequences

3.12.3.1 Requirements and Focus of NEPA versus CEQA Impact Analyses

Potential Impacts to be Evaluated Under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential impacts to visual resources have been identified for evaluation:

- For BLM land, visual resource contrasts that may conflict with the management objectives of assigned VRM or interim (iVRM) classes (addressed as VIS-1 below); and
- For USFS land, visual impacts that may conflict with assigned Scenic Integrity Objectives (included in the evaluation of VIS-1 below).

CEQA Significance Criteria

Under CEQA, the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to aesthetics, the relevant CEQA significance criteria provided in Section I of the checklist are based on whether the Proposed Project would:

- Have a substantial adverse effect on a scenic vista (addressed as VIS-2 below);
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway (addressed as VIS-3 below);
- Substantially degrade the existing visual character or quality of the study area or its surroundings (addressed as VIS-4 below);
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area (addressed as VIS-5 below).

Methodology

The following methodology for determining impacts on visual resources was developed in consultation with multiple jurisdictional agencies. The land crossed by the pipeline and affected by associated aboveground facilities is managed by a variety of agencies; therefore, the methodology used to determine impacts on visual resources differs for segments of the pipeline. However, the basic design principles used to describe the views, to determine the degree to which views would be impacted, and to project the extent to which the landscape would be restored to its pre-existing condition are consistent throughout. Viewsheds are characterized based on four visual elements of landform, vegetation, and structures, as defined below:

- **Form.** The size and shape of an object or group of related objects;
- **Line.** A perceived border formed by contrasting elements including contrasts in form, color, or texture;
- **Color.** Dominant visual feature which includes hue, shade (darkness/lightness), and intensity or level of saturation; and
- **Texture.** Patterns of color and form that emerge when viewing a group of related objects (i.e., groupings in which individual features are not distinct).

Views along the pipeline route and of features of the Proposed Project are also described in terms of distance zones. These include foreground (0 to 0.25 mile), middle ground (0.25 mile to 2 miles), and background (2 to 5 miles) views.

Bureau of Land Management

The majority of the land traversed by the pipeline and affected by associated aboveground facilities is managed by BLM Field Offices in Barstow, Needles, and Las Vegas. To assess impacts on visual resources, Key Observation Points (KOPs) are identified along the Proposed Project route and discussed in this section. KOPs are selected in consultation with BLM Field Offices.

VRM classes are assigned in BLM RMPs, however, the CDCA Plan does not contain VRM classes. In the absence of VRM classifications, or in areas where interim development has significantly changed landscape characteristics, the BLM Field Office is responsible for developing iVRM classifications (BLM 2008). For land crossed by the proposed pipeline under the jurisdiction of the Barstow Field Office, BLM is in the process of preparing iVRM classes (Seehafer 2009). For land crossed by the proposed pipeline under jurisdiction of the Needles Field Office, this analysis considers the Visual Resource Inventory published by that office in 2010 (BLM 2010). For land crossed by the pipeline under the jurisdiction of the Las Vegas Field Office, this analysis considers the VRM classifications outlined in the Las Vegas RMP (BLM 1998). The currently available visual characteristics and classification data are provided in Table 3-12.1.

Table 3.12-1 BLM Visual Resource Characteristics and Classifications

Milepost	Office	Scenic Quality Classification	Sensitivity Level	Distance Zone	Visual Resource Inventory Class
30-55	Barstow Field	A	L	Foreground/Middle	II
55-74.5	Barstow Field	B	L	Foreground/Middle	II
74.5-77	Barstow Field	A	L	Foreground/Middle	II
77-78	Barstow Field	B	M	Foreground/Middle	IV
78-80	Barstow Field	B	H	Foreground/Middle	III
80-84	Barstow Field	B	L	Foreground/Middle	II
84-86	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
86-107	Barstow Field	A	L	Foreground/Middle	II
107-122	Barstow Field	B	L	Foreground/Middle	II
122-125	Barstow Field	B	L	Foreground/Middle	II
125-128	Barstow Field	B	L	Foreground/Middle	II
128-133	Barstow Field	B	M	Foreground/Middle	III
133-146	Barstow Field	B	M	Foreground/Middle	III
146-152	Barstow Field	C	M	Foreground/Middle	III
152-164	Needles Field	B	H	Foreground/Middle	II
164-195	Needles Field	B	H	Foreground/Middle	II
195-215	Southern Nevada District	A	M	Foreground/Middle	IV
215-219	Southern Nevada District	A	M	Foreground/Middle	III
219-223.5	Southern Nevada District	B	M	Foreground/Middle	IV

In addition to consultation with BLM and the preparation of iVRM classes, a sensitivity analysis was performed to select appropriate KOPs as outlined in BLM VRM Manual 8431 (BLM 1986). The sensitivity analysis considered the following factors: viewer sensitivity (based on the type of user, the amount of use, and public interest), adjacent land uses, and any special management areas. Special management areas include any areas with protected visual resources, such as National Parks, Wilderness, Wilderness Study Areas, Areas of Critical Environmental Concern, Wild and Scenic Rivers, Scenic Byways, Native American sacred sites, designated Historic Trails, and other distinct or remarkable landscape features in the Proposed Project area. KOPs include critical viewpoints where the Proposed Project would be visible to a large number of viewers, typical viewpoints that show representative views in the Proposed Project area, and any features of the Proposed Project or special landscape features including aboveground facilities and visually remarkable features within the Proposed Project area. This analysis considers and rates the degree of contrast that would be introduced by the Proposed Project at the KOPs.

The pipeline would cross lands designated as VRM Class II, III, and IV. Visual contrast introduced by the Proposed Project in these areas would not be apparent after the implementation of the re-vegetation plan or would not conflict with VRM goals.

This visual resource assessment uses a line of sight analysis to determine the level of contrast that would be introduced by the Proposed Project, focusing on the four visual elements described above: form, line, color, and texture. This analysis of visual impacts refers to the visual element descriptions as well as the baseline photographs to determine the level of contrast introduced by the Proposed Project. This analysis also considers the longevity of visual impacts, differentiating among temporary impacts such as those associated with construction, longer term impacts such as clearing trees, and permanent impacts such as new above ground structures or the permanent alteration of landscape contouring.

The location of each KOP is shown in Figure 3.12-7. All photos were taken with a digital camera using a 50 mm focal length lens held at eye level during daylight hours. Details of the photographs, including the time, date, and direction are included in the KOP log in Appendix E.

Key Observation Points

No visual simulations were prepared for this Project. However, the Key Observation Points (KOPs) photographs show the existing viewshed of the proposed pipeline alignment, which will be adjacent to the existing pipeline alignment. In addition, the KOPs show the existing pipeline which is indicateswhat the viewshed of the new pipeline alignment would look like in the long term.

KOP 1, View from Baldy Mesa Road, represents views as seen from rural residences north of the SBNF. This area does not currently have an iVRM classification. The view from Baldy Mesa Road has uniform color with muted natural tones and a uniform texture created by the density of desert scrub. The form is dominated by an existing transmission line, and the viewshed is bisected by both Baldy Mesa Road and the transmission line.

KOP 2, Railroad and Historic Route 66 crossing near an ostrich farm (near Hodge), represents views of the railroad and Historic Route 66 crossings from an agricultural area near Hodge, California. This area does not currently have an iVRM classification. Colors in the viewshed are muted natural tones, and the texture is uneven due to development associated with both agricultural uses and the railroad. The form is dominated by agricultural development, and the line of the viewshed follows the existing road.

KOP 3, Mountain Pass, depicts views seen from the Mountain Pass region north of I-15. This land is classified as iVRM Class III. Views from this location are dominated by the form of the mountain backdrop. The colors are uniform muted natural tones and the texture is characterized by the contrast of the scrubland seen in foreground and middle-ground views and the rocky, mountainous backdrop.

KOP 4, Scrubland off I-15 at Cima Road North of the MNP, depicts a representative view of desert scrubland north of I-15 and within view of the Mojave National Preserve. This area does not currently have an iVRM classification. The view from Cima Road is a uniform flat expanse characterized by muted natural tones and an even texture of sparse desert shrub. Jagged mountain peaks form a distant backdrop. The view is bisected by the existing Calnev Pipeline System and an aboveground yellow marker can be seen in the foreground.

KOP 5, shows a similar view of Silver Lake Pump Station site, which would be located approximately one quarter mile to the east. The Pump Station Site is located adjacent to Highway 127, which leads from I-15 at Baker, California to Death Valley National Park. This area does not currently have an iVRM classification. The Silver Lake Pump Station site has been graded and contrasts with the texture of the desert scrubland in the background. Colors within the viewshed and uniformly muted natural tones. The viewshed is bisected by existing transmission lines and a highway. The SCE substation is also immediately adjacent to the pump station and transmission lines dominate the view.

KOP 6, View from Historic Route 66 Showing a Railroad and the Mojave River Crossing near Daggett, California, shows a view of a railroad and where the pipeline would cross the Mojave River. This area is heavily used by military personnel at the Barstow Marine Corps Logistics Base. This area does not currently have iVRM classes. The view from Historic Route 66 is characterized by uniform muted natural tones and an even texture of desert shrub. The view is bisected by the railroad. Because the railroad is raised, the Mojave River (which was dry at the time the photo was taken) cannot be seen in the background. The form of the photo is dominated by markers for the existing Calnev Pipeline System.

KOP 7, Old Spanish Trail, depicts a view of where the pipeline would cross the Old Spanish Trail, which does not currently have iVRM classes and is not visible from KOP 7. Views in this area are characterized by uniform muted natural tones and an even texture created by the density of desert scrub. The landscape is flat with a distant mountain backdrop.

KOP 8, Primm, Nevada, depicts a view of where the pipeline would run near Primm, Nevada, which is designated VRM Class III. The view of Primm is characterized by uniform muted natural tones and sparse desert shrub. An existing transmission line bisects the view, and the form is dominated by the transmission line and the casino and housing developments within Primm.

KOP 9, Ivanpah Dry Lake, shows a view of the Ivanpah Dry Lake, a popular recreation area. This area has an iVRM Class III designation. The viewshed is characterized by the light, barren lakebed. The flat surface of the lakebed contrasts with the mountainous backdrop. The viewshed is bisected by a distant transmission line.

United States Forest Service

As described in the Section 3.12.2 of this Chapter, the USFS Scenery Management System establishes SIO ratings for USFS lands to guide scenery management practices and set scenery management standards. The currently available visual characteristics and classification data are provided in Table 3-12.2.

Within the SBNF, the proposed pipeline would cross lands with High SIO, which prescribes retention of scenic character and quality; however, the land crossed by the Proposed Project in the SBNF is also a designated utility corridor. The Cajon Pass corridor currently accommodates six transmission lines, four gas lines, five fiber optic lines, three rail lines, and two highways. The highways and roadways paralleled by the pipeline within the ROW include I-15, a heavily traveled route, and a portion of Historic Route 66, a National Scenic Byway.

Due to these considerations, the Proposed Project area is considered to have a high level of visual sensitivity. This analysis uses a series of representative photographs taken at intervals along I-15 to characterize current viewsheds within the corridor. These photos represent an existing, characteristic landscape, against which this analysis gauges potential changes in form, line, color, and texture (Figure 3.12-8). As with the analysis for BLM land, the analysis of impacts on visual resources within the Cajon Pass area considers both temporary and permanent impacts.

Table 3.12-2 USFS Visual Resource Characteristics and Classifications

Milepost	Scenic Attractiveness	Scenic Integrity Objective	Visibility	Class
17.25-19	C	H	Middle Ground	1
19-24	B	H	Middle Ground	1
24-24.5	A	H	Middle Ground	1
24.5-25	B	H	Middle Ground	1
25-25.25	A	H	Middle Ground	1
25.25-28.5	B	H	Middle Ground	1
28.5-29.75	C	H	Middle Ground	2

Corridor Photos

Corridor photos 1 through 5 show the variety of views seen by motorists driving along I-15 or Historic Route 66 through the Cajon Pass within SBNF. Motorists driving these roadways have high expectations for the views within the SBNF which are characterized by lower elevation foreground and middleground views with mountainous backdrop and cismontane cover. Development is limited to energy and transportation infrastructure including a number of transmission lines sited both through the valley and along ridgelines, numerous roadways, and a railroad. Furthermore, the new pipeline is proposed to be located within Cajon Boulevard for three of the five corridor photo locations.

San Bernardino County

For land under the jurisdiction of San Bernardino County, the visual resources analysis presents a series of photographs of visually sensitive or protected locations. Visually sensitive locations include areas with unique visual features; areas identified in the scoping process as visually sensitive; places with protected visual resources as identified in the County's General Plan policies or ordinances; and any other locations with a high expectation of scenic views, including rural residences and recreation areas. This analysis characterizes these locations in terms of existing form, line, color, texture, scale, and shape, and describes the level of contrast that would be introduced by the Proposed Project. The analysis also considers the representative photographs presented above. The KOPs for San Bernardino County land crossed by the pipeline are included with BLM KOPs in Appendix E.

Key Observation Points

KOP 10, Colton Terminal, shows the view at the Colton Terminal. The Colton Terminal is located within an area of Colton, California characterized by moderate industrial development, which dominate views. Viewers are primarily workers commuting to industrial facilities in the area, and due to the short duration of views and the surrounding development, the expectation of a view is low. The texture and colors within the view are uneven due to industrial structures, and there are no uniform lines or forms within the viewshed.

KOP 11, Glen Helen Regional Park, depicts a view of the Proposed Project from Glen Helen Regional Park. This is a popular recreation area near a number of off highway vehicle trails and the location of an entertainment pavilion. Expectations of views within the park are high due to the recreational purpose of the park and its setting at the entrance to the SBNF. Views from this location are characterized by the vibrant lawns contrasting with the distant backdrop of the SBNF. There is a sparse arrangement of trees and the curved paths within the park create a natural line that complements the mountainous backdrop.

KOP 12, Rural Residential View from Phelan, California, represents views from residences within San Bernardino County outside of Phelan, California. There is a high expectation of a view from rural residences, and residents have longer exposure periods. The viewshed is characterized by predominately muted natural tones with a cluster of rich green trees in middle-ground views. The terrain is largely flat with an even, dense texture created by the desert shrub. Poles from a transmission line are faintly visible in middle-ground views.

Clark County

For land crossed by the pipeline under the jurisdiction of Clark County, this visual resource analysis presents a series of photographs of visually sensitive or protected locations. Visually sensitive locations include areas with unique visual features; areas identified in the scoping process as visually sensitive; places with protected visual resources as identified in the County's General Plan policies or ordinances; and any other locations with a high expectation of scenic views, including rural residences and recreation areas. An analysis of the contrast that would be introduced by the Proposed Project compares the existing form, line, color, texture, scale, and shape, as seen in these photographs. The KOPs for Clark County land crossed by the Proposed Project are included with BLM KOPs in Appendix E.

Key Observation Points

KOP 13, Residential View from Las Vegas, Nevada, represents views from residences outside of Las Vegas, Nevada. There is high exposure to views of the Proposed Project for residences outside of Las Vegas and the expectation of views from residences is high; however, the area has experienced rapid and expansive development. The view from this location is characterized by distant development and construction equipment in the foreground.

3.12.3.2 Impact Analysis

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under NEPA and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Mitigation measures (MMs) are compiled in Section 3.12.4, Summary of Mitigation.

Proposed Project/Proposed Action (Alternative 1)

Impact VIS-1: Impacts on KOPs

Construction Impacts

Visual impacts associated with the Proposed Project construction would include the removal of existing vegetation and the exposure of bare soils within construction workspaces, as well as earthwork and grading, open cutting, potential blasting, rock formation alteration or removal, and equipment storage. These construction impacts are considered temporary for underground pipeline once the land has reverted to its original uses, as outlined in the Calnev Reclamation Plan.

The majority of the land traversed constitutes flat expanses of scrubland or rolling hills with major geological features that include dry lake beds and mountainous areas with cismontane cover. Due to a lack of development, visual scale is uniform, with little contrast in line, form, color, or texture, and no dominant features. Construction in flat terrains would disrupt and dominate foreground and middle ground views with the introduction of equipment, materials, trenches, and dirt piles. Disruption of views due to construction equipment would be very apparent in foreground views, visible in middle-ground views, and largely unnoticeable in background views. KOPs 1, 4, 7, 9, and 12 show views of flat desert terrain within .25 miles of the Proposed Project (foreground views). Construction in these areas would disrupt the uniformity of the texture and colors of these views and would create a line that would dominate the viewshed. Construction in more densely vegetated areas would similarly disturb views and would additionally alter the terrain with the clearing of vegetation. The Corridor Photos in Appendix E show views of more densely vegetated cismontane cover.

The Proposed Project would cross the cities of Colton, Bloomington, Rialto, Victorville, Adelanto, Barstow, Henderson, and Las Vegas. In developed areas, open cutting along the ROW, primarily along city streets, would diminish visual resources by exposing soil beneath the street surface and as a result of the windrowing of concrete and debris along the ROW. KOPs 2, 8, 10, and 13 depict views of developed areas. The Proposed Project would temporarily disrupt views in these areas by introducing construction equipment.

Construction impacts would be greatest for areas with strong visual contrasts and high levels of viewer sensitivity, such as residential areas, recreational areas, and areas with unique visual features. The Corridor Photos in Appendix E and KOPs 3, 7, 9, 11, and 12 show areas with a high degree of viewer sensitivity. Construction in these areas would disrupt viewsheds in areas with high viewer expectations, creating visual contrast through the introduction of construction equipment and construction related activities such as open cutting. Construction impacts would also be greater in areas that require extra workspace areas including any river, road, or railroad crossings. KOPs 2 and 6 depict views in areas that may require extra workspace where the Proposed Project would cross railroads or rivers.

Operation Impacts

The pipeline would be installed underground. Calnev would restore the land as outlined in its Reclamation Plan; however, the pipeline ROW would be visible permanently, particularly in areas of low rainfall where reseeding efforts may be ineffective and in areas where the ROW is permanently cleared of trees or larger vegetation. Additionally, permanently clear ROW may increase access in undeveloped areas to OHV enthusiasts and other unapproved uses, reducing the effectiveness of revegetation plans. Longer-term visual impacts would also result from the removal or alteration of vegetation that may currently provide a visual barrier or the introduction of landform changes that introduce contrasts in visual scale, special characteristics, form, line, color, or texture. The Corridor Photos in Appendix E and KOPs 1, 4, 7, 9, and 12 show views of undeveloped cismontane or desert terrain. Views from these locations would be diminished in areas where revegetation is incomplete or unsuccessful. KOPs 4 and 6 depict a reasonable expectation of how the permanent Calnev ROW will appear.

Permanent impacts on visual resources would be greatest for areas with strong visual contrasts and high levels of viewer sensitivity, including the views depicted in the Corridor Photos in Appendix E and KOPs 3, 7, 9, 11, and 12. Visual resources within these areas would be diminished by the line created by the permanent ROW scar and access roads.

Permanent visual impacts would be less apparent in developed areas. KOPs 2, 8, 10, and 13 have views of developed areas. Operation of the Proposed Project in these areas would not diminish visual resources as the pipeline would be installed underground and associated aboveground markers and facilities would blend with the surrounding development. The Proposed Project would not introduce new elements of contrast.

Visual impacts would be less apparent in areas where the pipeline follows existing ROWs, as previous development has already introduced contrast in form, color and line. The Corridor Photos in Appendix E and KOPs 1, 2, 3, 4, 5, 6, 8, 9, 12, and 13 show views currently bisected by the pipeline or other utility ROWs. The Proposed Project would not introduce new elements of contrast to previously undeveloped landscapes.

Aboveground facilities and markers may affect visual resources by introducing contrast in form, color, texture, and scale in undeveloped areas and disrupting the lines and spatial proportions of views. The introduction of pump stations and other aboveground facilities would affect visual resources by introducing contrast and altering the existing visual setting (strong visual contrasts would be seen). KOP 5 depicts a similar view of the substation site. KOP 5 is a sensitive location both because the level of contrast that would be introduced by the construction of the pump station would be high and because viewer sensitivity is high as viewers comprise travelers along SR 127, which leads to Death Valley National Park.

The facility colors would contrast with natural palettes, and the structures would disrupt lines and uniform textures in the landscape. The introduction of a new form would alter existing spatial relationships and would introduce contrast.

Summary

Construction of the Proposed pipeline would have a direct, adverse effect on visual resources at KOPs 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, and 13. KOPs 1, 4, 7, 9, and 12 are flat desert areas in which views would be disrupted, and the construction would dominate the viewshed. KOPs 2, 8, 10, and 3 are in already developed areas, but the presence of construction equipment and excavate materials would diminish the visual aspect of the area. KOPs 3, 6, 7, 9, 11, and 12 are areas with high viewer sensitivity, and where the viewshed would be disrupted during construction.

Following construction, direct, adverse visual impacts would continue to exist for several KOPs, due to the presence of new maintenance roads and the length of time required for revegetation efforts to be successful. Views at KOPs 1, 3, 4, 7, 9, 11, and 12 would be diminished for the long-term during operations. Disruptions to views at KOPs 2, 8, 10, and 13 would be less apparent because these areas are already developed. Operations at the new Silver Lake Pump Station would also create permanent adverse impacts to viewers near KOP 5.

MM VIS-1a, MM VIS-1b, and MM VIS-1c would reduce the impact of operation by requiring revegetation along the route, protecting revegetated areas from unauthorized access, and shielding the Silver Lake Pump Station with appropriate walls and landscaping.

- **MM VIS-1a:** Reclamation Plan. The Applicant shall develop a detailed Reclamation Plan for all land disturbed by construction of the Proposed Project including temporary access roads. The Applicant shall restore the original contour of the land, revegetate with seed and plant types approved by jurisdictional agencies, and employ special construction methods, as agreed upon by jurisdictional agencies or landowners, including visually screening the ROW.
- **MM VIS-1b:** Install barriers. The Applicant shall consult with jurisdictional agencies to appropriately install barriers where a cleared ROW may increase access such as with OHV use. Barriers may include locked gates, berms, rock piles, or any other method agreed upon by the jurisdictional agency. The installation of barriers would create additional impacts to visual resources; however, the impacts of barriers would be highly localized and would increase the success of revegetation efforts along the entirety of the route. The location of and necessity for barriers would be left to the discretion of the landowner or jurisdictional agency.
- **MM VIS-1c:** Minimize contrast at Silver Lake Pump Station. Due to the effect to visual resources, the Applicant shall take measures to minimize contrast introduced by the construction of the Silver Lake Pump Station, including painting facilities to blend with surrounding environment, surrounding the pump station with a wall, and screening facilities with vegetation as agreed upon by the landowner or jurisdictional agency.

Impact VIS-2: Adverse Effect on a Scenic Vista

The Proposed Project would cross near Glen Helen Regional Park near MP 15 (KOP 11). Construction impacts within viewshed of these locations would temporarily disrupt foreground and middle-ground views. The introduction of construction equipment would clutter the viewshed and introduce contrast, dominate the scenery, and disrupt the natural line of the view. Construction activities would diminish visual resources by introducing dust and light and exposing soils through trenching. While impacts to visual resources during the three week construction period would be temporary, the nature of the construction activities as seen from scenic vistas would be intense.

Operation of the Proposed Project would impact visual resources within the Mojave National Preserve and Glen Helen Regional Park because the Proposed Project would require both permanent access roads and visual markers or *hats*[1] along the route. These features would be visible within foreground views, but less visible from middle-ground and background distances.

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[1] Hats are mile markers placed on the pipeline that are visible from airplanes and helicopters. They allow aerial surveillance crews to quickly identify areas that may require maintenance.

Although the proposed pipeline would not be located within Glen Helen Park or the Mojave National Preserve, it would be visible from both.

These impacts would be significant under CEQA. The impacts at these locations would be reduced to less than significant through implementation of mitigation measures MM VIS-1a, MM VIS-1b, and MM VIS-1c.

Impact VIS-3: Damage to Scenic Resources within a State Scenic Highway

Interstate 15 is eligible for the California State Scenic Highway System from its intersection with SR 58 in Barstow to its intersection with SR 127 in Baker, with the exception of developed areas in and around Barstow, Yermo, and Baker, California. The Proposed Project would run parallel to this stretch of I-15. Additionally, the Proposed Project would both parallel and cross Historic Route 66 in California. KOPs 2 and 6 show views of Historic Route 66 crossings.

Construction activities within viewshed of the State Scenic Highway eligible portion of I-15 and Historic Route 66 would temporarily disrupt views from the roadway. The expectation of scenic views is high, usage of these routes is moderate to high, and the duration of view is low. Interstate 15 users tend to be travelers between the Los Angeles/Inland Empire regions and Las Vegas, Nevada, with peak usage on Friday afternoons. Motorists along Historic Route 66 may include historic tourists and recreational drivers who value intact views as part of the driving experience. Construction would disrupt views for both categories of motorists by exposing soils and cluttering the viewshed with construction related equipment, including signage and machinery. Impacts due to construction would be significant but temporary.

Following construction, the pipeline route would be permanently visible due to removal of vegetation for pipeline installation. No permanent views would be disturbed as a result of new access roads. The access roads for the Project already exist along the CalNev ROW and existing public roads would be used (Barstow to Baker). Furthermore, no new access roads are proposed that would be visible from I-15 or Route 66 except for the portion of the route from MP 138 to MP 144.

Revegetation in arid climates is considered difficult as its success is often dependent on inconsistent yearly rainfall. Additionally, markers and aboveground facilities would clutter views from Scenic and Historic Highways. However, as seen in KOPs 2 and 6, the Proposed Project would run parallel to the existing Calnev Pipeline System. The Silver Lake Pump Station would be constructed directly east of the SF 127 near its junction with I-15, an eligible State Scenic Highway; however, the pump station site is located in Baker, California, and is a previously developed area. Additionally, Calnev would visually screen the pump station with appropriate walls and landscaping, as outlined in MM VIS-1c. Installation of the Proposed Project would cumulatively contribute to impacts on visual resources, but long term impacts would be negligible given the implementation of MM VIS-1a and MM VIS-1b. These Mitigation Measures require a detailed Revegetation Plan to be developed in conjunction with jurisdictional agencies as well as the installation of fencing or other prohibitive structures to restrict unauthorized use of the ROW, particularly by OHV enthusiasts. With the implementation of MM VIS-1a, MM VIS-1b and MM VIS-1c, impacts on visual resources within view of a State Scenic or Historic Highway would be less than significant.

These impacts would be significant under CEQA. The impacts at these locations would be reduced to less than significant through implementation of mitigation measures MM VIS-1a, MM VIS-1b, and MM VIS-1c.

Impact VIS-4: Degradation of Existing Visual Character

Construction of the Proposed Project would degrade the existing visual character by cluttering viewsheds with construction equipment and signage and damaging the landscape through open cutting, grading, soil piling, and other construction related activities. Impacts would be greatest in undeveloped areas, such as those seen in KOPs 3, 4, 7, and 12. Construction activities in these areas would significantly but temporarily diminish the existing visual character.

Revegetation measures to restore the ROW to its preexisting condition are described in Chapter 2 and include consultation with landowners and appropriate agencies, erosion minimization techniques, prevention of trench settling, reestablishment of plant growth and restoration of natural contours and surface drainages. Due to the difficulty of revegetation in arid climates, demonstrated by the permanent visibility of the existing Calnev Pipeline System (KOPs 3, 4, and 6), the Applicant would prepare a detailed Restoration Plan (MM VIS-1a) and restrict access in areas where illegal OHV use may disturb revegetation efforts (MM VIS-1b). The Silver Lake Pump Station has been sited in a developed area outside of Baker, California with low levels of scenic integrity. However, the pump station would be situated East of Highway 127, a route used to access Death Valley National Park. Due to the high expectation of a view for travelers along SR 127 en route to Death Valley National Park, Calnev would shield or blend aboveground facilities with paint or landscaping (MM VIS-1c).
These impacts would be significant under CEQA. The impacts at these locations would be reduced to less than significant through implementation of mitigation measures MM VIS-1a, MM VIS-1b, and MM VIS-1c.

Impact VIS-5: New Source of Substantial Light or Glare Affecting Daytime or Nighttime Views

Construction of the Proposed Project would take place during daytime hours only and would not create a new source of light or glare.

Operation of the pipeline would not create a new source of light or glare. Lighting would only be necessary in the event of emergency repairs, as outlined in the Emergency Repairs section of the Proposed Project Description, and is therefore not considered a significant impact. The Silver Lake Pump Station would be equipped with station lighting. To minimize light pollution caused by the operation of the Silver Lake Pump Station, Calnev would employ MM VIS-1c and MM VIS-5, which require the Applicant to shield and downcast station lighting and shield the station with appropriate walls and landscaping.

- **MM VIS-5:** Control lighting. To minimize visual effects of aboveground facilities, the Applicant shall control pump station lighting by shielding and downcasting lights. The Applicant shall submit a lighting plan for review by the County of San Bernardino to ensure that all lighting is in compliance with the Night Sky Protection Ordinance.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project.

Impacts to aesthetics and visual resources associated with the seven route variations are described below:

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to visual resources. Both segments would diminish visual appearance of the area during construction, but this impact would be temporary. Following restoration of the area following construction, as would be required under MM VIS-1a, there would be no residual visual impacts other than pipeline markers and hats along the road. In the urban environment, these would be hardly noticeable. Neither route would involve potential impacts to a scenic vista or scenic highway. Overall, the potential impacts to aesthetics and visual resources associated with the Bloomington route would be the same as those identified for the Proposed Project.

Rialto Alternative

The Rialto Alternative route variation, and the segment of the Proposed Project that it would replace within the City of Rialto, do not have any differences with respect to visual resources. Both segments would diminish visual appearance of the area during construction, but this impact would be temporary. Following restoration of the area following construction, as would be required under MM VIS-1a, there would be no residual visual impacts other than pipeline markers and hats along the road. In the urban environment, these would be hardly noticeable. Neither route would involve potential impacts to a scenic vista or scenic highway. Overall, the potential impacts to aesthetics and visual resources associated with the Rialto route would be the same as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route, and the segment of the Proposed Project that it would replace within the unnamed riparian area, have only minor differences with respect to visual resources. Both segments would diminish visual appearance of the area during construction, but this impact would be temporary. Neither route would involve potential impacts to a scenic vista or scenic highway. Following restoration of the area following construction, as would be required under MM VIS-1a, there would still be a long-term, adverse visual impact associated with a short stretch of maintenance road between MP 24 and the Wagon Train Road HDD location. Once on the east side of Interstate 15, the Alternative route would continue under Wagon Train Road, and would therefore not have a long-term visual impact.

Because the Proposed route would involve an open cut and maintenance road through the unnamed riparian area for a distance of more than a mile, the Wagon Train Road Alternative route would be preferable to the Proposed route with respect to aesthetics and visual resources. Visual impacts associated with the Proposed route would be mitigated through implementation of MM WTR-5 and VIS-1a. However, the length of required maintenance road and presence of pipeline markers and hats on the west, undeveloped side of Interstate 15 would still have a greater impact than the Alternative route, which would be primarily on the eastern, developed side of the highway.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa route and the segment of the Proposed Project route that it would replace along Baldy Mesa Road, have only minor differences with respect to visual resources. Both segments would diminish visual appearance of the area during construction, but this impact would be temporary. Neither route would involve potential impacts to a scenic vista or scenic highway. Following restoration of the area following construction, as would be required under MM VIS-1a, there would be no residual visual impacts other than pipeline markers and hats along the road. On the Alternative route, these markers would be placed along residential streets that currently do not have such markers. Therefore, there would be a minor, but long-term, impact to residents along the streets of the Alternative route. Although markers would also be required along the Proposed route, that route is a busier thoroughfare which already has similar markers in place. Therefore, the Alternative route in this area would have a slightly higher level of adverse impacts to aesthetics and visual resources than the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation would reduce visual impacts associated with the construction of the Proposed route in the Zzyzx area. In this area, Interstate 15 is eligible for the California State Scenic Highway System Interstate, and construction of both the Alternative route and the Proposed route would be visible from the highway. Both segments would diminish visual appearance of the area from Interstate 15 during construction, but this impact would be temporary. However, long-term impacts to views from Interstate 15 associated with the presence of a maintenance road would be lower for the Alternative route than the Proposed route. This is because the Proposed route would traverse a currently undisturbed area, and would therefore result in a permanent maintenance road where one does not currently exist. If the Alternative route is implemented in this area, the new pipeline would parallel the current Calnev pipelines, and would use the same maintenance road that currently exists. Therefore, the potential impacts to aesthetics and visual resources associated with the the Zzyzx Alternative route would be lower than those associated with the Proposed Project with respect to visual resources

Baker Alternative

The Baker Alternative route would have differences as compared to the Proposed Project. Instead of paralleling the existing SCE and LADWP power lines west of Baker, the Alternative route would follow Interstate 15, a different transmission line route, and then public streets through the town of Baker. In general, the Proposed route would traverse undeveloped land which, although visible, would be located further away from Interstate 15. In contrast, the Alternative route, also visible, would be located much closer to Interstate 15. It would be located primarily within the developed portion of Baker, and therefore would be less noticeable. Therefore, construction impacts associated with the Alternative route would be lower than those of the Proposed route.

Following construction and restoration (as would be required by implementation of MM VIS-1a), the visual impacts associated with the Alternative route would be lower than those associated with the Proposed Project. This is due to the fact that the Alternative route, being located in a developed area, would not be very noticeable. The Proposed route, although further from the highway, would have a noticeable long-term impact due the presence of a maintenance road. With the implementation of MM VIS-1a, MM VIS-1b and MM VIS-1c, impacts on visual resources within view of a State Scenic or Historic Highway would be less than significant.

Silver Lake Pump Station Alternative

The Alternative location for the proposed Silver Lake Pump Station would be approximately 2000 feet to the east of the Proposed location. The Alternative location would potentially be more visible than the Proposed location because it would be situated in an undeveloped area that is visible from Interstate 15. However, the Alternative location would also be located further from local residents and visitors to Baker, including persons driving SF 127 toward Death Valley. The Proposed location would be noticeable to local residents and visitors, because it would be located directly adjacent to SF 127.

Calnev would visually screen the pump station with appropriate walls and landscaping, as outlined in MM VIS-1c. Installation of the Proposed Project would cumulatively contribute to impacts on visual resources, but long term impacts would be negligible given the implementation of MM VIS-1a and MM VIS-1b. These Mitigation Measures require a detailed Revegetation Plan to be developed in conjunction with jurisdictional agencies as well as the installation of fencing or other structures to restrict unauthorized use of the ROW, particularly by OHV enthusiasts. With implementation of MM VIS-1a, MM VIS-1b and MM VIS-1c, impacts on visual resources associated with the Alternative location would be less than significant.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation, and the segment of the Proposed Project that it would replace that passes through Bracken Junction, are similar. Both segments would temporarily diminish visual appearance of the area during construction. Following restoration of the area, as would be required under MM VIS-1a, there would be no residual visual impacts other than pipeline markers and hats along the road. In the urban environment, these would be hardly noticeable. Neither route would involve potential impacts to a scenic vista or scenic highway. Overall, the potential impacts to aesthetics and visual resources associated with the Sunset Lateral alternative would be the same as those identified for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The new Sunset Junction would be very visible to residents and traffic along Valley View and Sunset, both very busy urban roads. However, it would be located in an urban environment, and would therefore not have potentially adverse visual impacts.

Summary

Overall, Alternative 2 would have a reduced level of impacts as compared to the Proposed Project. In the Zzyzx area, Alternative 2 would have a reduced potential for visual impacts by routing the pipeline further from the highway, and by eliminating the need for an additional maintenance road. Similarly, the location of the Silver Lake Pump Station in Alternative 2 would reduce the visibility of the facility to local residents and visitors using SF 127 to access Death Valley. In the Wagon Train area, the placement of the route on the side of Interstate 15 that has already been developed would reduce the length of new maintenance road required on the undeveloped side, and would therefore reduce potential visual impacts in this area. Therefore, the Alternative 2 route at Zzyzx, the Silver Lake Pump Station, and Wagon Train would be preferable to the Proposed Project with respect to visual resources.

Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. These mitigation measures would reduce the level of impacts under CEQA to less than significant.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Bake Alternatives, the Proposed Project route would be followed. With respect to aesthetics and visual resources, Alternative 3 would incorporate the reduced impacts associated with Zzyzx Alternative route, the Silver Lake Pump Station Alternative location, and the Wagon Train Road HDD. All other visual resource impacts under both NEPA and CEQA would remain the same as Alternatives 1 and 2.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure would be installed. No ground-disturbing activities would take place and potential impacts to visual resources resulting from current activities on the existing pipelines would remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems would be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines would remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, CA to Las Vegas, NV. The visual character of the existing pipelines and above-ground facilities would remain the same as that associated with the current operations.

For the purposes of CEQA, no significant impacts to visual resources would result if the No Project Alternative is adopted.

3.12.4 Summary of Mitigation

A complete list of mitigation measures for the proposed Project is presented by impact in Table 3.12-3. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.12-3 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Impact VIS-1: Impacts on KOPs	• **MM VIS-1a:** Reclamation Plan. • **MM VIS-1b** Install barriers. • **MM VIS-1c:** Minimize contrast at silver Lake Pump Station.	Entire route and Silver Lake Pump Station	BLM, USFS, San Bernardino County	During and post-construction
Impact VIS-2: Damage to Scenic Resources within a State Scenic Highway	• **MM VIS-1a:** Reclamation Plan. • **MM VIS-1b** Install barriers. • **MM VIS-1c:** Minimize contrast at silver Lake Pump Station.	Entire route and Silver Lake Pump Station	BLM, USFS, San Bernardino County	During and post-construction
Impact VIS-3: Damage to Scenic Resources within a State Scenic Highway	• **MM VIS-1a:** Reclamation Plan. • **MM VIS-1b** Install barriers. • **MM VIS-1c:** Minimize contrast at silver Lake Pump Station.	Entire route and Silver Lake Pump Station	BLM, USFS, San Bernardino County	During and post-construction
Impact VIS-4: Degradation of Existing Visual Character	• **MM VIS-1a:** Reclamation Plan. • **MM VIS-1b** Install barriers. • **MM VIS-1c:** Minimize contrast at silver Lake Pump Station.	Entire route and Silver Lake Pump Station	BLM, USFS, San Bernardino County	During and post-construction
Impact VIS-5: New Source of Substantial Light or Glare Affecting Daytime or Nighttime Views	• **MM VIS-5:** Control lighting.	Silver Lake Pump Station	BLM, USFS, San Bernardino County	During and post-construction

References

Bureau of Land Management (BLM). 1980. *California Desert Conservation Area Plan, as amended.*

Bureau of Land Management (BLM). 1986. *Visual Resource Management Manual 8400.*

Bureau of Land Management (BLM). 1998. *Las Vegas Resource Management Plan.*

Bureau of Land Management (BLM). 2001. The Federal Land Policy and Management Act of 1976 as amended, Commemorating 25 Years. U.S. Department of the Interior. October.

Bureau of Land Management (BLM). 2008. Memorandum: *Clarification of Treatment of Visual Resources Management Classes in Land Use Planning and Project Planning.*

Bureau of Land Management (BLM). 2010. Visual Resource Inventory, BLM Needles Field Office. September, 2010.

Clark County. 2000. Conservation Element. *Clark County Comprehensive Plan*. Volume 1, General Subject Matters.

County of San Bernardino. 2007. *County of San Bernardino 2007 General Plan.*

National Park Service (NPS). 2002. *Mojave National Preserve General Plan.*

National Park Service (NPS). 2008. National Trails System. http://www.nps.gov/ncrc/programs/nts/nts_faq.html. Accessed January 26, 2009.

Nevada Department of Transportation (NDOT). 2002. *Master Plan.*

Nevada Department of Transportation (NDOT). 2005. *I-15 Landscape and Aesthetic Corridor Plan.*

United States Forest Service (USFS). 2005a. *Final Environmental Impact Statement: Land Management Plans for Angeles National Forest, Cleveland National Forest, Los Padres National Forest, and San Bernardino National Forest.*

United States Forest Service (USFS). 2005b. *Land Management Plan Part 3: Design Guidelines for the Southern California National Forests.*

Personal Communications

Seehafer, Edy. 2009. Bureau of Land Management, Barstow Field Office. Personal communication with Erec Devost, Ecology and Environment, Inc.

Figure 3.12-1

Typical Industrial Development View

Colton, California

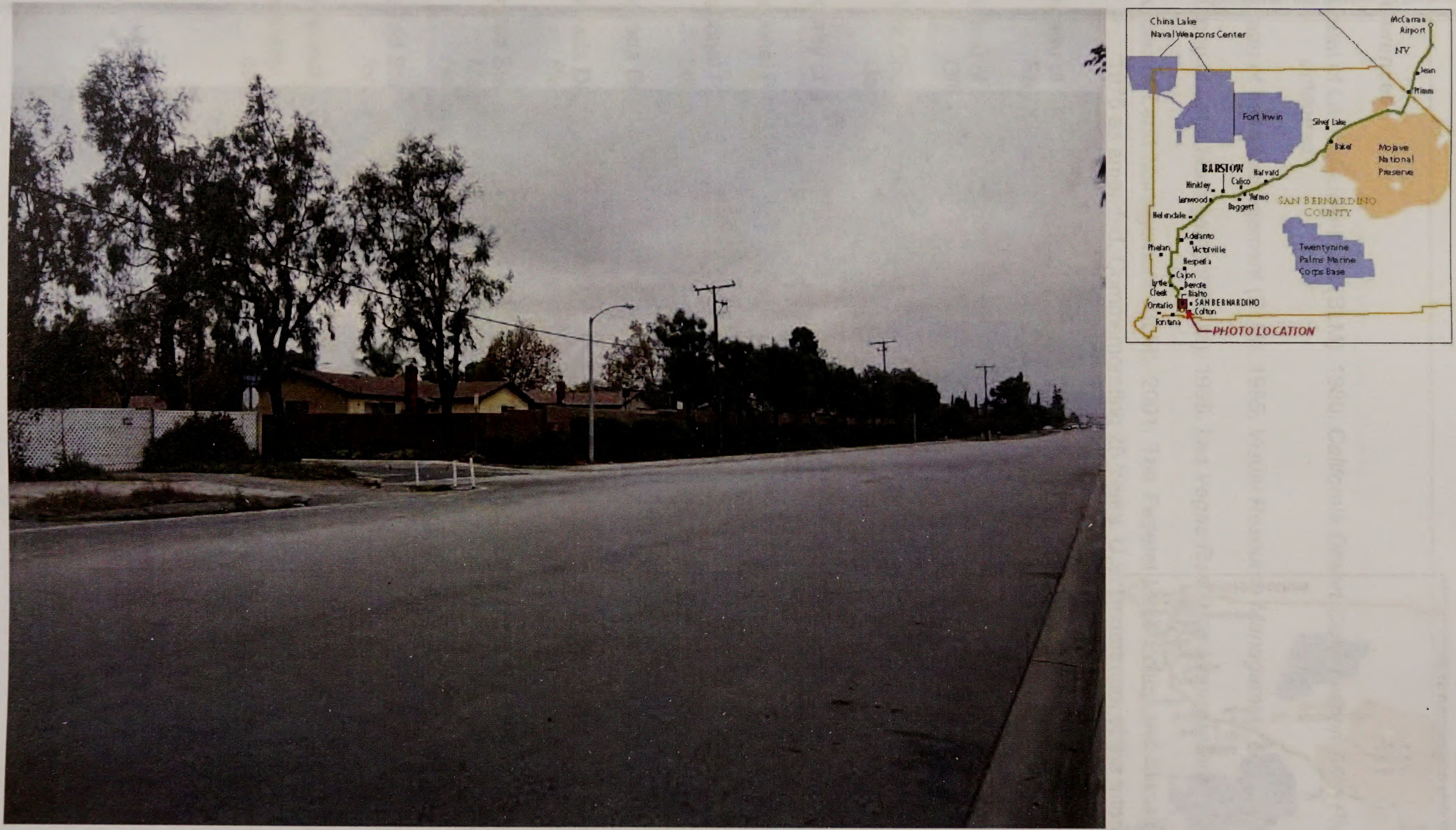


Figure 3.12-2

Typical Residential Development View

Rialto, California

002631.KM04.03.g (CORP CD Archives - Vol 2) 04/20/2009

Figure 3.12-3

Typical Rural Residential View

Adelanto, California

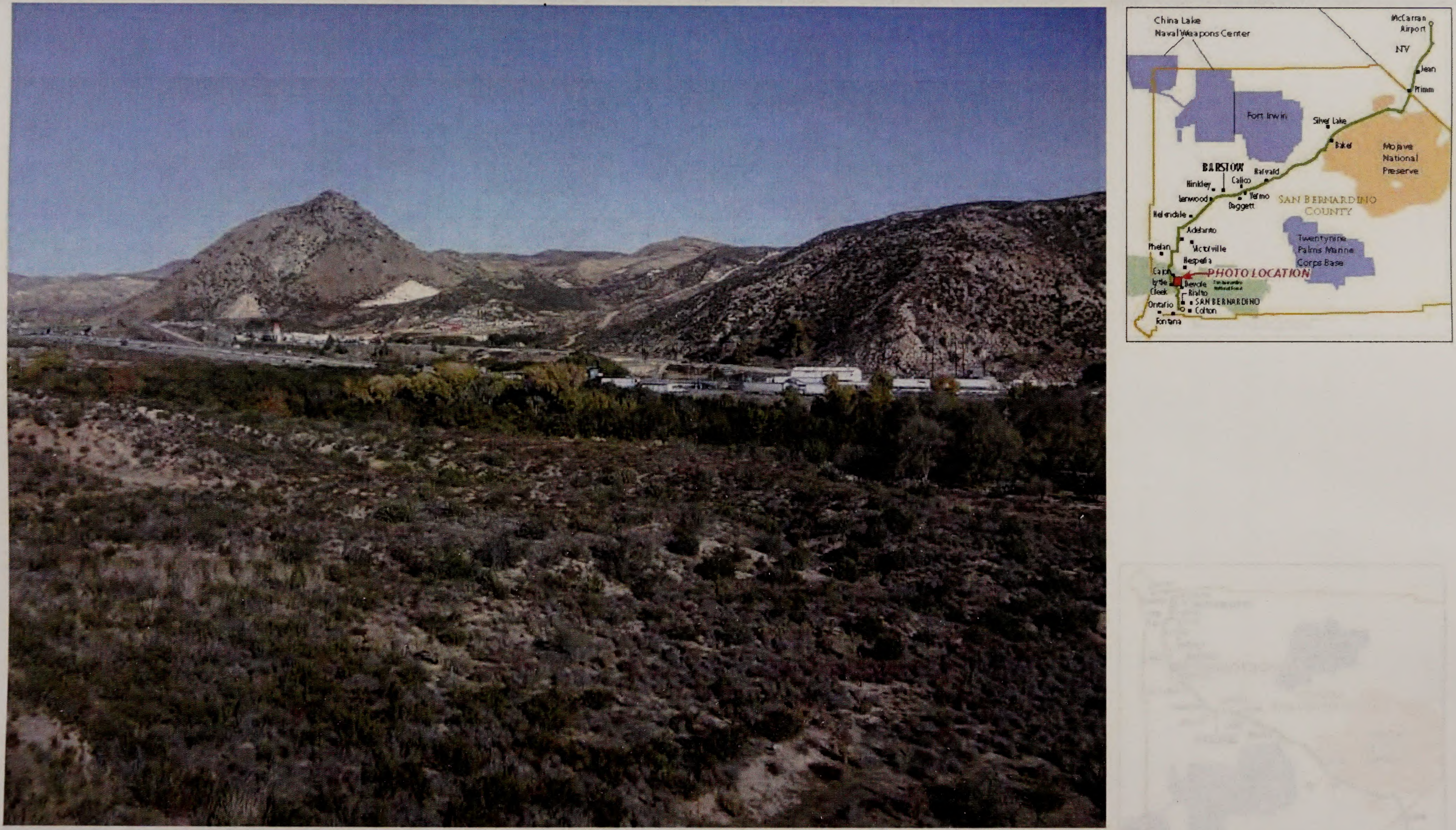


Figure 3.12-4

Typical Mountainous Terrain View

San Bernardino National Forest, California

Figure 3.12-5

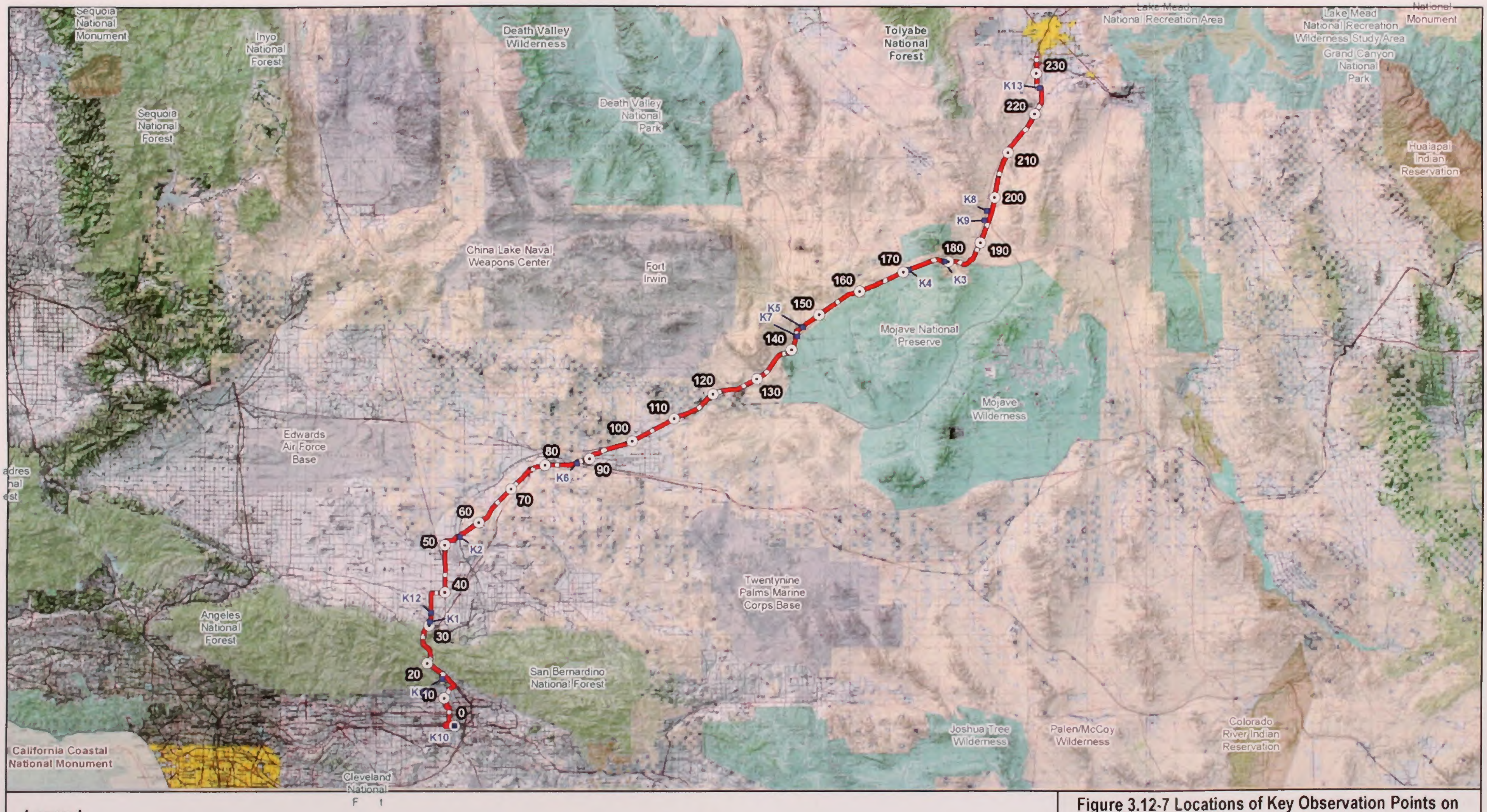
Typical Scrubland View (view is northerly)

San Bernardino County, California

Figure 3.12-6

Typical Dry Lake View (view is southerly)

Ivanpah, Mojave National Preserve, California



Legend

- ▪ KOP's
- ⊙ Milepost
- ━ Proposed Route
- 🟩 Forest Service
- 🟪 Department of Defense
- ▨ Bureau of Land Management
- 🟦 Fish and Wildlife Service
- 🟦 National Park Service
- 🟫 Bureau of Indian Affairs
- 🟧 Bureau of Reclamation

Figure 3.12-7 Locations of Key Observation Points on Federal and County Lands

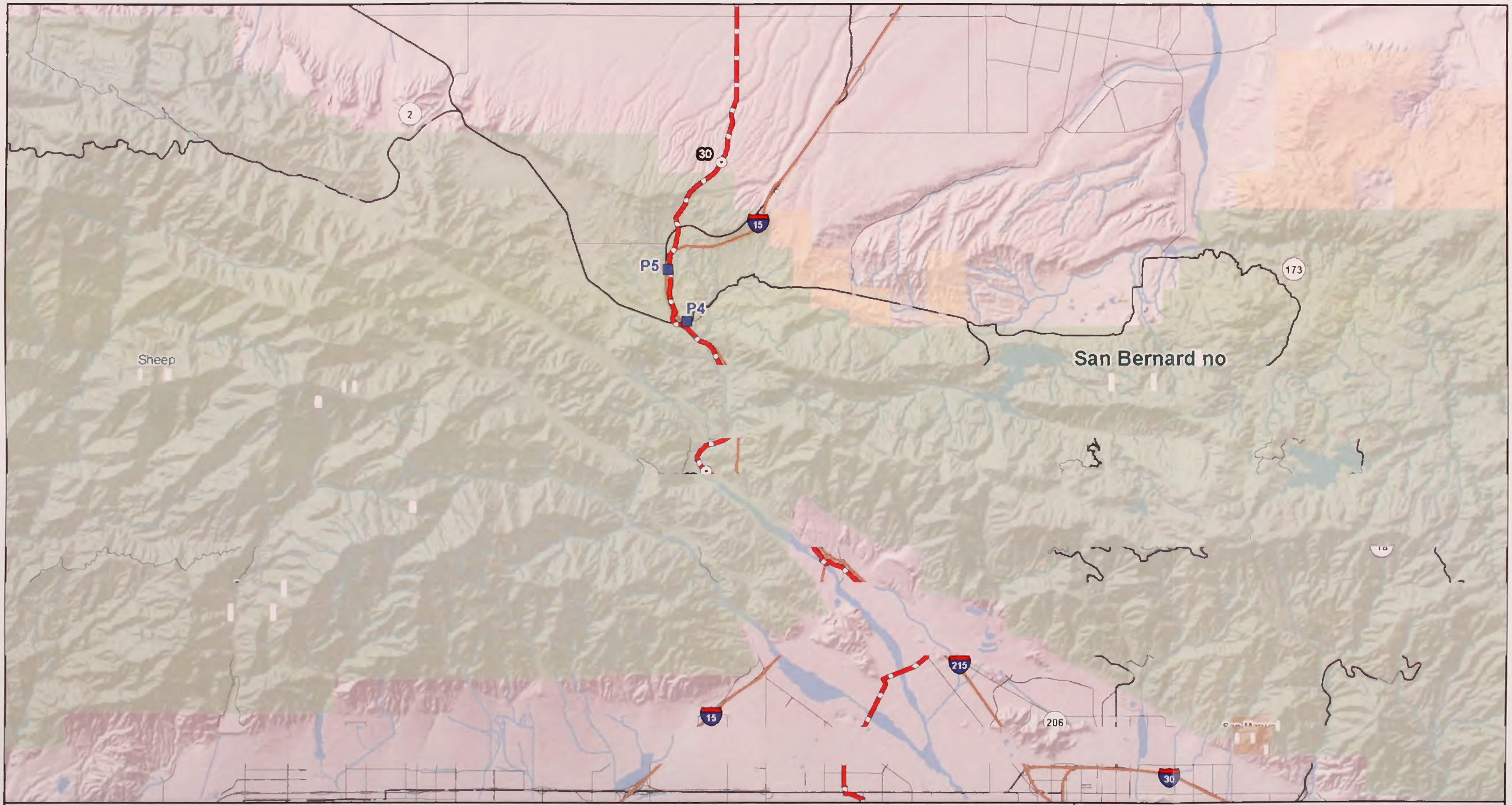
N

0 10 20 Miles

Locations of project components are approximate
Mile Post 54 has been removed due to route change

SOURCES
ESRI 2008

E:\GIS\CalNev_Pipeline\MXDs\KOP.mxd
June 28, 2011



Legend

■	KOP's
⊙	Milepost
🟥	Proposed Route
—	Interstate
—	Highway
—	Roads
🟩	Forest Service
🟧	Bureau of Land Management
🟫	Bureau of Indian Affairs

Figure 3.12-8 Locations of Photos for Corridor Analysis in San Bernardino National Forest

N

0 1.25 2.5 Miles

Locations of project components are approximate
Mile Post 54 has been removed due to route change

SOURCES:
ESRI 2008

E:\GIS\CalNev_Pipeline\MXDs\KOP_SBNF.mxd
Date: June 28, 2011

3.13 Noise

This section describes the existing ambient noise conditions and applicable regulations for the area where the Proposed Project and its alternatives are located. This section also discloses likely noise and vibration impacts from construction and operation of the Proposed Project and proposes measures to ensure that the resulting effects would be mitigated to comply with applicable regulations.

3.13.1 Affected Environment

This section discusses existing noise conditions within 1 mile of the Proposed Project area. A buffer of 1 mile from the right-of-way (ROW) has been chosen for describing the existing environment because it would include direct on-site impacts to existing noise sensitive land uses, as well as reasonably foreseeable off-site impacts.

The pipeline ROW primarily traverses undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States Forest Service (USFS) and the Department of Defense (DoD). Lands under the jurisdiction of the State of California, San Bernardino County, the State of Nevada, and Clark County, are also crossed by the pipeline ROW. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

Definition of the Resource

Noise is defined as any sound that is unwanted and may cause adverse effects on human beings and fauna species.

The ambient sound level of a region is defined by the total noise generated within the specific environment and is usually composed of sound emanating from natural sources and from human activities. Ambient sound levels vary with time of day, wind speed and direction, and level of human activity. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Excessive noise exposure has been shown to cause feelings of annoyance and disrupt working, learning, and recreational activities for humans. In some cases, noise can disrupt normal behavior of fauna species. When noise is prevalent in a community, the effects are widespread and include psychological, sociological, physiological, and economical effects, either temporary or permanent (City of Colton 1987).

Basic Definitions

The amplitude of sound is usually described by the decibel (dB), which is a logarithmic measure of the sound pressure level. Pressure variations in the air cause the eardrum to vibrate, and this is interpreted as sound by the brain. The stronger the pressure variation, the louder the sound is heard. The level of noise is measured objectively using a Sound Level Meter normally set on the A-weighted scale. The A-weighted scale was developed to mimic the way the human ear responds to pressure variations in the air. Since humans are less sensitive to low frequencies (less than 250 hertz [Hz]) than mid-frequencies (500 to 1,000 Hz), and they are most sensitive to frequencies in the 1,000 to 5,000 Hz range, sound measurements are adjusted, or weighted, as a function of frequency to account for human perception and sensitivities.

Because they are based in a logarithmic scale, dBs are not additive. If two similar noise sources produce the same amount of noise (e.g., 100 dB each), the total noise level is 103 dB, not 200 dB. In terms of human response, an increase in noise level of 10 dB is generally perceived as being twice as loud. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud).

Table 3.13-1 shows the relative A-weighted noise levels of common sounds measured in the environment and industry for various sound levels.

Table 3.13-1 Typical Sound Levels Measured in the Environment and Industry

Noise source at a given distance	A-Weighted Sound Level (dBA)	Noise environments	Qualitative Description
Carrier deck jet operation	140	Carrier flight deck	Painfully loud
Civil defense siren (100 feet)	130		
Jet takeoff (200 feet)	120		Threshold of pain
Loud rock music	110	Rock music concert	
Pile driver (50 feet)	100		Very loud / very annoying
Ambulance siren (100 feet)	90	Boiler room	
Pneumatic drill (50 feet)	80	Noisy restaurant	Annoying
Freeway traffic (50 feet)	70		Intrusive / Moderately loud
Air conditioning unit (20 feet)	60	Data processing center	
Light auto traffic (100 feet); rainfall	50	Private business office	
Bird calls	40	Average living room library	Quiet
Soft whisper (5 feet); rustling leaves	30	Quiet bedroom	
Broadcasting/Recording studio	20		Very Quiet
Normal breathing	10		Threshold of hearing

Source: California Energy Commission 2008

The decrease in sound level due to distance from any single sound source normally follows the inverse square law, i.e., the sound pressure level changes in inverse proportion to the square of the distance from the sound source. In a large open area with no obstructive or reflective surfaces, it is a general rule that at distances greater than 50 feet, the sound pressure level from a point source of sound drops off at a rate of 6 dB, with each doubling of distance away from the source. For example, a noise source with a sound pressure level of 95 dBA at 50 feet would have a noise level of 89 dBA at 100 feet due to divergence of sound energy over distance. In addition, sound energy is absorbed in the air as a function of temperature, humidity, and the frequency of the sound. This attenuation can be up to 2 dB over 1,000 feet. The drop-off rate also varies with both terrain conditions and the presence of obstructions in the sound propagation path.

The A-weighted sound level of noise producing activities within and around a community varies considerably with time. Measures of this varying noise level are accomplished by obtaining statistical samples. There are several measures of noise exposure that not only consider the variation of noise level but also include temporal characteristics. Noise descriptors have been developed for describing the time-varying quality of environmental noise and its effects on people. Some of the most commonly used descriptors are described below.

- Equivalent sound level (24 hour average) ($L_{eq(24)}$) is the level of steady sound with the same total (equivalent) energy as the time-varying sound of concern, averaged over a 24-hour period.
- Day-night average sound level (L_{dn}) or DNL is the day-night average sound level, which equals $L_{eq(24)}$ with 10 dBA added to nighttime sound levels between the hours of 10 p.m. and 7 a.m. to account for people's greater sensitivity to sound during nighttime hours.
- Community Noise Exposure Level (CNEL), which is similar to the L_{dn} scale except that it includes a 5 dBA penalty for events occurring during the evening hours (from 7 p.m. to 10 p.m). Either L_{dn} or CNEL are often used to identify community noise impacts.

The background noise level is the term used to describe the noise level measured in the absence of the noise under investigation. It is described as the A-weighted L_{eq} noise level measured on a sound level meter over a given time period. Vibration is an annoyance related to noise. The ground-borne energy of vibration has the potential to cause structural damage and annoyance (Baker 2008). Vibration can be described by both its amplitude and frequency. Particle velocity (measured in inches or millimeters per second), and/or acceleration (measured in gravities) are typically used to describe vibration (Table 3.13-2).

Table 3.13-2 Human Reaction to Typical Vibration Levels

Vibration Level Peak Particle Velocity (inches/second)	Human reaction
0.0059 – 0.0188	Threshold of perception, possibility of intrusion
0.0787	Vibrations readily perceptible
0.0984	Continuous vibration begins to annoy people
0.1968	Vibrations annoying to people in buildings
0.3937 – 0.5905	Vibrations considered unpleasant when continuously subjected and unacceptable by some walking and bridges

Source: City of Fontana 2003

Some of the most common sources of vibration come from trains and transit vehicles, construction equipment, airplanes, and large vehicles. In some cases it may be produced as a result of construction practices, such as blasting and pile driving (Baker 2008). Vibration can be felt outdoors, but the perceived intensity of its effects is greater indoors, due to the shaking of structure (City of Fontana 2003). Several land uses are sensitive to vibration, for example, hospitals, libraries, residential areas, school and offices.

Existing Noise Sources and Noise Sensitive Areas Near the Proposed Project Area

At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week. The variation is caused by different reasons, for example, changing weather conditions, the effects of seasonal vegetative cover, and human activities.

Some typical principal noise generators within the project area are associated with transportation (e.g., airports, freeways, arterial roadways, seaports, and railroads). Additional noise generators include stationary sources, such as industrial manufacturing plants and construction sites (Southern California Association of Governments [SCAG] 2003).

Urban areas crossed by the Proposed Project are composed of several major noise sources, all of which have a significant local or city-wide influence, including: (1) primary arterials and major local streets; (2) passenger and freight on-line railroad operations; (3) highways and freeways; and (4) airport operations (City of Colton 1987). In addition, the segments of ROW located near military facilities (Edwards Air Force Base, Southern California Logistics Airport/George Air Force Base, Nellis Air Force Base) are in close proximity to major noise sources related to jet aircraft operations. The major noise sources located within 1 mile of the ROW are listed in Table 3.13-3.

Table 3.13-3 Major Noise Sources Within 1 Mile of the Proposed Project

Proposed Project ROW/Facility	Milepost (MP)	City or town	Major noise sources (1-mile radius)
California (MP 0 to 195)			
Pipeline 16”	0 to 2	Colton	Union Pacific Railroad
	2.5	Bloomington	Southern Pacific Railroad
	4.25	Bloomington	Orchard Street and Interstate 10
	9	Rialto	S. Cactus Avenue and Bloomington Avenue
	15.5	Devore	Linden Avenue and Interstate 210
	16	Devore	Interstate 15 at Glen Helen Road
	25	Cajon	Union Pacific Railroad State Route 138, Interstate 15
	27	Cajon	State Route 138 at Cajon Junction
	28	Cajon	Interstate 15 at Cajon Junction
	36	Phelan	Union Pacific Railroad
	42.5	Victorville	Interstate 15
	45	Adelanto	Interstate 15
	54	Victorville	Aqueduct Road at Baldy Mesa Road Southern California Logistics Airport
	55	La Delta	State Route 395 at State Route 18
	76	Barstow	State Route 395 at Adelanto Road
	86	Dagget	Union Pacific Railroad
	87	Dagget	Atchison Topeka and Santa Fe Railroad
	93	Yermo	Union Pacific Railroad
	118	Dunn	Interstate 15
Existing Facility Upgrades			
Colton Terminal and Pump Station	0.0	Colton	Union Pacific Railroad Interstate 10
SCE Slover Substation	0.0	Colton	
SCE Slover Transmission	0.0	Colton	
Cajon Pump Station	26.6	Cajon	Interstate 15, State Route 395 State Route 138 at Cajon Junction Union Pacific Railroad and BNSF Railway
Adelanto Junction	46.8	Adelanto	State Route 395, Air Expressway Blvd
Lenwood Junction	75.7	Barstow	Interstate 15
Yermo Junction	88.8	Yermo	Interstate 15
Barstow Terminal	92.3	Barstow	Interstate 15
Baker Pump Station	148.0	Baker	Interstate 15
Valley Wells Pump Station	174.5	Valley Wells	Interstate 15
New Facilities			
Silver Lake Pump Station	146.3	Baker	Interstate 15
SCE Nickel Substation	146.3	Baker	Interstate 15

Table 3.13-3 Major Noise Sources Within 1 Mile of the Proposed Project

Proposed Project ROW/Facility	Milepost (MP)	City or town	Major noise sources (1-mile radius)
SCE Nickel Transmission	146.3	Baker	Interstate 15
Nevada (MP 195 to 234)			
Pipeline 16"	196 to 198	Primm	Interstate 15
	206 to 210	Jean	Interstate 15
	223	Las Vegas	State Route 146 at State Route 604 Interstate 15
	226	Las Vegas	Interstate 15 at West Cactus Avenue Interstate 15
	229	Las Vegas	State Route 160 at Blue Diamond Road Interstate 15
	231	Las Vegas	Interstate 215 at S. Valley View Blvd.
Nevada (MP 195 to 234)			
Existing Facility Upgrades			
Bracken Junction	233.5	Las Vegas	McCarran Airport
McCarran Terminal	234	Las Vegas	McCarran Airport
New Facilities			
Sunset Junction	231.9	Las Vegas	Interstate 215 at S. Valley View Blvd. Interstate 15

Source: Google Earth 2009

Noise in rural areas varies considerably over the course of a day or throughout the year. This noise level variation makes it difficult to accurately determine background noise levels. Background noise levels in wilderness areas or very rural areas typically range between 35 and 45 dBA (L_{dn}) (Department of State 2007).

The majority of the pipeline and facilities would be located in rural areas where existing traffic volumes are low. However, the pipeline would cross or be adjacent to several transportation and utility ROWs that have higher traffic volumes and, in consequence, potentially higher noise levels.

Generally, transportation-related noise sources characterize the ambient noise environment of the Proposed Project area (SCAG 2003). County and local roads to be crossed are typically in rural areas, including federal and state lands, and are largely unpaved. Paved local and county roads are concentrated in the more developed areas in San Bernardino County, California and Clark County, Nevada.

Mobile-Source Noise

Traffic Noise

The magnitude of noise generated by a given roadway depends upon the overall traffic volume, fleet mix (particularly the percentage of trucks), and average vehicle speed. According to a noise study conducted in 2003 by SCAG on road segments with the highest traffic noise levels in the region (based on data on daily traffic volumes), maximum noise levels (L_{dn}) in roadways that would be crossed by the Proposed Project in Southern California, such as the Interstate 10, ranged from 61.5 to 78.1 dBA (SCAG 2003). In addition, on arterial roadways with typical daily traffic volumes of 10,000 to 40,000 vehicle trips, noise levels typically range from L_{dn} 65 to 70 dB at 50 feet from the roadway centerlines.

Traffic noise from an elevated freeway is typically two to 10 dBA less than the noise from an equivalent at-grade facility within 300 feet of the freeway, but beyond 300 feet, the noise radiated by an elevated and at-grade freeway (assuming equal traffic volumes, fleet mix, and vehicle speed) is the same (SCAG 2003).

Railroad Operations

Railroad operations generate high, relatively brief, intermittent noise events. These noise events are an environmental concern for sensitive uses located along rail lines and in the vicinities of switching yards. Locomotive engines and the interaction of steel wheels and rails primarily generate rail noise. The latter source creates three types of noise: (1) rolling noise due to continuous rolling contact; (2) impact noise when a wheel encounters a rail joint, turnout, or crossover; and (3) squeal generated by friction on tight curves. For very high speed rail vehicles, air turbulence can be a significant source of noise as well. In addition, use of air horns and crossing bell gates contribute to noise levels in the vicinity of grade crossings (SCAG 2003). Table 3.13-4 provides reference noise levels in terms of sound exposure levels for different types of rail operations.

Table 3.13-4 Reference Noise Levels for Various Rail Operations

Source / Type		Reference Conditions	Reference Noise Level (sound exposure level)
Commuter Rail, At-Grade	Locomotives	Diesel-Electric, 3,000 horsepower, throttle 5	92
		Electric	90
	Cars	Ballast, welded rail	82
Rail Transit		At-grade, ballast, welded rail	82
Automated Guideway Transit	Steel wheel	Aerial, concrete, welded rail	80
	Rubber tire	Aerial, concrete guideway	78
Monorail		Aerial straddle beam	82
Maglev		Aerial, open guideway	72

Source: SCAG 2003

Noise Sensitive Land Uses

Some land uses are considered more sensitive to ambient noise levels than others due to the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, natural areas, parks, and outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses. Consequently, the noise standards for sensitive land uses are more stringent than those for less sensitive uses, such as commercial and industrial (SCAG 2003).

Certain human activities and sensitive land uses (e.g., residences, schools, and hospitals) generally require lower noise levels. A noise level of L_{dn} 55 to 60 dB on the exterior is the upper limit for speech communication to occur inside a typical home. In addition, social surveys and case studies have shown that complaints and community annoyance in residential areas begin to occur at L_{dn} 55 dB (SCAG 2003).

Several noise sensitive land uses or areas (NSAs) are located near the project ROW. During public scoping, concerns were raised about the proximity of the Proposed Project to large regional and community facilities that attract high concentrations of individuals, such as schools, churches, and hospitals. Approximately, 21 schools, 51 churches, and two hospitals are located within 1 mile of the center of the ROW (Table 3.13-5). In addition, 15 recreational and special interest areas would be crossed by the Proposed Project. Detailed locations and additional discussion of specific land uses, as well as recreational and special interest lands close to or crossed by the ROW, are presented in Sections 3.10 and 3.12, respectively.

Table 3.13-5 Schools, Churches, and Hospitals Within 1 Mile of the ROW

State	City or town	Number of NSAs within 1 mile of the ROW		
		Schools	Churches	Hospitals
California	Colton	1	-	-
	Bloomington	6	12	-
	Rialto	14	29	1
	Fontana	-	1	-
	Adelanto	-	6	1
	Victorville	-	1	-
	Barstow	-	2	-
	TOTAL NSAs	21	51	2

Note: An additional buffer of 0.1 miles was considered for this noise sensitive area (NSA) identification.

3.13.2 Applicable Regulations, Plans, and Policies

Ambient noise standards are maintained at the federal, state, and local levels. In 1974, the Environmental Protection Agency (EPA) published "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" (EPA 550/9-74-004). This document provides information for state and local agencies to use in developing their ambient noise standards to assist state and local government entities in development of state and local ordinances, regulations, and standards for noise (Department of State 2007).

Federal Regulations

Noise and land use guidelines have been produced by a number of federal agencies including the Federal Highway Administration, the 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 EPA "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" identified outdoor and indoor noise levels to protect public health and assets (Table 3.13-6). An $L_{eq\,(24)}$ of 70 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 (Department of State 2007).

Table 3.13-6 EPA Noise Control Guidelines

Use	Measure	Indoor activity interference (dBA)	Hearing loss consideration (dBA) (b)	To protect against both effects (c) (dBA)	Outdoor activity interference (dBA)	Hearing Loss consideration (dBA) (b)	To protect against both effects (c) (dBA)
Residential with Outside Space	L_{dn} $L_{eq(24)}$	45	70	45	55	70	55
Residential with No Outside Space	L_{dn} $L_{eq(24)}$	45	70	45			

Table 3.13-6 EPA Noise Control Guidelines

Use	Measure	Indoor activity interference (dBA)	Hearing loss consideration (dBA) (b)	To protect against both effects (c) (dBA)	Outdoor activity interference (dBA)	Hearing Loss consideration (dBA) (b)	To protect against both effects (c) (dBA)
Commercial	$L_{eq(24)}$	(a)	70	70(d)	(a)	70	70(d)
Inside Transportation	$L_{eq(24)}$	(a)	70	(a)			
Industrial	$L_{eq(24)}$ (e)	(a)	70	70(d)	(a)	70	70(d)
Hospitals	L_{dn} $L_{eq(24)}$	45	70	45	55	70	55
Educational	L_{dn} $L_{eq(24)}$	45	70	45	55	70	55
Recreational Area	$L_{eq(24)}$	(a)	70	70(d)	(a)	70	70(d)
Farm Land and General Unpopulated Land	$L_{eq(24)}$				(a)	70	70(d)

Source: City of Rialto 1992

Notes:

(a) Since different types of activities appear to be associated with different levels, identification of a maximum level for activity interference may be difficult except in those circumstances where speech communication is a critical activity.

(b) Level of hearing loss is defined as the exposure period which results in hearing loss at he identified level is a period of 40 years.

(c) Based on lowest level

(d) Based on hearing loss

An L_{eq} of 75 dBA during 8 hours may be identified in these situations so long as the exposure over the remaining 16 hours per day is low enough to result in a negligible contribution to the 24-hour average.

State Regulations

The California Department of Health Services has established the Office of Noise Control, which has prepared studies associated with noise levels and their effects on various land uses. Based upon these studies, the State has established interior and exterior noise standards by land use category and standards for the compatibility of various land uses and noise levels (Table 3.13-7).

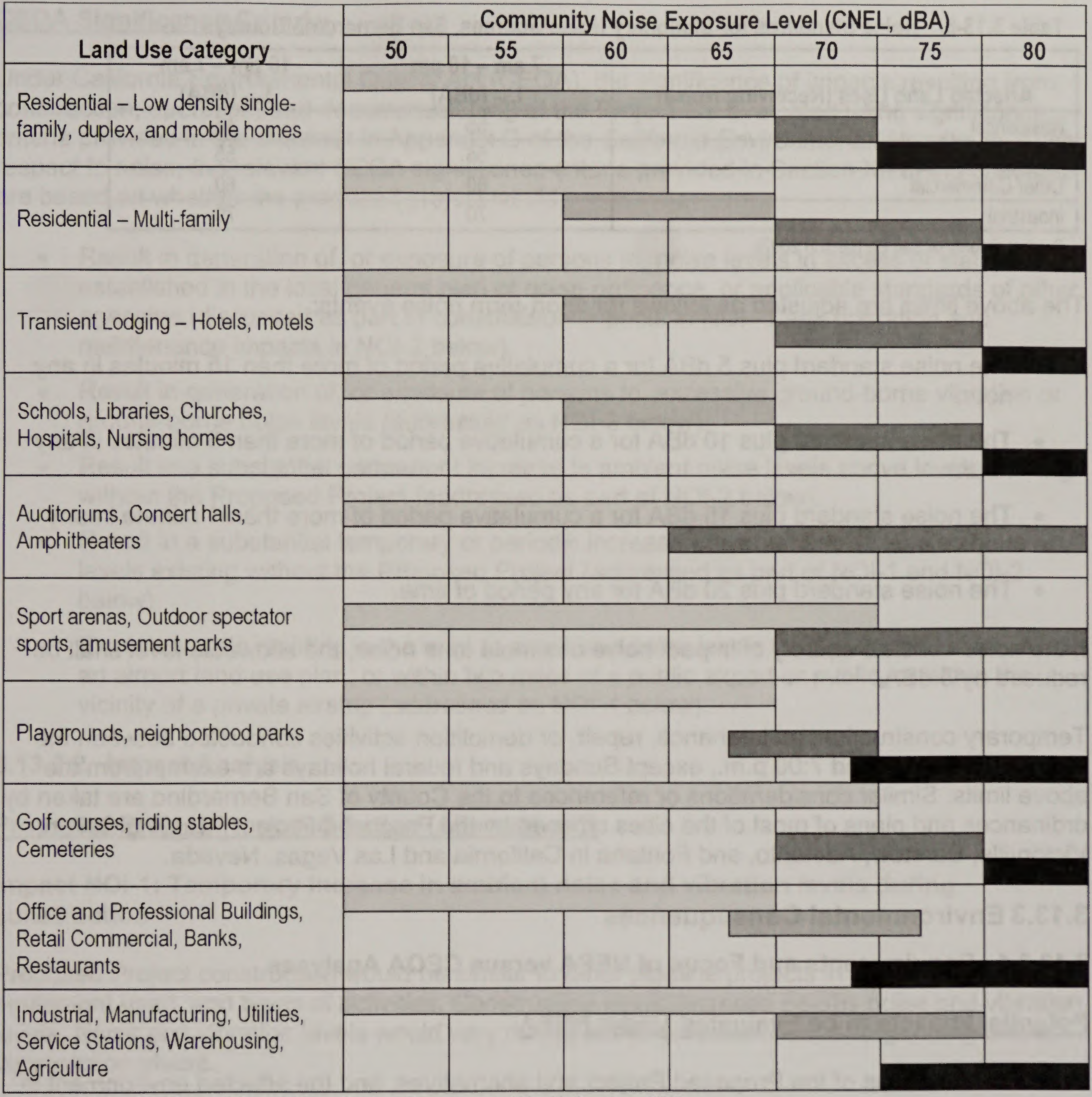
In addition, noise limits for highway vehicles are regulated under the California Vehicle Code, §§23130 and 23130.5. The limits are enforceable on the highways by the California Highway Patrol and the County Sheriff's Office.

Local Regulations

The Municipal Codes establish a city's standards, guidelines, and procedures regarding the regulation of noise within the City limits. The Codes usually include Noise and Zoning Ordinances, which establish guidelines and review procedures for noise-generating land developments.

The Noise Element in the County of San Bernardino General Plan (2007a) states that noise levels shall not exceed performance standards listed in Chapter 83.01 of the County Development Code at the boundary of areas planned or zoned for residential or other noise-sensitive land uses. Performance standards are also identified in Chapter 83.01 of the County Development Code (Table 3.13-8).

Table 3.13-7 Noise/Land Use Compatibility Matrix for Community Noise Environments



Source: State of California Office of Noise Control, Department of Health Services 1976

☐ **Normally acceptable:** Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

▧ **Conditionally acceptable:** New construction or development should be undertaken only after a detailed analysis of the noise requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air systems or air conditioning, normally suffices.

▨ Normally unacceptable: New construction or development should generally be discouraged. If it does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

■ Clearly unacceptable: New construction or development should generally not be undertaken.

Table 3.13-8 Noise Standards for Stationary Noise Sources, San Bernardino County

Affected Land Uses (Receiving Noise)	7 am – 10 pm L_{eq} (dBA)	10 pm – 7 am L_{eq} (dBA)
Residential	55	45
Professional Services	55	55
Other Commercial	60	60
Industrial	70	70

Source: County of San Bernardino 2007b

The above limits are adjusted as follows for short-term noise events:

- The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour.
- The noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour.
- The noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour.
- The noise standard plus 20 dBA for any period of time.

If the noise consists entirely of impact noise or simple tone noise, the allowable level shall be reduced by 5 dBA.

Temporary construction, maintenance, repair, or demolition activities conducted between the hours of 7:00 a.m. and 7:00 p.m., except Sundays and federal holidays are exempt from the above limits. Similar considerations or references to the County of San Bernardino are taken by ordinances and plans of most of the cities crossed by the Proposed Project including Colton, Victorville, Barstow, Adelanto, and Fontana in California and Las Vegas, Nevada.

3.13.3 Environmental Consequences

3.13.3.1 Requirements and Focus of NEPA versus CEQA Analyses

Potential Impacts to be Evaluated Under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential impacts associated with noise have been identified for evaluation:

- Noise attributable to the construction and operation of the proposed pipeline and ancillary facilities would exceed an L_{dn} of 55 dBA at nearby noise-sensitive areas such as residences, schools, hospitals, or other occupied dwellings (discussed as part of construction impacts in NOI-1 and operation and maintenance impacts in NOI-2 below); or
- Noise related to the Proposed Project exceeds applicable federal, state, and local standards at nearby noise-sensitive areas (discussed as part of construction impacts in NOI-1 and operation and maintenance impacts in NOI-2 below).

CEQA Significance Criteria

Under California Environmental Quality Act (CEQA), the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to noise, the relevant CEQA significance criteria provided in Section XII of the checklist are based on whether the proposed project would:

- Result in generation of, or exposure of persons to, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (discussed as part of construction impacts in NOI -1 and operation and maintenance impacts in NOI-2 below).
- Result in generation of, or exposure of persons to, excessive ground-borne vibration or ground-borne noise levels (addressed as NOI-3 below).
- Result in a substantial permanent increase in ambient noise levels above levels existing without the Proposed Project (addressed as part of NOI-2 below).
- Result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the Proposed Project (addressed as part of NOI-1 and NOI-2 below).
- Expose people residing in the area to excessive noise levels for a project located within an airport land use plan, or within two miles of a public airport or public, or within the vicinity of a private airstrip (addressed as NOI-4 below).

3.13.3.2 Impact Analysis

Proposed Project/Proposed Action (Alternative 1)

Impact NOI-1: Temporary increase in ambient noise and vibration levels during construction

Proposed Project construction would be similar to other pipeline projects in terms of schedule, equipment used, and types of activities. Construction would increase nearby noise and vibration levels. Noise and vibration levels would vary during the construction period, depending on the construction phase.

The loudest equipment types generally operating at a site during construction would contribute to a composite average or equivalent site noise level. Noise levels from common construction equipment at various distances can be estimated conservatively by assuming that the only attenuating mechanism is the divergence of the sound waves in open air (Table 3.13-9). It is anticipated that the nearest sensitive receptors would be at least 1,000 feet away from the construction site.

Sensitive receptors located within 1,000 feet of the pipeline ROW and new laterals and pump station would experience short-term inconvenience from the construction equipment noise. Therefore, the Proposed Project would have minimal short-term noise impacts as a result of construction. On-site noise levels are anticipated to be in the 70 to 85 A-weighted dB range.

Construction noise and vibration levels related to the Proposed Project would vary during the construction period, depending on the construction phase and number and location of operating construction equipment. Pipeline construction generally proceeds at rates ranging from several hundred feet to 1 mile per day. However, due to the assembly-line method of construction, these activities could last from one week to 30 days at a given location. Because the construction moves through an area relatively quickly, adverse noise impacts would typically be localized, intermittent, and short-term. Construction of the pipeline and aboveground facilities would take approximately 12 to 18 months to complete.

Table 3.13-9 Noise levels from common construction equipment at various distances

Equipment type	Typical Sound Pressure Level (dBA)			
	50 feet	1,000 feet	2,000 feet	4,000 feet
Equipment Powered by Internal Combustion Engines				
Earth Moving				
Front Loaders	72-84	46-58	40-52	34-46
Backhoes	72-93	46-67	40-61	34-55
Tractors	77-96	51-70	45-64	39-58
Scrapers	80-93	54-67	48-61	42-55
Graders	80-93	54-67	48-61	42-55
Pavers	86-89	60-63	54-57	48-51
Trucks	82-94	56-68	50-62	44-56
Materials Handling				
Concrete Mixers	75-88	49-62	43-56	37-50
Concrete Pumps	81-84	55-58	49-52	43-46
Cranes, Movable	75-88	49-62	43-56	37-50
Stationary				
Pumps	68-72	42-46	36-40	30-34
Generators	71-82	45-56	39-50	33-44
Impact Equipment				
Mounted Breakers	76-94	50-68	44-62	38-56
Pneumatic Wrenches	82-89	56-63	50-57	44-51
Jackhammers & Rock Drills	81-98	55-72	49-66	43-60
Impact Drivers (Peak)	95-106	69-80	63-74	57-68
Other				
Vibrator	69-81	43-55	37-49	31-43
Saws	72-82	46-56	40-50	34-44
Drill rig (HDD)[1]	79	n/a	n/a	n/a
Blasting activities[2]	94	n/a	n/a	n/a

Source: BLM 2008, New York City Department of Environmental Protection 2008

Notes:

[1] Acoustic usage factor: 20%. Reference noise level and acoustic factor from the New York City Department of Environmental Protection, Construction Noise Rules.

[2] Acoustic usage factor: 0.01%. (Bolt, Beranek, and Newman, Inc. 1977).

Noise generated from construction equipment, drilling, and blasting would all contribute, temporarily, to noise. Blasting and horizontal directional drilling (HDD) would have noise levels of about 79 and 94 dBA at a distance of 50 feet. In addition, a temporary increase in local traffic noise would occur as a result of construction workers and equipment traveling to and from the sites.

In less populated or rural areas, although livestock and nesting birds in the immediate vicinity of construction activities may be temporarily disturbed, the impact on the noise at any specific location would be short term. Similarly, noise and vibration associated with construction of the proposed aboveground facilities in rural areas would be intermittent during the construction period, but the overall impact would be temporary and is not expected to be significant. Furthermore, nighttime noise levels would normally be unaffected because most construction activities would be limited to daylight hours.

Worker exposure levels during construction would vary depending on the proximity of the workers to the noise-generating activities. Hearing protection would be available for workers and visitors to use as needed throughout the duration of construction period. A Hearing Protection Plan, which complies with California Division of Occupational Safety and Health requirements, would be incorporated into the Health and Safety Plan.

Blasting would likely be the most prominent source of unwanted noise and vibration during construction, but the events would be short in duration and site-specific. According to the Conceptual Blasting Plan (URS Corporation 2009a), all blasting would be conducted during daylight hours and would not begin until occupants of nearby buildings, stores, residences, places of business, and farms within 1,000 feet of the blast area are notified a minimum of 24 hours in advance. The notification radius would be specified in the Site-Specific Blasting Plan.

The Conceptual Blasting Plan states that the distance and orientation to nearby aboveground structures would be identified by the contractor and considered in Site-Specific Blasting Plans. The Site-Specific Blasting Plans must be approved by the BLM prior to commencing with blasting or activities related to blasting (e.g., drilling). The Conceptual Blasting Plan indicates that flagmen would be used to block traffic on all public access roads within 500 feet of any blast.

Blasting and HDD generate noise levels in the higher ranges represented in Table 3.13-9. Blasting would occur in locations specified in the Site-Specific Blasting Plans. HDD would be anticipated to occur in the locations specified in Chapter 2 and summarized in Table 3.13-10.

Table 3.13-10 Horizontal Directional Drilling Locations

HDD No.	Proposed Project Route		Name of Feature Drilled	Approximate Length (feet)
	From MP	To MP		
2	2.4	2.6	Railroad and I-10	1,700
3	10.1	10.1	SR – 210 (Rev. B)[1]	1,800
4	-	-	SR – 210 (Locust Alt.)[1]	1,800
5	-	-	SR – 210 (Laurel Alt.)[1]	1,800
6	-	-	SR – 210 (Alder Alt.)[1]	1,800
8	22.4	22.4	Wash	1,000
9	27.0	27.1	Wash	1,000
10	28.2	28.5	Railroad and I-15 (Wagon Train Alt.)[2]	1,800
11	-	-	I-15	1,500
26	-	-	Cajon Riparian	2,300
12	40.2	40.2	California Aqueduct	1,000
13	57.9	58.1	Mojave River	1,500
14	79.9	79.9	I-15	500
15	89.6	89.7	I-40	600
16	90.6	90.8	National trails, railroad and Mojave River	1,200
17	121.7	121.8	I-15 and Service Road	500
18	189.3	189.4	I-15 (Nipton Alt.)[3]	500
19	227.0	227.0	SR-146	600
20	230.1	230.1	I-15	1,000

Table 3.13-10 Horizontal Directional Drilling Locations

HDD No.	Proposed Project Route		Name of Feature Drilled	Approximate Length (feet)
	From MP	To MP		
22	235.2	235.3	I-215	1,000
24	-	-	I-15 and Sunset	2,000
25	-	-	I-15 (Russel Alt.)	2,000

Notes:

[1] I-210 HDD alternative locations; only one would be used for construction.

[2] I-15 HDD alternative locations; only one would be used for construction.

[3] An HDD activity in the area of Nipton Road into the Mojave National Preserve would be part of Alternative 2. For the purposes of the EIS/EIR, it would be assumed that additional workspace areas are similar in size to HDD No. 18.

Summary

Noise levels during construction would be a temporary direct, adverse impact to local residents during construction within 1,000 feet of a residence. Noise levels would exceed an L_{dn} of 55 dBA at residences, primarily within 500 feet of residential and commercial areas located primarily in the communities of Bloomington, Rialto, Devore, Keenbrook, Cajon, Adelanto, La Delta, Barstow, Yermo, and Harvard and the City of Las Vegas. The duration of the impact would be temporary, lasting only for a few weeks until the construction has passed through the area. Noise levels would exceed the EPA standards of 45 dBa for indoors, and 55 dBA for outdoors, at some residences, so would constitute an adverse impact, and would be significant under CEQA. Noise levels would likely not exceed the unacceptable levels of 70 dBa specified in the state compatibility matrix. The noise generated by the construction equipment would also result in a temporary increase in ambient noise levels during daylight hours, which would be a significant impact under CEQA.

Noise impacts would be reduced by implementation of the following mitigation measures. Even with mitigation, noise impacts at some residences are likely to remain significant under CEQA, but for a short duration. These impacts would also be considered to be residual effects under National Environmental Policy Act (NEPA).

- **MM NOI-1a: Noise Mitigation Plan.** Noise impacts from construction shall be mitigated in accordance with a Mitigation Plan to minimize effects on individuals, sensitive areas, fauna, and livestock. During permitting, the Applicant shall develop site-specific noise mitigation plans to comply with local regulations and shall seek any applicable authorizations or variances. Noise mitigation plans shall be provided to the construction contractors for implementation and shall be enforced by construction inspectors using portable sound level meters to monitor noise levels.

  The Applicant shall also ensure that construction equipment would be operated on an as-needed basis and shall be maintained according to manufacturer specifications to minimize noise impacts. Haul trucks and other engine-powered equipment shall be equipped with mufflers that meet all applicable regulations. Haul trucks shall be operated in accordance with posted speed limits. The use of truck engine compression brakes shall be limited to emergencies.

- **MM NOI-1b: Notification Prior to Construction.** Construction activities would occur within 500 feet of residential and commercial areas located primarily in the communities of Bloomington, Rialto, Devore, Keenbrook, Cajon, Adelanto, La Delta, Barstow, Yermo, and Harvard and the City of Las Vegas. To ensure that these areas are not affected by noise and vibration levels, the Applicant would give advance notice to landowners prior to construction, limit the hours during which construction activities are conducted, and ensure that construction proceeds quickly through such areas. In the event that the contractor expects noise levels to exceed regulated noise standards (based on the types of construction equipment or procedures), notice would be given to the Applicant so that immediate additional noise mitigation measures could be instituted.

The Site-Specific Blasting Plans shall include procedures for notification prior blasting.

- **MM NOI-1c: Noise Complaint Documentation and Resolution.** Throughout the construction phase, the Applicant shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The Applicant shall set up a communication line or procedures to enable individuals to contact the company in the event that construction noise levels affect them. In such circumstances, the Applicant shall conduct noise assessments to ensure that the noise attributable to construction does not exceed 55 dBA L_{eq}. In the event that construction noise cannot meet regulated levels, the Applicant shall develop an acceptable alternative construction work plan.

Impact NOI - 2: Increase in ambient noise levels at new project stationary facilities and during ROW operation and maintenance activities

The Proposed Project would have minimal indirect effects on noise levels as a result of continuous operation. There would be a minor increase in local traffic noise resulting from maintenance workers traveling periodically to and from the site. Noise sources associated with the operation of the Proposed Project primarily include electrically and diesel-driven pumps and valves.

All pumps and valves are anticipated to comply with an 85 dBA at 3 feet specification. The noise associated with the electrically driven pump stations would be limited to the vicinity of the facilities. Although noise impacts from these facilities are expected to be minor, the Applicant would perform a noise assessment survey during operations to confirm the level of noise at each listed noise sensitive area (NSA). The terminals and junctions would be located in areas that currently contain multiple petroleum products pipelines. The noise level associated with project stationary facilities is anticipated to be similar to existing levels.

Technical reference materials (Edison Electric Institute manufacturer data) indicate that the sound power level at the Silver Lake pump station would be estimated as 106 dBA for each pump, 92 dBA for each refrigeration compressor, and 81 dBA for each electric transformer. The estimated composite noise level at the station is 109 dBA (URS Corporation 2009b), which would require minimum distances from receptors (Table 3.13-11), according to the County of San Bernardino land use noise criteria (Table 3.13-8).

Table 3.13-11 Estimated noise compliance distances from Silver Lake station

Affected Land Uses (Receiving Noise)	Threshold (dBA)	Compliance distance (feet)
Residential	55	600
Professional Services	55	250
Other Commercial	60	150
Industrial	70	60

Source: URS Corporation 2009b

Notes:

To calculate the distance, a conservative margin of 3 dBA was added to the threshold value as a way to account for potential variances in air and ground effects.

Since the station may be in operation at any time, the nighttime L_{eq} for each land use was used in this evaluation.

The preliminary noise analysis conducted for the proposed Silver Lake Pump station (URS Corporation 2009b)[1] determined that the station would comply with the noise thresholds in the San Bernardino. County Development Code, Table 83-2 for stationary sources). The minimum compliance distance to the nearest receptor was estimated at 600 feet, while the Proposed location for the station is located 1,300 feet from the nearest residence.

Overall, noise impacts associated with operations and maintenance activities would be infrequent and of a low level. These impacts would not be significant under CEQA. However, implementation of the following mitigation measure would ensure that any noise attributable to the pump station is minimized. Even though there are likely to be few or no receptors, the noise generated by the pump station would be considered to be a residual effect under NEPA.

- **MM NOI-2. Noise Mitigation and Monitoring Plan.** If the noise attributable to the operation of any pump station exceeds 55 dBA L_{dn} at any NSA, the Applicant shall implement a Noise Mitigation and Monitoring plan to ensure that regulatory levels are not exceeded. Mitigation measures specified in this Plan shall include equipment enclosures. As such, the Applicant would minimize noise impacts to ensure that project-related operations would not result in a significant effect on the ambient sound level.

Impact NOI-3: Exposure to ground-borne vibration

The Proposed Project could generate ground-borne vibrations associated with HDD drilling activities. The locations of HDD drilling sites that are in close proximity to sensitive receptors, including residents, include two locations within the City of Rialto, the Mojave River crossing at La Delta, the crossing of St. Rose Parkway in Henderson, and the two crossings of Interstate 15 in Las Vegas. Of those, the Mojave River crossing is expected to have very few nearby residents, and the Henderson and Las Vegas crossings will occur in an urban environment adjacent to the Interstate highway, where construction vibrations are common. Only the HDD drilling activities at Rialto are expected to have the potential to disturb residents. This impact could potentially be significant under CEQA, but would be temporary in duration. The impact of vibrations would be reduced to less than significant by implementation of mitigation measures 1a, 1b, and 1c.

Impact NOI-4: Exposure of people near airports

The Proposed Project would be located within two miles of public airports or private airstrips at the Southern California Logistics Airport. However, this airport is located in a remote airport with few nearby residents. Therefore, the combination of construction-related noise with airport noise would not be a significant impact under CEQA.

<u>Alternative 2</u>

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[1] Assumptions adopted by URS (2009b) for this preliminary analysis included:

- The station has one 3,500 horsepower (HP) variable speed pump and one 2,750 HP fixed-speed centrifugal electrically-powered fluid-handling pump, both of which are operating at 100% capacity (as worst case). A 2,000 HP pump would be installed as an in-line spare.
- Pumps are exposed to the outdoors.
- Aside from the pumps, other noise sources at the station include the 4160/480-Volt and 115 kilovolt/4160 transformers and the pair of 25-ton refrigeration compressors/condensers for the variable frequency drive enclosure.
- Pumps and transformers may operate at any time.
- Noise thresholds in San Bernardino Development Code Table 83-2 are applicable to the nearest receptor.
- Ambient noise levels are estimated to range from 40 dBA to 50 dBA L_{eq} for a location 2,500 feet from Interstate 15, depending on ground conditions and using conservative traffic estimates (i.e., about 2% average daily traffic volumes per nighttime hour).
- The station site is located at approximately 150.5
- The nearest residences are about 1,300 feet from the proposed station site.

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, are very similar with respect to noise. Both routes are located within 1,000 feet of residences, so noise impacts during construction would still be a direct, adverse impact under NEPA, and would still be significant under CEQA. Noise impacts would be reduced by implementation of mitigation measures NOI-1a, NOI-1b, and NOI-1c. Even with mitigation, noise impacts at some residences are likely to remain significant under CEQA, but for a short duration. The different routes would impact a different set of residents, but the density of residential development in both areas is approximately the same. Therefore, the impacts of noise during construction and operation would be the same for the Bloomington Alternative route as for the Proposed Project.

Rialto Alternative

The Rialto Alternative route variation, and the segment of the Proposed Project that it would replace within the City of Rialto, are very similar with respect to noise. Both routes are located within 1,000 feet of residences, so noise impacts during construction would still be a direct, adverse impact under NEPA, and would still be significant under CEQA. Noise impacts would be reduced by implementation of mitigation measures NOI-1a, NOI-1b, and NOI-1c. Even with mitigation, noise impacts at some residences are likely to remain significant under CEQA, but for a short duration. The different routes would impact a different set of residents, but the density of residential development in both areas is approximately the same. Therefore, the impacts of noise during construction and operation would be the same for the Rialto route as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route, and the segment of the Proposed Project that it would replace within the unnamed riparian area, do not have any differences with respect to noise. Neither route is located adjacent to residents or sensitive receptors. The location of the HDD under Interstate 15 would be in different locations under the Alternative versus the Proposed Project, but neither HDD location is within close proximity to residences. Overall, the potential noise impacts associated with the Wagon Train Road route would be the same as those identified for the Proposed Project.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa Alternative route, and the segment of the Proposed route along Baldy Mesa Road that it would replace, are very similar with respect to noise. Both routes are located within 1,000 feet of residences, so noise impacts during construction would still be a direct, adverse impact under NEPA, and would still be significant under CEQA. Noise impacts would be reduced by implementation of mitigation measures NOI-1a, NOI-1b, and NOI-1c. Even with mitigation, noise impacts at some residences are likely to remain significant under CEQA, but for a short duration. The different routes would impact a different set of residents, but the density of residential development in both areas is approximately the same. However, the Proposed Project route would pass directly in front of the Baldy Mesa Elementary School and Quail Valley Middle School. Therefore, the impacts of noise during construction would lower for the Phelan Road/Baldy Mesa Alternative route than for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, do not have any differences with respect to noise. Neither route is located adjacent to residents or sensitive receptors. Overall, the potential noise impacts associated with the Zzyzx Alternative route would be the same as those identified for the Proposed Project.

Baker Alternative

The Baker Alternative route would have some differences with respect to noise impacts as compared to the Proposed Project. Instead of paralleling the existing Southern California Edison (SCE) and Los Angeles Department of Water & Power (LADWP) power lines west of Baker, the Alternative route would follow Interstate 15, a different transmission line route, and then public streets through the town of Baker. In general, the Proposed route would traverse mostly undeveloped land while the Alternative route would pass near residents and businesses within the Town of Baker.

Both routes are located within 1,000 feet of residences and near the school in Baker, so noise impacts during construction would be a direct, adverse impact, and would be significant under CEQA for either alternative. Noise impacts would be reduced by implementation of mitigation measures NOI-1a, NOI-1b, and NOI-1c. Even with mitigation, noise impacts at some residences are likely to remain significant under CEQA, but for a short duration. However, the density of residences adjacent to the Alternative route would be higher than for the Proposed route. Therefore, construction-related noise impacts would be greater for the Alternative route than for the Proposed route.

Silver Lake Pump Station Alternative

The Silver Lake Pump Station Alternative location would have a reduced level of noise impacts than would the Proposed Project location. The Proposed location is located adjacent to the school in Baker, and would likely add to ambient noise levels in the area, which would be a significant impact under CEQA. This impact would be reduced through MM NOI-2, but may still be significant under CEQA. Selection of the Alternative location would eliminate this potential impact entirely by locating the pump station approximately 2000 feet mile to the east, in an undeveloped area.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation, and the segment of the Proposed Project that it would replace that passes through Bracken Junction, do not have any differences with respect to noise impacts. Neither route is located adjacent to residents or sensitive receptors. The location of the HDD under Interstate 15 would be in different locations under the Alternative versus the Proposed Project, but neither HDD location is within close proximity to residences. Overall, the potential noise impacts associated with the Sunset Lateral Alternative route would be the same as those identified for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to noise impacts.

Summary

Overall, Alternative 2 would have a reduced level of noise impacts as compared to the Proposed Project. This difference is primarily due to the avoidance of noise impacts to the Baldy Mesa Elementary School and Quail Valley Middle School associated with the Phelan Road/Baldy Mesa Alternative route, and avoidance of impacts to the school in Baker by selecting the Silver Lake Pump Station Alternative location. Impacts at the other route variations under Alternative 2 would be similar to those of the Proposed Project. Noise impacts under Alternative 2 would still be temporary direct, adverse impacts to local residents. These impacts would be reduced, but not eliminated, through implementation of mitigation measures MM NOI-1a, NOI-1b, and NOI-1c.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. Selection of Alternative 3 would incorporate the elimination of noise impacts associated with the proximity of the Silver Lake Pump Station to the school in Baker. However, Alternative 3 would not incorporate the reduction in noise impacts by avoiding construction adjacent to Baldy Mesa Elementary School and Quail Valley Middle School. These impacts would still occur in Alternative 3 as they would under the Proposed Project. However, these noise impacts would be temporary, and would be mitigated by implementation of mitigation measures MM NOI-1a, NOI-1b, and NOI-1c.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under NEPA and CEQA, this Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) must consider an alternative that assess the impacts if the Proposed Project is not approved and the application is rejected. The No Action Alternative assumes that the existing Calnev system would continue to be operational at its maximum feasible level and that additional needs would be provided to the market by other means. It is possible, for example, that the need for additional delivery of petroleum products could be met by truck or rail shipments.

Under the No Action Alternative, the anticipated fuel demand in Las Vegas, Nevada and the California High Desert resulting from population growth and/or tourism would exceed the capacity of the existing Calnev Pipeline System. A portion of the demand could be met in ways identified in a report prepared by a Clark County Blue Ribbon Commission (BRC) to improve reliability of southern Nevada's fuel supply. Two alternative methods of fuel transportation were examined in the BRC report: delivery by rail or truck. The BRC also indicates that either of these options would require construction of new loading/off-loading facilities and/or new rail terminals.

The Proposed Project would increase system capacity up to approximately 44,000 barrels per day. The BRC estimated that 50 truck loads per day would be needed to transport 10,476 barrels per day. The BRC also estimated it would take three trains per week (with 85 cars per train) to transport 29,922 barrels per day. In order to meet the equivalent of the Proposed Project, it is assumed that 210 truck loads per day or four trains per week would be need to transport 44,000 barrels per day.

If the use of truck and rail traffic increased as part of the No Action Alternative, this could result in increases in noise impacts at loading facilities, along highways and rail systems, and at offloading facilities. These impacts would be direct, adverse impacts that would be permanent.

Because they would be a permanent addition to ambient noise levels, these impacts would be significant under CEQA. Mitigation of these noise impacts would be outside of the jurisdiction of the agencies involved in the development of this EIS/EIR.

3.13.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.13-12, there are differences in impacts based on the route variations.

Table 3.13-12 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
Temporary impacts during construction.	Temporary impacts during construction would be same as Proposed Project.	Temporary impacts during construction would be same as Proposed Project.	No impacts

3.13.4 Summary of Mitigation

A complete list of mitigation measures for the proposed Project is presented by impact in Table 3.13-13. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.13-13 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
NOI-1: *Temporary increase in ambient noise and vibration levels during construction.* Construction activities would temporarily increase the ambient noise and vibration levels at areas	**MM NOI -1a. Construction Noise Mitigation Plan.** **MM NOI – 1b. Notification prior construction.** **MM NOI – 1c. Noise complaint documentation and resolution**	All construction locations.	BLM, USFS, San Bernardino County, Clark County	Pre-construction and during construction
NOI - 2: *Increase in ambient noise levels at new project stationary facilities, and during ROW operation and maintenance activities.* Operation and maintenance of new project stationary facilities and ROW would increase noise levels on-site.	**MM NOI-2. Noise Mitigation and Monitoring Plan.**	All construction locations.	BLM, USFS, San Bernardino County, Clark County	Pre- and post-construction

References

Baker, S. 2008. Noise and Vibration Appendix. In California Energy Commission, 2008 Application for Certification for the Ivanpah Solar Generating System Project.

Bolt, Beranek, and Newman Inc. and Empire State Electric Energy Research Corp. May 1977. Report No. 3321. New York, NY.

Bureau of Land Management (BLM). 2008. *Draft Environmental Impact Statement for the UNEV Pipeline*. Salt Lake City, Utah. http://www.blm.gov/pgdata/etc/medialib/blm/ut/lands_and_minerals/lands/major_projects/unev_pipeline.Par.91298.File.dat/12-23UNEV_DEIS_103108.pdf

California Energy Commission. 2008. Application for Certification for the Ivanpah Solar Generating System Project. http://www.energy.ca.gov/sitingcases/ivanpah/documents/applicant/AFC/Volume1/ISEGS_005.7_Noise.pdf.

City of Colton. 1987. *Final Preliminary General Plan for the City of Colton*. Noise Element.

City of Fontana. 2003. *City of Fontana General Plan*. October.

City of Rialto. 1992. *City of Rialto General Plan*. March.

County of San Bernardino. 2007a. General Plan. *Noise*.

County of San Bernardino. 2007b. San Bernardino County Development Code. http://www.co.san-bernardino.ca.us/landuseservices/DevCode/Default.asp. Accessed January 16, 2009.

Department of State. 2007. *Draft Environmental Impact Statement for the Keystone Oil Pipeline Project*. Washington, DC.

Google Earth. 2009. Web Application.

New York City Department of Environmental Protection. 2008. *Gilboa Dam Stabilization Project Environmental Assessment*. Noise Assessment. http://www.nyc.gov/html/dep/pdf/gilboa/gilboa_ea3.pdf

Southern California Association of Governments (SCAG). 2003. *Draft 2004 Regional Transportation Plan Preliminary Environmental Impact Report*. December 2003.

State of California Office of Noise Control, Department of Health Services. 1976. *Community Noise Exposure Levels*.

URS Corporation. 2009a. *Conceptual Blasting Plan for Calnev Expansion Project (CNX)*.

URS Corporation. 2009b. *Preliminary Noise Analysis for the proposed Silver Lake Pump Station*.

3.14 Recreation

This section describes the recreation resources that may be affected by the Proposed Project. This section also discloses permanent and temporary impacts to recreational activities. During the scoping period, government agencies and members of the public identified the following issues and concerns related to recreation resources: (1) identify recreation facilities that would be impacted by the Proposed Project and quantify impacts; (2) disclose impacts to off-highway vehicle (OHV) facilities that are associated with Proposed Project construction, operation, and maintenance; (3) identify potential conflicts with future recreation facilities that are part of current development plans; and (4) promote the development of self-sustaining regional recreation resources and facilities. Comments 1) and 2) are addressed herein and mitigation measures proposed in Section 3.12.3, Environmental Consequences. Comment 3) addresses the consistency of the Proposed Project with existing land use management plans, which is addressed in Section 3.10. Comment 4) is outside the scope of this Environmental Impact Statement (EIS)/Environmental Impact Report (EIR).

3.14.1 Affected Environment

This section discusses recreation resources within one mile of the Proposed Project. A one mile buffer has been chosen because it includes on-site impacts to recreation, as well as off-site impacts to recreational areas and dispersed recreational activities.

The Proposed Project and alternatives would primarily traverse undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States Forest Service (USFS), and the Department of Defense (DoD). Lands under the jurisdiction of the State of California, the State of Nevada, the County of San Bernardino, and Clark County would also be crossed by the pipeline right-of-way (ROW). Incorporated communities that would be crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, Barstow in California and Henderson and Las Vegas in Nevada.

Recreation resources in these areas are discussed below, by agency.

3.14.1.1 Bureau of Land Management

The majority of the land crossed by the Proposed Project is managed by BLM Field Offices in Barstow, and Needles, California, and Las Vegas, Nevada. Lands under the jurisdiction of the Barstow and Needles Field Offices are managed according to the goals, policies, and designations contained in the California Desert Conservation Area Plan (CDCA; BLM 1980), as amended.

Lands crossed by the Proposed Project or its alternatives are zoned as Limited, Moderate, or Intensive Multiple Use Class (MUC). These MUCs reflect a gradient from lands appropriate for more natural to more intensive uses. Some lands near I-15 are unclassified due to their proximity to incorporated or unincorporated towns or other intensive developments, and are not zoned. Access by motor vehicles is restricted to designated routes in MUC limited, moderate and unclassified lands, and are open to hunting and other shooting activities, consistent with State law. MUC intensive lands provide unlimited access for motor vehicle use including OHV. There are no general restrictions on non-motorized recreational use on these MUC lands, unless activities require a permit (for large groups or commercial gain). In addition there may be restrictions on the discharge of firearms other than for hunting. No MUC classified lands, indicative of wilderness or wilderness study areas, with restricted motorized use, are crossed by the Proposed Project or alternatives.

Lands under the jurisdiction of the Las Vegas Field Office are managed according to the goals, policies, and designations contained in the Las Vegas Resource Management Plan (RMP; BLM 1998). The primary management emphasis is placed on resource-based uses, not facility-based uses. The Proposed Project would not cross any recreational resources with RMP-defined special management objectives.

The CDCA plan includes a Recreation Element that outlines approved recreational uses and designates specific recreation areas. Recreational activities that may occur within or be affected by the Proposed Project area include dispersed recreation, organized permitted races or non-race OHV activities, nature study, hiking, equestrian use, shooting, and automobile and OHV touring (on designated routes). Dry lake beds are designated as open or limited. The affected area includes various lakebeds that are designated as limited. These lakebeds are available for non-motorized casual use or organized recreation use by permit. Popular recreational activities on area lakebeds include landsailing, flying model airplanes and rockets, and recreational and student filming.

The Las Vegas RMP lists approved dispersed recreational activities that may occur within or be affected by the Proposed Project area including photography, automobile touring along public roads, backpacking, bird watching, hunting, primitive camping, hiking, OHV uses, and some water-based recreation. The Las Vegas RMP also lists organized recreational activities including model airplane fly-ins, rocketry events, dog field trials, horseback riding, bicycle events, and organized OHV events (BLM 1998).

In addition to identifying dispersed recreational activities approved for BLM land, both the CDCA Plan and the Las Vegas RMP designate specific routes as non-motorized only trails, or OHV routes, and designate specific areas for recreational activities (Table 3.14-1). Unauthorized use of areas including non-motorized only trails, closed routes, and open desert for motorized vehicles is common. Because these activities are unauthorized, BLM planning activities typically include consideration of whether a Proposed Action is likely to increase use of unauthorized areas by making the areas more accessible, or by restricting access to nearby authorized routes. The potential for the Proposed Project to affect unauthorized uses is evaluated in Section 3.14-3.

Table 3.14-1 BLM Recreation Areas Within One Mile of the Proposed Project

Recreation Area	Activity	Milepost (MP)
California		
Sorrel Trail	Off-highway vehicle (OHV)	Crosses trail at MP 63
OHV Trail	OHV	Crosses trails from MP 72-73
Stoddard Valley OHV Area	OHV Open Area (off-route use authorized)	Crosses trails from MP 75-79
Atchison Topeka and Santa Fe RR	Train Viewing	Parallels tracks from MP 86-87
Afton Canyon Natural Area	Developed campground , hiking, bighorn and other wildlife viewing, picnicking, scenic views and OHV touring	Parallels the boundary from MP 120-127
Rasor OHV Area	OHV Open Area (off-route use authorized)	1 mile from MP 128
Halloran Spring	Wildlife viewing	0.3 mile N of MP 159
OHV trail	OHV	Crosses trail at MP 156-165
OHV trail	OHV	Crosses trail at MP 173-186
Ivanpah Dry Lake	Kite buggying/Landssailing	Crosses approx. MP 190-193

Table 3.14-1 BLM Recreation Areas Within One Mile of the Proposed Project

Recreation Area	Activity	Milepost (MP)
Nevada		
Jean Lake/Roach Lake Special Management Area	• Picnicking ,Hiking, OHV usage, Camping, Nature Study, and Scenic Views	Parallels from MP 198-205
Nelson/Eldorado Special Management Area	• Picnicking • Hiking • OHV usage • Camping • Nature Study • Scenic Views	9 miles east of MP 210
Las Vegas Valley Special Management Area	• Recreation facility usage	Crosses approx. MP 220.5-230
Union Pacific Railroad	Train Viewing	Parallels tracks from MP 196-233

Sources: BLM 1980; BLM 1998

3.14.1.2 United States Forest Service

The Project would cross the San Bernardino National Forest (SBNF) in the Cajon Pass area which contains recreation areas administered by the USFS Front Country Ranger District. This area of the SBNF is designated "Roaded Natural" according to the Recreation Opportunity Spectrum (USFS 2005a). Roaded Natural areas are defined as relatively undeveloped but within half a mile of a roadway and typically have low to moderate use on trails and moderate to high use on motorized roadways (USFS 1990).

The USFS uses land use zones as guides for planning and resource management. Land use zones crossed by the Proposed Project include the Developed Area Interface and Backcountry zones. The Developed Area Interface zone combines rural/urban and developed intermix zones and is characterized by high usage levels and developed recreation facilities. Backcountry describes zones that are generally less developed with low to moderate levels of use and infrastructure. Recreational activities in areas zoned Backcountry include camping and trailhead access (USFS 2005b; Table 3.14-2).

Table 3.14-2 SBNF Recreational Activities Within One Mile of the Proposed Project

Recreation Area/Facility	Activity	Milepost (MP)
Pacific Crest National Scenic Trail	• Hiking • Equestrian Use	The Proposed Project crosses trail north of MP 24 south of Cajon Junction
Cleghorn off-highway vehicle (OHV) Trail	• OHV	MP 23-24; Main staging area off of Cajon Blvd where it meets Cleghorn Rd.
Baldy Mesa OHV Area	• OHV	MP-26 to MP-27

3.14.1.3 State of California

<u>County of San Bernardino</u>

Recreation goals and policies are outlined in the San Bernardino County General Plan's Land Use and Open Space Elements (County of San Bernardino 2007). Recreational opportunities in San Bernardino County that may occur within the Proposed Project area include hiking, camping, OHV use, horseback riding, star-gazing, youth athletics, performing arts, and other entertainment.

Recreation facilities in San Bernardino County are managed by the Regional Parks Department, which maintains nine recreation areas encompassing approximately 9,200 acres (County of San Bernardino 2006). The only one of these parks located in close proximity to the Proposed Project is Glen Helen Regional Park. The existing Calnev 8-inch and 14-inch pipelines traverse Glen Helen Park, and the Applicant initially considered proposing the route of the new pipeline to be adjacent to those existing pipelines. However, as discussed in Section 2.3.1 (Alternatives Considered but Eliminated from Further Consideration), Calnev submitted a letter to BLM revising the SF-299 application after meeting with local officials, who expressed concerns regarding the use of the route through the Park. The revision, incorporated into the Proposed Action (Alternative 1), crosses Cajon Wash and the Southern Pacific Rail line, and bypasses Glen Helen Park. Therefore, neither the Proposed Action nor any project alternatives crosses Glen Helen Park.

The County of San Bernardino Regional Parks Department also maintains a non-motorized transportation system to allow public access to open space lands and County designated regional trails. These trails allow bicycle, equestrian, and pedestrian use and are identified as an increasingly important part of the County's recreational development (San Bernardino Associated Governments 2001). The Proposed Project would not cross any portions of the non-motorized transportation system.

Municipalities

City parks within one mile of the Proposed Project that may be affected by construction, operation, or maintenance of the Proposed Project are listed in Table 3.14-3.

Table 3.14-3 City Parks Within One Mile of the Proposed Project

City Park	Distance from Centerline	Milepost (MP)
Colton		
Colton Recreation Lake	0.5 mile	MP 0
George E. Brown Jr.	0.8 mile	MP 0
Bloomington		
Ayala Park	0.3 mile	MP 3
Rialto		
Rialto City Park 1	1 mile	MP 5
Anderson Park	0.2 mile	MP 5
Margaret Todd Park	0.5 mile	MP 6
Rialto City Park 2	0.3 mile	MP 6
Flores Park	0.2 mile	MP 7
Jerry Eaves Park	0.2 mile	MP 8
Birdsall Park	0.1 mile	MP 10
Victorville		
Hollyvale Park	0.8 mile	MP 40
Eagle Ranch Park	0.6 mile	MP 43
Mesa Linda Park	0.5 mile	MP 44
Adelanto		
Richardson Park	0.7 mile	MP 47
Howard Loy Park	0.5 mile	MP 47
Adelanto Park	0.4 mile	MP 47

3.14.1.4 State of Nevada

Clark County

In Nevada, the Proposed Project would cross Clark County through several unincorporated, populated areas. The Clark County Comprehensive Plan's Recreation Element outlines standards and policies for County managed parks, trails, and open spaces, and also identifies policies for the development of future parks. The Proposed Project would cross land managed according to the South County Land Use Plan (Clark County 2008), the Enterprise Land Use Plan (Clark County 2004), and the Winchester-Paradise Land Use Plan (Clark County 2005). Recreation areas and facilities designated under these plans are managed by the Clark County Parks and Community Services Department. No facilities in the South County LUP area would be affected by the Proposed Project.

One facility, the All American Sports Park may be affected in the Winchester-Paradise land use planning area. This facility consists of 277 acres. In the Enterprise land use planning area, two parks are within the potentially affected area, totaling 236 acres. Potentially affected park facilities in both planning areas include recreation centers, skate parks, swimming pools, ball fields, basketball courts, volleyball courts, dog parks, playgrounds, tennis courts, walking/hiking courses, horse shoe, and Frisbee golf courses. Existing parks in Clark County within one mile of the Proposed Project may be affected by construction, operation, or maintenance of the Proposed Project are listed in Table 3.14-4.

Table 3.14-4 Existing Clark County Parks Within One Mile of the Proposed Project

Facility	Distance from Pipeline (miles)	Milepost (MP)
South County Land Use Plan		
None		
Enterprise		
Facility 66	1	MP 231
Goett Family Park (So. Highlands)	0.8	MP 227
Facility 59	0.5	MP 227
Winchester-Paradise		
All American Sports Park	1	MP 232

Sources: Clark County 2004, 2005, 2008.

In addition to existing parks, several additional park locations have been identified for future development at various locations overlapping the Proposed Project area.

Municipalities

No municipal parks or other local recreation facilities in Nevada are located within one mile of the Proposed Project.

3.14.2 Applicable Regulations, Plans, and Policies

Plans, regulations, and policies relevant to the Proposed Project at the federal, state, and local level are listed below. Each contains a brief overview of the standard for each plan, regulation, and policy that form the basis for impacts analysis.

3.14.2.1 Federal

Federal Land Policy and Management Act (FLPMA) of 1976

As provided in FLPMA §101, BLM's legal mandate is to manage BLM lands in accordance with the principles of multiple use and sustained yield. The act also directs BLM to protect "the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use" (90 Stat. 2743; 43 United States Code 1601, et seq.)

Specific, authorized uses are determined in the land use planning process, as prescribed in §202 of FLPMA. The Proposed Project would be in conformance with BLM's mandate to manage BLM land for multiple use as outlined in §101 and 202 of FLPMA.

CDCA Plan of 1980, as amended

The BLM's CDCA Plan describes land use management goals and policies within the approximately ten million acre CDCA Planning Area as well as provides guidelines and requirements for recreational activities. Goals in the CDCA Plan's Recreation Element are to:

- Provide for a wide range of quality recreational opportunities and experiences, emphasizing dispersed undeveloped use.
- Provide a minimum of recreation facilities. Facilities should emphasize resource protection and visitor safety.
- Manage recreational use to minimize user conflicts, provide a safe recreation environment, and protect desert resources.
- Emphasize the use of public information and education techniques to increase public awareness, enjoyment, and sensitivity to desert resources.
- Adjust management approach to accommodate changing visitor use patterns and preferences.
- Encourage the use and enjoyment of desert recreational opportunities by special populations and provide facilities to meet the needs of those groups.

Goals in the CDCA Plan's Motorized Vehicle Access Element are to:

- Provide for contained motorized vehicle access in a manner that balances the needs of all desert users, private landowners, and other public agencies.
- When designating or amending areas or routes for motorized vehicle access, to the degree possible, avoid impacts to desert resources.
- Use maps, signs, and published information to communicate the motorized vehicle access situation to desert users, making sure all information materials are understandable and easy to follow.

The Proposed Project will provide for continued public access on public lands during construction of facilities and will provide appropriate information to assure recreationists are aware of short-term delays or detours that may occur during Proposed Project construction. Any temporary route closures will be short-term and minimal in effect, and will be for public safety purposes. No permanent closures of open routes are proposed.

Therefore, the Proposed Project would conform to the management goals stipulated in both the Recreation Element and the Motorized Vehicle Access Element of the CDCA Plan.

In addition, two of the recreational areas have specific management plans—Stoddard Valley OHV area and Afton Canyon Area of Critical Environmental Concern.

Las Vegas RMP, as amended

The Las Vegas RMP provides a comprehensive framework for managing approximately 3.3 million acres of public lands administered by BLM Las Vegas Field Office (BLM 1998).

Recreation Objectives of the Las Vegas RMP are to:

- Ensure that a wide range of recreational opportunities are available for recreation users in concert with protecting the natural resources on public lands that attract users.
- Coordinate with county and city governments to manage 197,300 acres in the Las Vegas Valley to facilitate the provision of open space areas, recreation trails, and parks necessary for valley residents.
- Manage 81,600 acres for competitive OHV events on BLM administered lands in the Nelson Hills/Eldorado Valley Special Recreation Management Area, in accordance with the applicable Biological Opinion(s) to protect desert tortoise habitat.
- Manage 216,300 acres in the Jean/Roach Dry Lakes Area for intensive recreational opportunities, competitive OHV (in accordance with the United States Fish and Wildlife Service Biological Opinion) and other recreational events, as well as dispersed recreational use and commercial activities.
- Manage public lands not included within Special Recreation Management Areas as the Southern Nevada Extensive Recreation Management Area, emphasizing dispersed and diverse recreational opportunities.
- Provide opportunities for OHV use while protecting wildlife habitat, cultural resources, hydrological and soil resources, non-motorized recreational opportunities, natural/aesthetic values, and other uses of the public land.

SBNF Land and Resource Management Plan

The Plan designates land within the SBNF into Land Use Zones to protect sensitive ecosystems and species while allowing public access to the land for recreational use. Land Use Zones crossed by the Proposed Project in the Cajon Pass and Lytle Creek area of the SBNF are 'Developed Area Interface,' allowing for the highest level of human use, and 'Backcountry,' allowing for low to moderate human use (USFS 2005b). The Proposed Project would not conflict with any elements of the San Bernardino National Forest Land and Resource Management Plan.

SBNF Five-Year Program of Work

The SBNF has developed a future management plan for developed recreation sites, through a "Recreation Facility Analysis" process designed to align developed recreation sites with the SBNF's niche (unique characteristics of the forest), projected recreation demand, visitor expectations, and revenue. In October 2007, the SBNF completed a five-year Program of Work (Program) that focuses on continued good management of developed recreation sites allowing for best operations and maintenance at each site (USFS 2007). The Program includes a list of proposed activities, including rebuilding portions of developed recreation sites, modifying current season(s) of operation, and rebuilding or constructing new amenities. The Proposed Project would be in conformance with the Program because it would not hinder implementation of any of the proposed improvements.

3.14.2.2 California

San Bernardino County General Plan

The San Bernardino County General Plan addresses recreation as part of its evaluation of the Land Use Element, Open Space Element, and Circulation Element. The Land Use Element stresses the importance of recreation as a factor that needs to be integrated into community development. The Open Space Element addresses the need for open spaces to be available for outdoor recreation, and the Circulation Element considers how transportation policies can affect access to recreation. The Plan includes two specific goals related to recreation, as follows:

- Goal OS-1 states that the county will provide plentiful open spaces, local parks, and a wide variety of recreational amenities for residents; and
- Goal OS-3 states that the County will advocate multi-use access to public lands, including National Forests and BLM land.

City of Colton General Plan Open Space and Conservation Element

The principal of this Element is to ensure a wide range of active and passive recreational uses through the promotion of a coordinated system of open space areas and linkages directed to scenic, scientific, cultural, and nature-oriented uses with a standard that there shall be five acres of park land per 1,000 residents. The Proposed Project would be in conformance with the Open Space and Conservation Element of the City of Colton General Plan (City of Colton 1987) because it does not compromise any of the principles and standards set forth in the plan.

3.14.2.3 Nevada Division of State Parks

2003 Nevada Statewide Comprehensive Outdoor Recreation Plan (SCORP)

The SCORP describes recreational needs and issues for the state and provides strategies for improving the quality of recreation outlets based on the needs of the population. SCORP identified the following outdoor recreational issues of primary concern: public access to public lands for a diverse recreational experience, funding needs for recreational opportunities, and more attention to the need for recreation trails and pathways (Nevada Division of State Parks 2003). The Proposed Project would be in conformance with SCORP because no parks or recreational facilities are located or planned in the Proposed Project area.

The Clark County Parks listed in Table 3.14-4 are all at least 0.5 mile away from the Proposed Project area and will not be impacted by construction activities. The Clark County

Comprehensive Plan set out guidelines for recreational areas and the Proposed Project is in conformance with current policies.

City of Las Vegas 2020 Master Plan

The City of Las Vegas 2020 Master Plan describes planning needs for the projected population growth of the Las Vegas metropolitan area and surrounding communities for the year 2020. Recreational activities are factored in to planning and are specifically addressed in the Community Design Element, Parks and Recreation Element, and the Recreation Trails Element of the Plan.

The Las Vegas Department of Planning and Development prepares the Parks & Recreation Element of the Master Plan which describes a strategy for providing adequate and accessible recreational activities and facilities best suited for the needs of the community. This element facilitates public recreational cooperation among governmental agencies and civic groups so that adequate park and recreational planning can be recognized. The Proposed Project would be in conformance with the Plan because no parks or recreational facilities are located or planned in the Proposed Project area.

3.14.3 Environmental Consequences

3.14.3.1 Requirements and Focus of NEPA versus CEQA Impact Analyses

Potential Impacts to be Evaluated Under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential impacts to recreation have been identified for evaluation:

- Disrupt recreation in designated areas or facilities (addressed as REC-1 below); and
- Increase Access to Previously Undisturbed Areas (addressed as REC-2 below).

CEQA Significance Criteria

Under CEQA, the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to recreation, the relevant CEQA significance criteria provided in Section XV of the checklist are based on whether the proposed project would:

- Increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur or be accelerated (addressed as REC-3 below).
- Include recreation facilities or require the construction or expansion of recreation facilities that might have an adverse physical effect on the environment (included within the evaluation of REC-3 below).

3.14.3.2 Impact Analysis

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Mitigation measures (MMs) are compiled in Section 3.14.4, Summary of Mitigation.

Proposed Project/Proposed Action (Alternative 1)

Impact REC-1: Disrupt Recreation Activities in Designated Recreation Areas

Description of Potential Impact

Construction of the Proposed Project could cause a temporary disruption of access to certain recreation facilities during the three-week construction window. In urban environments an open trench construction method would be used to cross city streets. Depending on the width of the street, construction activities could, but are not likely to, close entire city blocks for the duration of project construction, which is expected to be three weeks in any one location. Traffic in these areas would be redirected in accordance with the Applicant's Traffic Management Plan. Most of the streets are wide and have multiple lanes; therefore, closing of entire city blocks is not likely to occur.

In rural areas the Proposed Project would cross roads using an open cut construction method. These roads may be the only means of access to some recreation facilities identified below. Construction of the Proposed Project in rural areas would likely result in a temporary disruption of access to recreation areas. Additional impacts to recreation resources would be caused by construction activities, such as clearing and grading, trenching, and backfilling, resulting in the emission of fugitive noise and dust. These impacts to recreation resources would be short-term, lasting up to three weeks.

Operations and maintenance of the Proposed Project would not result in any disruption to access to any recreational areas.

Locations of Potential Impacts

Tables 3.14-1 through 3.14-4 list the designated recreation facilities within 1 mile of the Proposed Project, most of which will not likely be impacted during construction. Restriction of access could also occur to open areas and trails, as discussed below. Adverse impacts to recreational users could occur at the following locations.

Stoddard Valley OHV Area

The Proposed Project would cross the northern boundary of the Stoddard OHV Area from MP 76 to MP 81. A 100-foot-wide construction ROW would be graded, trenched, and filled, resulting in up to 60.5 acres of disturbance for up to three weeks.

In 2008, the BLM issued 45 use permits and counted about 60,000 visitors to the Stoddard Valley OHV Area primarily from October to April (Blaine 2009). Construction of the Proposed Project would disrupt the normal recreation area use patterns. This temporary change in recreational use would result in an adverse effect to the Stoddard Valley OHV Area. While impacts to this resource would be temporary, the nature of the construction activities within the recreation area would be intense. Mitigation for this adverse effect is identified below.

Baldy Mesa OHV Area

The Proposed Project would be located within the Baldy Mesa OHV area of the San Bernardino County National Forest. Construction of the Proposed Project would disrupt the normal recreation area use patterns. This temporary change in recreational use would result in an adverse effect to the Stoddard Valley OHV Area. While impacts to this resource would be temporary, the nature of the construction activities within the recreation area would be intense. Mitigation for this adverse effect is identified below.

Ivanpah Dry Lake

The Proposed Project would impact recreational activities at Ivanpah Dry Lake from MP 190 to 193 on lands administered by the BLM. The lakebed is used for numerous recreational activities including sailing, archery, and camping, mostly from October to April. Construction of the Proposed Project would occur within a 100-foot ROW, disturbing approximately 36.37 acres of land for three weeks. Recreational activities would be closed on lands on or near any construction activity. Recreational users would be displaced during this period. Impact would be lower if construction occurred during the summer months or other low use periods.

Last year, the BLM issued 185 use permits (five special recreation permits, and 180 general use/casual use permits), and counted 5,000 visitors to Ivanpah Dry Lake (Ahrens 2009). An unknown number of visitors would be prohibited from using the affected portions of the lake bed during construction of the Proposed Project. Other impacts to recreational users would result from generation of fugitive dust, noise, and the presence of construction equipment within the recreation area. While construction would be a temporary impact, the nature of construction activities would be intense. Construction activities have the potential to cause permanent changes to the lakebed by altering the pre-existing contours of the surface. Mitigation for this adverse effect is identified below.

Jean Lake/Roach Lake Special Recreation Management Area

The Proposed Project would cross the Jean Lake/Roach Lake Special Recreation Management Area from MP 198 to MP 205. Last year, the BLM issued 26 use permits and counted 18,000 visitors to Jean Lake/Roach Lake Special Recreation Management Area (Bernard 2009). Construction of the Proposed Project would require a 100-foot-wide ROW that would be graded, trenched, and filled, resulting in up to 84.85 acres of disturbance for up to three weeks. Impacts to recreational users would occur also from fugitive dust, noise, and the presence of construction equipment within the recreation area. These impacts would alter the experience of recreational users of the Jean Lake/Roach Lake Special Recreation Management Area. While impacts to this resource would be temporary, the nature of the construction activities within the recreation area would be intense. Construction activities have the potential to cause permanent changes to the lakebed by altering the pre-existing contours of the surface.

Pacific Crest Trail

The Proposed Project would cross the Pacific Crest Trail near MP-25. Because the Proposed Project would cross the trail, the area of direct disturbance would only comprise the 100 foot width of the construction area crossing the trail, which is less than 20 feet in width. However, the existence of the construction area would effectively preclude hikers from crossing on the trail from one side of the construction area to the other. Mitigation for this adverse effect is identified below.

Summary and Mitigation Measures

These impacts would be a direct, adverse impact of the Proposed Project. The impact would be temporary, lasting only through the three-week construction window at each location. To reduce or avoid these direct, adverse impacts to recreational areas, the following mitigation measures would be implemented:

- **MM REC-1a: Limit Construction Workspace in Recreation Areas.** Construction activities would temporarily disrupt recreational activities on the following designated recreation areas: Stoddard Valley OHV Area, Ivanpah Dry Lake, and Jean Lake/Roach Lake Special Recreation Management Area. The Applicant shall reduce impacts to these recreation areas by confining construction activities to a reduced 75 foot construction ROW in designated recreation areas. Additionally, no staging areas or additional workspaces shall be permitted on or adjacent to these recreation resources.
- **MM REC-1b: Construction Scheduling.** Construction activities in recreational areas will be scheduled at least 4 weeks in advance with the appropriate BLM office or County, and additional measures or scheduling parameters may apply to minimize or avoid conflicts with scheduled recreational activities.
- **MM REC-1c: Restoration of Ivanpah Dry Lake.** The Proposed Project would temporarily disrupt recreational activities at Ivanpah Dry Lake. After construction of the Proposed Project, the Applicant shall restore the surface of Ivanpah Dry Lake to its pre-construction condition. Because the dry lake is used for sailing/kite bugging, the restoration of the resource shall include laser leveling the surface of the dry lake to ensure that pre-construction contours are restored. The Applicant shall conduct similar restoration efforts one year after construction to ensure that pre-construction contours are maintained.
- **MM REC-1d: Restoration of Jean Lake/Roach Lake Special Recreation Management Area.** The Proposed Project would temporarily disrupt recreational activities at Jean Lake/Roach Lake Special Recreation Management Area. After construction of the Proposed Project, the Applicant shall restore the surface of Jean Lake/Roach Lake Special Recreation Management Area to its pre-construction condition. Because the dry lake is used for recreational activities, the restoration of the resource shall include leveling the surface of the dry lake to ensure that pre-construction contours are restored. The Applicant shall conduct similar restoration efforts one year after construction to ensure that pre-construction contours are maintained.
- **MM REC-1e: Reduction of Fugitive Dust.** Construction activities associated with the Proposed Project would generate fugitive dust. To limit the spread of fugitive dust within designated recreation areas, the Applicant shall increase the use of watering trucks within these areas. A complete analysis of air quality impacts from fugitive dust generation and additional measures to reduce its spread outside of recreation areas can be found in Section 3.6, Air Quality.
- **MM REC-1f: Reroute Existing Trails to Maintain Access.** Construction activities associated with the Proposed Project would disrupt access to Sorrel Trail. During construction of the Proposed Project, the Applicant shall temporarily reroute impacted

roads that are crossed by the Proposed Project (Tables 3.14-1 and 3.14-2) to areas that are not under construction. The Applicant shall post signage at all access points to notify recreational users of construction activities and schedules, and safely detour recreational users away from construction activities.

- **MM REC-1g: Maintain Access to Recreation Areas.** Construction activities associated with the Proposed Project would temporarily disrupt access to these recreation areas. The Applicant shall prepare temporary alternative access points for the County recreation areas during Proposed Project construction. The Applicant shall post signs in and around these areas one month in advance of Proposed Project construction to notify users of the Proposed Project schedule and to direct them to new temporary access points. These signs shall be maintained by the Applicant throughout the construction phase of the Proposed Project. After construction activities cease, the Applicant shall remove all signage and restore the temporary access points to their pre-construction condition.

  If an alternate access point to a recreation area cannot be created, the Applicant shall maintain access by constructing temporary bridges where the construction ROW crosses access roads. Traffic monitors shall ensure that recreational users are alerted of construction activities and cross the construction area safely. After construction of the Proposed Project, the Applicant shall remove the temporary bridges and restore the area to its pre-construction condition.

- **MM REC-1h: Restoration of Road and Trail Crossings.** After construction activities, the Applicant shall restore all road and trail crossings to their pre-construction condition under the direction of the land owner or land manager. Applicant shall also restore all areas used as detours to their pre-construction condition to the satisfaction of the landowner. See Section 3.16, Transportation and Traffic.
- **MM REC-1i: Restrict Construction Dates at Pacific Crest Trail.** Construction of the portion of the Proposed Project crossing at the Pacific Crest Trail (PCT) would not occur during high season, which is from April 1 to June 30.

Implementation of these mitigation measures would reduce the magnitude of the impacts at each location. However, residual impacts would remain after mitigation, as there would still be some disruption of access. All impacts, including the residual impacts, would cease following completion of construction.

Impact REC-2: Increase Access to Previously Undisturbed Areas (Back Country)

The Proposed Project would impact land managed by the BLM as limited use areas and by the USFS as roadless areas. Recreational users of these areas have the expectation that lands maintained as limited use would only include designated access routes. Roadless areas would be devoid of OHV traffic and other mechanized equipment. Construction activities associated with the Proposed Project would temporarily impact recreational users by introducing mechanized equipment, noise, and fugitive dust into these roadless areas. Furthermore, the Proposed Project would create a 50 foot wide permanent ROW that would be maintained by the Applicant in a limited use area and across roadless areas. In some locations a 10-foot-wide permanent road would be maintained by the Applicant. By creating new access roads in previously undisturbed areas, the Proposed Project could provide means for unauthorized users to access areas that were previously inaccessible.

This impact would be an indirect, but adverse, impact of the Proposed Project. The impact would be permanent, as the newly developed access roads would be permanent. Therefore, even with mitigation, the potential for impacts would remain, and would be a residual effect under NEPA.

- **MM REC-2a: Deter OHV Use During Reclamation Activities.** Construction activities associated with the Proposed Project would create a 50-foot wide corridor outside of the existing designated route network that would take some time to revegetate. To deter OHV users from using the ROW corridor as an illegal OHV route during revegetation activities, resulting in degradation to environmental resources, including recreational values, the Applicant shall install impediments to OHV traffic where the Proposed Project provides unauthorized access that crosses designated OHV routes. The Applicant shall work with the BLM, USFS, and private landowners to limit other ROW access points to illegal routes. Methods to deter OHV use at these access points shall include, but are not limited to, placing large rocks and slash on the ROW to blend in with natural vegetation; installation of erosion control measures; and/or installing blockades or earthen berms. A monitoring plan would be developed to determine these measures' effectiveness.
- **MM REC-2b: Deter OHV Use After Reclamation Activities.** The Applicant shall include in the reclamation plan measures such as gates and fences at the request of the landowner or land manager to deter unauthorized access from major roads or routes to and use of the permanent 10-foot ROW access road, unless the roads are located in OHV Open Areas.

Impact REC-3: Increased Use of Recreation Facilities

Construction activities associated with the Proposed Project would require additional construction personnel from outside of the region that could use existing local recreation areas and facilities. Approximately 550 to 660 workers would be involved in the pipeline's construction; of that number, 45 percent are expected to be local residents. The remaining 250-300 non-residential workers would be working at several locations (spreads) located along the Proposed Project and potentially could use nearby recreation facilities. Some facilities may see an increase in use, but for the purposes of CEQA, impacts to recreation facilities resulting from construction of the Proposed Project would be less than significant. The Proposed Project would not result in the construction or expansion of any recreational facilities.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to recreation associated with the seven route variations are described below:

The locations of designated recreational facilities within one mile of the Proposed Project route were provided in Tables 3.14-1, 3.14-2, 3-14.3, and 3-14.4. Of those facilities, the ones which would have a different relationship to the pipeline location under Alternative 2 include Jerry Eaves and Birdsall Parks in Rialto, the PCT at the Wagon Train Road location, and the All American Sports Park in Las Vegas. The specific changes to recreation impacts associated with those facilities are discussed below.

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to recreation. Neither segment would restrict access to recreational facilities in this area, and neither route would involve construction of new access roads that could provide access for unauthorized users to undisturbed areas. Therefore, the potential recreational impacts associated with the Bloomington route would be the same as those identified for the Proposed Project.

Rialto Alternative

The Proposed route in the Rialto Alternative area passes adjacent to Jerry Eaves Park and Birdsall Park, and would temporarily interfere with access to those parks. Although those impacts under the Proposed Project would be mitigated, the Alternative route in this area would avoid these potential impacts entirely. Neither route would involve construction of new access roads that could provide access for unauthorized users to undisturbed areas. Overall, the Rialto Alternative route would have fewer impacts to recreation resources than the Proposed Project.

Wagon Train Road Alternative

Both the Proposed route and the Alternative route in the Wagon Train Road area would cross the PCT, and would interfere with the normal flow of hiking traffic on that trail. The Proposed Project and the Alternative route would cross the trail at different locations, but the level of the impact would be the same at either location. This impact would be reduced through implementation of mitigation measures REC MM-1a, MM-1b, MM-1e, MM-1f, MM-1h, and MM-1i.

The primary difference between the Proposed route and the Wagon Train Road HDD Alternative route would potentially be that the Proposed route could increase access to undeveloped areas. The Proposed route in this area traverses approximately one mile through the unnamed riparian area on the western, undeveloped side of Interstate 15. Although construction of the Proposed Project in this area would need to comply with mitigation measure MM WTR-5 (construct using HHD under riparian area), it would still require a maintenance access road in this area. The maintenance road could potentially increase access to unauthorized routes in this area. This impact would be reduced through implementation of mitigation measures MM REC-2a and 2b. However, the impact would likely be avoided completely through the use of the Wagon Train Road Alternative HDD route.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa Alternative route, and the segment of the Proposed route that it would replace along Baldy Mesa Road, do not have any differences with respect to recreation. Neither segment would restrict access to recreational facilities in this area, and neither route would involve construction of new access roads that could provide access for unauthorized users to undisturbed areas. Therefore, the potential recreational impacts associated with the Phelan Road/Baldy Mesa route would be the same as those identified for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, do not have any differences with respect to recreation. Neither segment would restrict access to recreational facilities in this area. Although the Proposed project route would include the construction of a new maintenance road, that road would be located within a restricted area between the existing maintenance road and Interstate 15. Therefore, neither route would involve construction of new access roads that could provide access for unauthorized users to undisturbed areas. Therefore, the potential recreational impacts associated with the Zzyzx Alternative route would the same as those identified for the Proposed Project.

Baker Alternative

Neither the Proposed route or the Baker Alternative route would restrict access to recreational facilities in this area. However, the Alternative route in this area would be located primarily along Interstate 15, along a transmission line ROW, and then along streets within the town of Baker. With this Alternative route, there would be no potential for increasing access to undeveloped areas for unauthorized users. The Proposed route, which would require construction of a new maintenance road in an undeveloped area, would have the potential to increase access to undeveloped areas for unauthorized users. This impact would be reduced through implementation of mitigation measures MM-2a and 2b. However, the impact would likely be avoided completely through the use of the Baker Alternative route.

Silver Lake Pump Station Alternative

The alternative and Proposed Action locations for the proposed Silver Lake Pump Station do not have any differences with respect to recreation. Neither location would restrict access to recreational facilities in this area, and neither location would involve construction of new access roads that could provide access for unauthorized users to undisturbed areas. Therefore, the potential recreational impacts associated with the Silver Lake Pump Station Alternative location would be the same as those identified for the Proposed Project.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation could have a higher potential to impact access to recreation than Proposed Project route in this area. This is because the Alternative route would pass directly across from the All American Sports Park, which is located at the corner of Sunset and Las Vegas Boulevard. The Proposed Project route does not pass near any designated recreation facilities. This impact would be reduced through implementation of mitigation measures REC MM-1a, MM-1b, MM-1e, MM-1f, MM-1h, and MM-1i, but could be avoided altogether through the Proposed Project route.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to recreation.

Summary

Overall, Alternative 2 would have a reduced level of impacts as compared to the Proposed Project. Adoption of the Rialto Alternative route would avoid potential access restrictions to Jerry Eaves and Birdsall Parks. Adoption of the Wagon Train Horizontal Directional Drilling (HDD) and Baker Alternative routes would reduce the potential for increasing access to undeveloped areas for unauthorized users. Adoption of the Sunset Lateral Alternative route could potentially interfere with access to the All American Sports Park. This impact, although direct and adverse, would be temporary, and would be mitigated through mitigation measures REC MM-1a, MM-1b, MM-1e, MM-1f, MM-1h, and MM-1i.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative location, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. With respect to recreation impacts, Alternative 3 would incorporate the reduced potential impacts to recreation associated with avoidance of Jerry Eaves and Birdsall parks in the Rialto Alternative, and the reduced potential for increased access to undeveloped areas associated with the Wagon Train Road HDD Alternative. However, the reduced impacts associated with the Baker Alternative route would not be adopted. Also, like Alternative 2, Alternative 3 would increase the potential for restricting access to the All American Sports Park.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure would be installed. No ground-disturbing activities would take place and potential impacts to recreation resulting from current activities on the existing pipelines would remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems would be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines would remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, CA to Las Vegas, NV. No recreation impacts are associated with the current operations.

For the purposes of CEQA, no significant impacts to recreation would result if the No Project Alternative is adopted.

3.14.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.14-5, there are differences in impacts based on the route variations.

Table 3.14-5 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
Temporary restriction of access during construction. Potential increase of access to previously undisturbed areas through new maintenance roads. Both impacts to be mitigated.	Would avoid some recreation areas (parks in Rialto), but could affect access to park in Las Vegas. Potential increase of access to previously undisturbed areas through new maintenance roads. Both impacts to be mitigated.	Would avoid some recreation areas (parks in Rialto), but could affect access to park in Las Vegas. Potential increase of access to previously undisturbed areas through new maintenance roads. Both impacts to be mitigated.	No impacts

3.14.4 Summary of Mitigation

A complete list of mitigation measures proposed for the Proposed Project is presented by impact in Table 3.14-6. The agency responsible for overseeing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.14-6 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Impact REC-1: *Disrupt Recreation Activities in Designated Recreation Areas*	**MM REC-1a: Limit Construction Workspace in Recreation Areas.** **MM REC-1b: Construction Scheduling.** **MM REC-1c: Restoration of Ivanpah Dry Lake.** **MM REC-1d: Restoration of Jean Lake/Roach Lake Special Recreation Management Area.** **MM REC-1e: Reduction of Fugitive Dust.** **MM REC-1f: Reroute Existing Trails to Maintain Access.** **MM REC-1g: Maintain Access to Recreation Areas.** **MM REC-1h: Restoration of Road and Trail Crossings.** **MM REC-1i: Restrict Construction Dates at Pacific Crest Trail.**	In locations as specified in mitigation measures (MM).	Bureau of Land Management (BLM), San Bernardino County, United States Forest Service (USFS)	Pre-construction and during construction
Impact REC-2: ***Increase Access to Previously Undisturbed Areas (Back Country)***	**MM REC-2a: Deter OHV Use During Reclamation Activities.** **MM REC-2b: Deter OHV Use After Reclamation Activities.**	In locations as specified in MM.	BLM, San Bernardino County, USFS	Post-construction

References

Bureau of Land Management (BLM). 1980. *California Desert Conservation Area Plan*. December.

Bureau of Land Management (BLM). 1998. *Las Vegas Resource Management Plan*. December.

City of Colton. 1987. *General Plan*, Open Space and Conservation Element.

Clark County. 2004. *Enterprise Land Use Plan*.

Clark County. 2005. *Winchester-Paradise Land Use Plan*.

Clark County. 2008. *South County Land Use Plan*. August 20.

County of San Bernardino. 2006. 2006-2007 County Business Plan.

County of San Bernardino, 2007. General Plan.

Nevada Division of State Parks. 2003. *Statewide Comprehensive Outdoor Recreation Plan* (SCORP). http://www.parks.nv.gov/scorp.htm

San Bernardino Associated Governments. 2001. *San Bernardino County Non-Motorized Transportation Plan*, 2001 Update. June 6.

United States Forest Service (USFS). 1990. Recreation Opportunity Spectrum Primer and Field Guide, R6-REC-021-90, April.

United States Forest Service (USFS). 2005a. "Recreational Opportunity Spectrum" (map). *San Bernardino National Forest North: Final Land Management Plan*. September.

United States Forest Service (USFS). 2005b. *Final EIS: Land Management Plans for Angeles National Forest, Cleveland National Forest, Los Padres National Forest, and San Bernardino National Forest*. September.

United States Forest Service (USFS). 2007. San Bernardino National Forest Five Year Proposed Program of Work and Programmatic Effects of Implementation, September.

Personal Communications

Ahrens, Mike. 2009. Off-Highway Vehicle Coordinator, BLM Needles Field Office, Telephone communication with Emery McCaffery, Ecology and Environment, Inc., San Diego, California. April.

Bernard, Nick. 2009. Outdoor Recreation Planner, Las Vegas – Southern Nevada BLM Field Office. Telephone conversation with Emery McCaffery, Ecology and Environment, Inc., San Diego, California. April.

Blaine, Larry. 2009. Outdoor Recreation Planner, BLM Barstow Field Office. Telephone conversation with Emery McCaffery, Ecology and Environment, Inc., San Diego, California. April.

3.15 Social and Economic Conditions

This section describes the social and economic conditions that the Proposed Project may affect. It also discloses potential impacts, both permanent and temporary, to social and economic conditions, including impacts to rural, urban, low income, and minority populations.

During the scoping period, government agencies and members of the public identified the following issues and concerns related to social and economic conditions: (1) analysis of applicable growth management policies and the most current Southern California population, housing, and employment forecasts through 2035 against Proposed Project forecasts; (2) consideration of growth management policies related to improving the Southern California region's quality of life as well as policies related to social, political, and cultural equity; and (3) impacts to property value and community income in the Southern California region. These comments are addressed in Section 3.15.3, Environmental Consequences.

The following socioeconomic profile describes the region of influence (ROI) for the Proposed Project. The ROI includes areas adjacent to and traversed by the Proposed Project. Most of these lands within San Bernardino County are part of the San Bernardino-Riverside-Ontario Metropolitan Statistical Area (specifically moving along the I-I5 corridor), with the remaining pipeline segment located in Clark County, Nevada. The communities that would host and be traversed by project assets originate in the City of Colton and extend through the incorporated cities of Rialto, Victorville, Adelanto, and Barstow in California, and Jean, Henderson, and Las Vegas in Nevada. The pipeline route traverses in a northeasterly direction across rural San Bernardino County, moves into Clark County, Nevada, and terminates just outside of Las Vegas. Socioeconomic data characterizing these communities appear below. Construction of the pipeline, lateral(s), pump station(s), station upgrades and facility operations may impact the ROI. The socioeconomics profile of the ROI provides an overview of the land area; natural resources; population and demographics; and economy.

3.15.1 Affected Environment

This section describes the social and economic environment in the Proposed Project area. The pipeline right-of-way (ROW) primarily traverses undeveloped lands administered by the Bureau of Land Management (BLM) Barstow, Needles, and Las Vegas Field Offices. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States Forest Service (USFS) and the Department of Defense (DoD). Lands under the jurisdiction of the State of California, San Bernardino County, and Clark County are also crossed by the pipeline ROW. The communities affected by project assets originate in the City of Colton and extend through the incorporated cities of Rialto, Victorville, Adelanto, and Barstow in California, and Henderson and Las Vegas in Nevada.. The California communities are part of the San Bernardino-Riverside-Ontario Metropolitan Statistical Area.

3.15.1.1 Population and Population Density

Table 3.15-1 shows the population levels, recent growth rates and population density statistics (i.e., persons per square mile) in 2000 and 2009 for communities crossed by the pipeline ROI. San Bernardino and Riverside counties are part of the San Bernardino-Riverside-Ontario Metropolitan Statistical Area. As shown on Table 3.15-1 population densities in the communities traversed by the proposed pipeline ROI widely vary. Some communities such as Jean City, which had an estimated population density of only 27 persons per square mile, are very rural in nature. Other communities such as the City of Las Vegas or the City of Rialto, which had estimated 2009 population densities of 5,023 and 4,700 persons per square mile, respectively, are very urban in nature.

Table 3.15-1 Population Levels, Growth Rates, and Density for Communities Within or Near the Proposed Project Area

	Population Levels		Population Growth Rates		Population Density		
Area	**2000**	**2009 est.**	**2000-2009**	**Average Annual Growth**	**2000**	**2009 est.**	**Land Area (square miles)**
California	33,871,648	36,961,664	9.1%	1.0%	217	237	155,959
San Bernardino County	1,709,434	2,017,673	18.0%	2.0%	85	101	20,053
San Bernardino (city)	185,401	198,411	7.0%	0.8%	3,153	3,421	58
Colton (city)	47,662	50,495	5.9%	0.7%	3,154	3,366	15
Rialto (city)	91,873	98,702	7.4%	0.8%	4,201	4,700	21
Hesperia (city)	62,582	86,194	37.7%	4.2%	929	1,286	67
Victorville (city)	64,029	110,921	73.2%	8.1%	880	1,541	72
Adelanto (city)	18,130	28,403	56.7%	6.3%	357	557	51
Barstow (city)	21,119	24,521	16.1%	1.79%	608	701	35
Baker (unincorporated)[a]	914	735	-19.6%	-2.18%	N/A	N/A	N/A
Nevada	1,998,257	2,643,085	32.3%	3.59%	18	24	109,826
Clark County	1,375,765	1,902,834	38.3%	4.26%	174	241	7,910
Jean (city)[b]	2,478	9,189	270.8%	45.1%	7	27	340
Las Vegas (city)	478,434	567,641	18.6%	2.07%	4,222	5,023	113

Source: Census 2000 and 2009 Population Estimates (United States Census Bureau, 2011a).

a) 2009 est. for Baker, California, is not available. 2010 population count from Census 2010 is presented (United States Census Bureau, 2011b).

b) 2009 est. for Jean, Nevada, is not available. 2006 population estimate from 2007 American Community Survey is presented (United States Census Bureau, 2007).

N/A = not available or not applicable

In recent years, the San Bernardino-Riverside-Ontario Metropolitan Statistical Area has been one of the fastest growing metropolitan areas in California and traditional rural/agricultural areas have been absorbed by urban sprawl as populations have migrated away from relatively more expensive coastal regions. San Bernardino County is also the largest county by land area in the continental United States and is mostly covered by desert, although the western starting point of the pipeline is in a coastally influenced Mediterranean climate area.

San Bernardino County is home to about two million people and comprises 13 percent of California's total land area. The county's population grew by an annual average rate of 2.0 percent between 2000 and 2009, surpassing California's growth rate of 1.0 percent. Along the ROI in San Bernardino County, the Cities of Hesperia, Victorville, and Adelanto have been growing the fastest, with annual growth rates of 4 percent or higher.

Clark County, Nevada is home to 1.9 million people and the population has grown at a 4.26 percent average annual rate in recent years. Bedroom communities of Las Vegas, such as Jean, have attracted substantial population migration in recent years. Figure 3.15-1 shows the census tracts that are crossed by the Proposed Project route.

3.15.1.2 Income

Median household incomes provide an indication of the affluence of an area. Total personal income is another proxy for the total size of the regional economy that would host the Proposed Project since regional Gross Domestic Product (GDP) is not available at the county level. Under the economic impact section, projected economic activity related to the construction and operations phases is assessed. The incomes and economy section provides background necessary for stakeholders to assess economic impacts compared to a baseline measure and can be used to consider the relative scale and magnitude of Proposed Project impacts vis-à-vis other economic development activities within the region.

Table 3.15-2 provides data on median household income for the counties and cities that would be crossed by the pipeline. The most recent income data were available at the county level and are reported below. Total personal income is shown for 2009 and is only available at the state and county level. In 2007 to 2009, the median household income for the United States was $51,369. San Bernardino County's median household income was 107 percent of the United States average while Clark County's income was 108 percent of the national average.

Table 3.15-2 Median Household Income for Communities Traversed by the Proposed Pipeline ROW

Area	2007 to 2009 Median Household Income	2009 Total Personal Income (State/County)
California	$60,422	$1,566,999,086,000
San Bernardino County, CA	$54,922	$59,740,791,000
San Bernardino (city)	$39,251	N/A
Colton (city)	$45,396	N/A
Rialto (city)	$50,487	N/A
Hesperia (city)	$49,086	N/A
Victorville (city)	$51,223	N/A
Adelanto (city)	$39,645	N/A
Barstow (city)	$47,265	N/A
Baker (unincorporated) [a]	$30,545	N/A
Nevada	$55,322	$ 99,565,784,000
Clark County, NV	$55,767	$69,854,528,000
Jean (city) [a]	$42,023	N/A
Las Vegas (city)	$53,434	N/A

Sources: American Community Survey 2007 -2009 (United States Census Bureau 2010); 2009 Personal Income (Bureau of Economic Analysis 2011).

Notes:

American Community Survey estimates are based on data collected over a 3-year time period. The estimates represent the average characteristics of population and housing between January 2007 and December 2009 and do not represent a single point in time.

[a] Median household income data for municipalities marked "a" are from 1999. Data were not available for 2007-2009.

N/A – not available

Total personal income can vary between 70 to 80 percent of the total value of GDP, and is reproduced here (as a proxy measure for GDP) to provide an indication of the relative sizes of the regional economies that would host Proposed Project assets. The massive size of California's economy is apparent in the table. California's GDP was $1.8 trillion in 2007 and represented about 13 percent of the National GDP. California's personal income was $1.6 trillion in 2009. San Bernardino County's total personal income of $59.7 billion was 60 percent of the state of Nevada total in 2009. Nevada's GDP was $127 billion in 2007 (Bureau of

Economic Analysis 2008). The table also shows that Clark County (dominated by the Las Vegas-Paradise Metropolitan Statistical Area) personal income is 70 percent of the State of Nevada total.

3.15.1.3 Employment and Economic Activity

Table 3.15-3 shows the size of the labor force, current employment levels and the number of unemployed by area.

Table 3.15-3 Labor Force, Employment, and Unemployment by Area

	As of April 2011			Unemployment Rate (percent)	
Area	**Labor Force**	**Employed**	**No. of Unemployed**	**Apr. 11**	**Apr. 10**
California	18,030,400	15,925,800	2,104,500	11.7	12.2
San Bernardino County	839,500	728,200	111,300	13.3	13.9
San Bernardino (city)	83,000	68,400	14,700	17.7	18.5
Colton (city)	24,400	20,900	3,500	14.3	15.0
Rialto (city)	43,000	35,800	7,300	16.9	17.7
Hesperia (city)	30,000	24,900	5,100	17.0	17.7
Victorville (city)	29,400	24,700	4,700	15.9	16.7
Adelanto (city)	6,700	5,400	1,400	20.2	21.1
Barstow (city)	10,400	8,700	1,700	16.5	17.2
Nevada	1,306,532	1,150,884	155,648	11.9	14.9
Clark County	939,368	826,028	113,340	12.1	15.1

Sources: California Employment Development Department 2011, Nevada Department of Employment, Training and Rehabilitation 2011.

The communities profiled in Table 3.15-3 had reductions of between 0.5 percent and 3.0 percent in their unemployment rates between April of 2010 and 2011. The State of Nevada and Clark County have fared relatively better than the San Bernardino-Riverside-Ontario Metropolitan Statistical Area in terms of losing fewer jobs over the last year.

Economy

Table 3.15-4 shows the structure of the workforce for San Bernardino and Clark counties compared to their states. San Bernardino County has become a popular center for logistics hubs, retail distribution, and warehousing. Cargo is transferred to and from the ports of Los Angeles and Long Beach to local warehouses and distribution centers before transport to other markets in California and the Interior West. The region is supported by the Southern California Logistics Airport, Ontario International Airport, two major transcontinental railroads with intermodal facilities and classification yards, and is supported by multiple interstate highways. Table 3.15-4 shows that a relatively larger proportion of the workforce is engaged in the transportation and warehousing, and utilities sector (7.8 percent) compared to the California state average of 4.8 percent of the workforce.

In Clark County, over a quarter of the civilian workforce (27.8 percent) is employed in the arts, entertainment, and recreation, accommodation, and food services industry (see Table 3.15-4). Las Vegas and Clark County as a whole comprise a major tourist and resort destination. The recreation industry is a source of employment and generator of tax revenues required to sustain public services. Recent data show that 24.3 percent of the employed labor force worked in hotel and gaming related industries (Las Vegas Convention and Visitors Authority [LVCVA]

2008). Combined employment for resorts/casinos totaled 51,250 or 5.5 percent of the County total population of 933,200 in 2008 (Clark County 2008).

Table 3.15-4 Comparison of Civilian Workforce by Industry Sectors (2007 to 2009)

Industry	California	%	San Bernardino County	%	Nevada	%	Clark County	%
Civilian employed population 16 years and over	16,719,412		830,879		1,246,177		900,198	
Agriculture, forestry, fishing and hunting, and mining	354,097	2.1%	6,182	0.7%	17,462	1.4%	2,492	0.3%
Construction	1,201,640	7.2%	73,917	8.9%	120,680	9.7%	90,084	10.0%
Manufacturing	1,730,976	10.4%	84,188	10.1%	54,193	4.3%	30,277	3.4%
Wholesale trade	559,337	3.3%	33,549	4.0%	28,231	2.3%	18,287	2.0%
Retail trade	1,832,557	11.0%	105,268	12.7%	145,160	11.6%	101,477	11.3%
Transportation and warehousing, and utilities	799,552	4.8%	64,629	7.8%	63,111	5.1%	43,916	4.9%
Information	509,109	3.0%	15,783	1.9%	20,071	1.6%	14,586	1.6%
Finance and insurance, and real estate and rental and leasing	1,163,332	7.0%	49,900	5.6%	80,972	6.5%	62,063	6.9%
Professional, scientific, and management, and administrative and waste management services	2,056,082	12.3%	69,557	8.4%	127,869	10.3%	96,509	10.7%
Educational services, and health care and social assistance	3,327,289	19.9%	174,051	20.9%	176,977	14.2%	118,065	13.1%
Arts, entertainment, and recreation, and accommodation, and food services	1,554,729	9.3%	67,971	8.2%	303,329	24.3%	249,817	27.8%
Other services, except public administration	875,383	5.2%	41,870	5.0%	51,219	4.1%	38,214	4.2%
Public administration	755,329	4.5%	47,014	5.7%	56,903	4.6%	34,411	3.8%

Source: American Community Survey 2007-2009 (United States Census Bureau 2010).

About 39 million visitors came to Clark County in 2007. Tourists accounted for 33 million of this total (84 percent) while the remaining 6.2 million were convention delegates (16 percent). Visitors provide a substantial economic stimulus to the region through secondary effects from spending on goods and services. Visitors to Las Vegas contributed nearly $41.6 billion to the area economy in 2007. Gaming revenues alone were $11 billion in 2007 (LVCVA 2008).

Supporting and sustaining the Las Vegas economy are the McCarran International Airport, the North Las Vegas Airport, and the Henderson Executive Airport. In addition, an extensive fleet of rental cars is required to accommodate the arrivals. In 2008 combined passenger enplanements and deplanements at the McCarran International Airport were 40.2 million passengers. Table 3.15-5 shows the combined airport passenger activity for 2010 for the Clark County aviation facilities.

Table 3.15-5 Passenger Activity at Clark County, Nevada Airports, 2010 Combined Passenger Enplanements/Deplanements

Airport	Annual Passengers	% of Total	Average Daily Passengers
North Las Vegas Airport	305,110	0.8%	836
McCarran International Airport	39,757,359	98.8%	108,924

International Passengers	2,253,999	5.6%	6,175
Henderson Executive Airport	171,324	0.4%	469
Total:	40,233,793	100.0%	110,230

Source: McCarran International Airport 2011

3.15.1.4 Housing

The quantity and quality of the existing housing stock, particularly the availability of temporary accommodations along the pipeline right of way are necessary to assess the impact of temporary worker or permanent employee migrations within the ROI. The data contained in Tables 3.15-6 and 3.15-7 provide a snap shot of conditions from the American Community Housing Survey's sampling program. Table 3.15-6 shows the vacancy rates for both housing units and rentals for major areas (municipalities) near the pipeline right of way/corridor.

San Bernardino County generally has a higher proportion of vacant units compared to statewide averages, while Clark County's share of vacant units mirrors the state average. For major municipalities along the pipeline right of way, Table 3.15-6 shows that there are thousands of vacant units between Colton and Barstow, California. The distribution of vacant housing units by type is shown in Table 3.15-7.

Table 3.15-6 Vacancy Rates and Total Vacant Units by Area (2007 to 2009)

Area	Vacancy Rate, Housing Units	Number of Vacant Units	Vacancy Rate, Rentals
California	8.9%	1,186,253	5.1%
San Bernardino County, CA	14.4%	98,716	7.2%
San Bernardino (city)	9.1%	5,690	7.5%
Colton (city)	9.2%	1,507	11.1%
Rialto (city)	8.7%	2,249	8.0%
Hesperia (city)	8.8%	2,295	5.8%
Victorville (city)	13.3%	4,664	7.4%
Adelanto (city)	17.7%	1,415	8.9%
Barstow (city)	18.5%	1,854	12.0%
Nevada	14.8%	165,618	11.4%
Clark County	14.8%	119,335	11.2%
Las Vegas (city)	13.1%	30,905	12.4%

Source: American Community Survey 2007-2009 (United States Census Bureau 2010).

Table 3.15-7 Distribution of Vacant Housing Units by Type for Municipalities Along the ROI (2007 to 2009)

Area	Total Vacant:	For rent	Rented, not occupied	For sale only	Sold, not occupied	For seasonal, recreational, or occasional use	For migrant workers	Other vacant
California	1,186,253	282,876	62,664	176,802	47,886	319,529	2,887	293,609
San Bernardino County	98,716	16,524	2,547	14,131	3,312	42,104	133	19,965
San Bernardino (city)	5,690	2,247	87	1,432	259	153	0	1,512
Colton (city)	1,507	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rialto (city)	2,249	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hesperia (city)	2,295	420	55	661	46	181	0	932
Victorville (city)	4,664	891	98	1,345	172	442	0	571,736
Adelanto (city)	1,415	257	0	574	264	110	0	210
Barstow (city)	1,854	574	159	118	77	223	0	703

Table 3.15-7 Distribution of Vacant Housing Units by Type for Municipalities Along the ROI (2007 to 2009)

Area	Total Vacant:	For rent	Rented, not occupied	For sale only	Sold, not occupied	For seasonal, recreational, or occasional use	For migrant workers	Other vacant
Nevada	165,618	50,342	6,728	29,341	8,179	36,172	261	34,595
Clark County	119,335	37,456	5,531	23,149	6,596	22,909	100	23,594
Las Vegas (city)	30,905	12,705	1000	5,689	1,318	4,020	0	6,173

Source: American Community Survey 2007-2009 (United States Census Bureau 2010).
N/A – not available

3.15.1.5 Environmental Justice: Racial Composition and Minority Populations

The racial composition of each county, municipality, and census tract near the Proposed Project area was assessed to determine whether these communities were composed of significantly higher proportions of minority and low-income populations than surrounding areas.

Guidance from the Council on Environmental Quality states that "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" (Council on Environmental Quality 1997).

Demographic data were gathered for census tracts that would be crossed by the pipeline. The census tract was determined to be an appropriate geographic unit because the presence of distinct minority communities would not be concealed or diluted by this level of aggregation. To assess the composition of the communities in immediate proximity to the pipeline, census tract, county and state median household income, poverty indicators and minority population proportions were reviewed. The minority ratio aggregation was defined to include individuals who were members of the following groups: American Indian or Alaskan Native; Asian, Native Hawaiian or Other Pacific Islander; Black, and Hispanic. Hispanics can be of any race. Table 3.15-8 presents the Environmental Justice racial composition indicators for each municipality along the pipeline corridor while Table 3.15-9 shows the racial composition by the smaller census tract level.

Tables 3.15-8 and 3.15-9 compare broader and narrower geographic areas for two points in time. Table 3.15-8 is more recent and shows data for 2007 to 2009, while Table 3.15-9 is from the 2000 Census. More recent data were available for county and municipality updates and is reproduced in Table 3.15-8. Table 3.15-7, at the census tract level, reflects an older dataset. Comparing the two tables shows that there have been some changes in composition, at the county level as a whole. However, as the minority aggregations show for the municipalities along the ROI, the presence of these communities is still strong and the area is a diverse place.

As shown on Table 3.15-9, of the 20 census tracts traversed by the ROI in San Bernardino County, nine had a greater percent of residents from a minority group than the average of 53.5 percent for the county as a whole. In contrast, none of the six census tracts traversed by the ROI in Clark County had a greater percentage of minority residents than the average of 37.1 percent for Clark County as a whole (see Table 3.15-9).

Table 3.15-8 Racial Composition of Counties and Municipalities along the ROI

County/City/Area	Total:	White	Black	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or more races	Hispanic or Latino (any race)	Minority Aggregation, % [a]
California	100%	61.8%	6.1%	0.8%	12.4%	0.4%	14.9%	3.6%	36.5%	38.2%
San Bernardino County, CA	100%	60.1%	8.8%	1.1%	5.9%	0.3%	19.6%	4.3%	47.5%	40.0%
San Bernardino (city)	100%	40.3%	15.8%	0.9%	4.0%	0.2%	35.5%	3.4%	58.2%	59.8%
Colton (city)	100%	46.5%	11.5%	1.9%	5.6%	0.0%	30.2%	4.3%	66.5%	53.5%
Rialto (city)	100%	56.2%	15.7%	1.0%	2.2%	0.1%	19.8%	5.0%	66.3%	43.8%
Hesperia (city)	100%	77.4%	6.0%	1.3%	2.0%	0.2%	9.9%	3.2%	49.0%	22.6%
Victorville (city)	100%	65.2%	16.0%	1.3%	3.0%	0.1%	9.9%	4.5%	45.8%	34.8%
Adelanto (city)	100%	58.6%	18.3%	1.1%	2.3%	0.2%	14.9%	4.6%	58.5%	41.4%
Barstow (city)	100%	61.6%	16.7%	1.5%	1.3%	1.8%	9.6%	7.5%	35.7%	38.4%
Nevada	100%	75.5%	7.5%	1.2%	6.4%	0.5%	5.7%	3.2%	25.9%	24.5%
Clark County, NV	100%	72.2%	9.8%	0.7%	7.5%	0.6%	5.8%	3.4%	28.7%	27.8%
Las Vegas (city)	100%	73.1%	10.5%	0.8%	5.4%	0.3%	6.1%	3.8%	30.6%	26.9%

Source: American Community Survey 2007-2009 (United States Census Bureau 2010).

Notes:

[a] Minority aggregation includes the sum of Black; Asian; American Indian and Alaskan Native; Hawaiian and other Pacific Islander; some other race; and two or more races.

American Community Survey estimates are based on data collected over a 3-year time period. The estimates represent the average characteristics of population and housing between January 2007 and December 2009 and do not represent a single point in time.

Table 3.15-9 Racial Composition of Census Tracts Along the Proposed Project Route

	From MP	To MP	Census Tract	Minority Percent [a]	White	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some other race alone	Hispanic or Latino	Two or More Races
San Bernardino County:				53.5%	44.0%	8.8%	0.6%	4.6%	0.3%	0.2%	39.2%	2.5%
1	0.00	2.49	004000	70.0%	28.7%	3.3%	0.5%	1.1%	0.1%	0.0%	64.8%	1.3%
2	2.49	3.54	003602	75.4%	22.7%	12.4%	0.5%	2.7%	0.2%	0.1%	59.5%	1.9%
3	3.54	4.21	003601	77.7%	20.4%	16.5%	0.5%	3.2%	0.2%	0.2%	57.2%	1.9%
4	5.04	6.54	003501	80.3%	17.5%	20.5%	0.3%	1.8%	0.7%	0.3%	56.7%	2.1%
5	6.54	9.01	003502	82.9%	14.8%	26.0%	0.3%	2.6%	0.3%	0.2%	53.5%	2.3%
6	9.01	9.24	002702	64.1%	33.1%	25.4%	0.4%	2.3%	0.2%	0.3%	35.4%	2.9%
7	9.24	10.24	002701	66.1%	31.1%	21.1%	0.5%	3.7%	0.4%	0.3%	40.1%	2.8%
8	16.65	17.32	004503	28.2%	67.4%	6.7%	0.9%	3.4%	0.0%	0.2%	16.9%	4.4%
9	17.32	20.36	010802	14.8%	81.8%	1.3%	1.0%	0.6%	0.1%	0.6%	11.2%	3.4%
10	20.36	20.48	009200	13.2%	83.7%	0.5%	0.6%	1.9%	0.1%	0.5%	9.6%	3.1%
11	29.74	42.32	009105	34.9%	62.7%	6.9%	0.8%	2.4%	0.3%	0.4%	24.1%	2.5%
12	42.32	47.36	009104	57.1%	40.3%	12.0%	0.7%	1.9%	0.2%	0.2%	42.1%	2.6%
13	47.36	48.87	009102	57.8%	39.3%	29.6%	0.7%	6.7%	2.2%	0.0%	18.5%	3.0%
14	54.07	67.74	011700	45.3%	52.6%	2.5%	0.8%	0.3%	0.0%	0.1%	41.6%	2.1%
15	67.74	78.46	011800	39.4%	58.5%	4.7%	1.3%	1.2%	0.5%	0.2%	31.4%	2.1%
16	78.46	78.96	012000	51.8%	44.6%	12.5%	1.8%	3.8%	1.3%	0.2%	32.1%	3.7%
17	82.88	87.08	012100	22.9%	74.3%	5.2%	1.1%	1.7%	0.1%	0.2%	14.7%	2.8%
18	87.08	88.65	011900	30.8%	66.9%	2.3%	1.3%	1.3%	0.3%	0.3%	25.3%	2.3%
19	89.45	96.69	011600	19.3%	77.9%	2.2%	0.6%	1.6%	0.1%	0.1%	14.8%	2.8%
20	96.69	195.05	010300	37.8%	57.7%	12.8%	1.2%	2.3%	0.8%	0.3%	20.5%	4.5%

Table 3.15-9 Racial Composition of Census Tracts Along the Proposed Project Route

	From MP	To MP	Census Tract	Minority Percent [a]	White	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some other race alone	Hispanic or Latino	Two or More Races
Clark County:				37.1%	60.2%	8.8%	0.6%	5.2%	0.4%	0.1%	22.0%	2.7%
21	195.05	212.04	005703	33.6%	64.4%	13.4%	0.6%	5.0%	0.2%	0.0%	14.4%	2.0%
22	212.04	223.63	005710	10.5%	88.2%	1.5%	0.4%	3.2%	0.1%	0.0%	5.2%	1.3%
23	223.63	226.40	002815	15.8%	82.6%	1.8%	0.6%	5.7%	0.4%	0.4%	6.8%	1.6%
24	226.40	229.76	005816	10.6%	87.8%	1.2%	0.4%	1.0%	0.2%	0.1%	7.7%	1.6%
25	229.76	231.57	002963	10.7%	87.0%	1.7%	0.8%	1.8%	0.0%	0.1%	6.2%	2.3%
26	231.57	233.46	002962	16.7%	81.2%	5.3%	0.7%	2.5%	0.4%	0.1%	7.9%	2.0%

Source: United States Census Bureau 2000a

Notes:

[a] Minority aggregation includes the sum of Black; Asian; American Indian and Alaskan Native; Hawaiian and other pacific islander; and some other race.

Some communities hosting the pipeline assets have minority population aggregations that are in fact majorities. Table 3.15-9 shows the county averages compared to the constituent census tracts. The county average minority proportion for San Bernardino is also high, averaging 53%. Ten out of the 20 census tracts displayed had relatively higher concentrations of minority communities, greater than 50%, while only two tracts were below 15%. Within Clark County, however, only 1 tract (community) reflected the average racial composition for the County as a whole, while the other tracts were mostly at 11%.

Several cities have populations where Hispanics are in the majority (i.e., San Bernardino, Colton, Rialto, and Adelanto). Hispanics can be of any race. The other "minority aggregation" category includes the sum of Black, Asian, American Indian and Alaskan Native, Native Hawaiian and Other Pacific Islander, or some other race. Across census tracts, minority populations are most concentrated closest to the pipeline origin in San Bernardino County.

The census tracts within Clark County that would be traversed by the pipeline are not as racially diverse as the Clark County average. The Clark County average minority proportion was 37.1 percent.

Table 3.15-10 shows the median incomes and proportions of families below the poverty level per each census tract and county. Poverty level status is determined by threshold incomes that vary with family size and the number of related children under eighteen years old. Incomes below these thresholds are classified as poverty level (Bishaw and Iceland 2003). For 1999, the latest year available by census tract, 12.6 percent of the families in San Bernardino County had incomes that were below the poverty level threshold, while 7.9 percent of Clark County, Nevada families met this status.

The median household income per each census tract is also compared to the county average in the last column of Table 3.15-10. Within San Bernardino County, census tracts 91.04 and 117 had relatively high poverty ratios (21 percent) that were significantly above the county average of 13 percent. Generally, communities with high poverty level indicators also had median family incomes below the county average. Where this is not the case, greater disparities in wealth occur.

Table 3.15-10 Income Characteristics for Census Tracts Along the Proposed Project Route

	From MP	To MP	Census Tract	Percent of Families with Incomes Below Poverty Level	Median Household Income (1999)	Income as % of County Average
	San Bernardino County:			12.6%	$42,066	100%
1	0.00	2.49	004000	19.2%	$36,569	87%
2	2.49	3.54	003602	11.1%	$45,438	108%
3	3.54	4.21	003601	15.8%	$36,948	88%
4	5.04	6.54	003501	16.0%	$37,159	88%
5	6.54	9.01	003502	17.3%	$39,380	94%
6	9.01	9.24	002702	6.8%	$53,713	128%
7	9.24	10.24	002701	5.2%	$60,167	143%
8	16.65	17.32	004503	4.8%	$71,100	169%
9	17.32	20.36	010802	8.7%	$43,019	102%
10	20.36	20.48	009200	6.1%	$50,567	120%
11	29.74	42.32	009105	5.0%	$52,566	125%
12	42.32	47.36	009104	20.7%	$33,689	80%
13	47.36	48.87	009102	N/A	N/A	N/A
14	54.07	67.74	011700	21.4%	$27,500	65%
15	67.74	78.46	011800	8.2%	$44,017	105%
16	78.46	78.96	012000	10.3%	$39,773	95%
17	82.88	87.08	012100	12.6%	$35,748	85%
18	87.08	88.65	011900	7.5%	$39,637	94%
19	89.45	96.69	011600	8.4%	$44,059	105%
20	96.69	195.05	010300	6.4%	$33,538	80%
	Clark County:			7.9%	$44,616	100%
21	195.05	212.04	005703	2.8%	$35,531	80%
22	212.04	223.63	005710	1.0%	$80,763	181%
23	223.63	226.40	002815	0.0%	$90,000	202%
24	226.40	229.76	005816	4.3%	$50,625	113%
25	229.76	231.57	002963	10.7%	$57,316	128%
26	231.57	233.46	002962	12.1%	$48,750	109%

Source: United States Census Bureau 2000b, 2000c
N/A – Not Available

3.15.1.6 Local Government Public Services

San Bernardino County provides an array of services to its residents that includes: police protection, criminal prosecution, medical and health services, education, senior citizen assistance, roads, library services, support for judicial institutions, airport service, cultural and environmental services, parks and a variety of public assistance programs. Special districts and county service areas provide services to remote geographical areas and rapidly growing communities. These services include fire protection, parks, flood control, water, sewer, street lighting and roads.

Clark County, Nevada provides a range of services to residents including fire and police protection, road maintenance and construction, animal control, parks and recreation, building inspection, water and sewer systems, county recorder, clerk, treasurer, airport, hospital, family services, social services and criminal justice (Clark County 2008).

The following sections provide more specific detail about these services that would be particularly relevant to the Proposed Project.

Fire & Emergency Medical Services

Fire department personnel and emergency medical technicians would typically be the first responders to incidents and accidents that could occur during the construction and/or operation of the proposed pipeline. Accordingly, this section of the EIS/EIR contains map figures and data for facilities that could be called upon during an emergency. Local fire departments closest to the route would need to be engaged to implement emergency response and safety plans and protocols.

An Oil Spill Response Plan has been approved by appropriate federal, state, and local agencies (including the California Department of Fish and Game and Nevada Department of Wildlife Office of Spill Prevention and Response) for the existing pipeline. The Oil Spill Response Plan provides a finalized list of emergency service providers. An Emergency Plan was also prepared to specify measures to be taken in emergency scenarios. Normally, local fire department commanders are at least initially in charge of any response.

The San Bernardino County Fire Department covers an extensive and diverse land area of about 18,000 miles in its jurisdiction. The Fire Department is organized into the following divisions (Mountain, North Desert, Victorville, South Desert and Valley Division (San Bernardino County Fire Department 2008). The division closest to the pipeline corridor is the North Desert Division. The locations of fire stations along the I-15 corridor closest to the pipeline corridor, and therefore most likely to provide first response in emergency situations, are shown on Figure 3.15-2. The locations of the fire stations are marked by the red arrow and number. Table 3.15-11 provides a list of the fire stations showing the full name, address and full time staffing. Figure 3.15-2 shows the vicinity of public facilities (e.g., police, fire, solid waste, and healthcare) to the Proposed Project area.

Table 3.15-11 Select Fire Stations Along the Proposed Project Route

Name	Address	Firefighters
North Desert Division - Baker Station 53	72734 Baker Blvd. P.O. Box 622 Baker, CA 92309	3
North Desert Division - Harvard Station 46	39059 Kathy Ln. Newberry Springs, CA 92365	3
North Desert Division – Hinkley Station 125	37284 Flower P.O. Box 218 Hinkley, CA 92347	N/A
North Desert Division - Silver Lakes / Helendale Station 4	27089 Helendale Rd. P.O. Box 911 Helendale, CA 92342	N/A
North Desert Division - Adelanto Station 321	1741 Hardy Ave. Adelanto, CA 92301	3
North Desert Division - Hesperia Station 304	15660 Eucalyptus	3

Source: San Bernardino County Fire Department 2008
N/A – Not available

3.15.1.7 Local Tax Revenues and Sources of Funding

The installation of infrastructure, such as the Calnev Pipeline, contributes assessed value to the commercial portion of the tax base for the counties traversed. To provide background context on the existing sources of funding and annual expenditures for the counties traversed, Table 3.15-12 is provided. Table 3.15-12 shows the main sources of public revenues for Clark and San Bernardino counties. Revenues for Clark County totaled $4.5 billion in 2010. Most of Clark County's revenues were derived from user fees (charges for services) and ad valorem taxes. Ad valorem (property) tax estimates during annual operation of the Proposed Project are provided in a later section.

Table 3.15-12 Local Tax Revenues and Sources of Funding, 2010

Revenue Source	Clark County	%	San Bernardino County	%
Charges for Services	$1,797,699,723	40.1%	$883,765,000	27.7%
Operating Grants and Contributions	$598,184,892	13.3%	$1,467,522,000	45.9%
Capital Grants and contributions	$317,001,142	7.1%	$25,691,000	0.8%
General Revenues	$1,774,570,337	39.5%	$816,993,000	25.6%
Ad valorem taxes	$773,972,937	17.2%	$544,106,000	17.0%
Consolidated tax	$383,416,573	8.6%	$116,963,000	3.7%
Sales and use tax	$221,418,609	4.9%	$17,894,000	0.6%
Other	$395,762,218	8.8%	$138,030,000	4.3%
Total Revenues	$4,487,456,094	100%	$3,193,971,000	100%

Sources: Clark County 2010, County of San Bernardino 2010.

Total revenues for San Bernardino County amounted to $3.2 billion in 2010. San Bernardino's main sources of revenues were derived from operating grants and contributions and from ad valorem (real and personal property) tax receipts.

3.15.1.8 Agriculture

The BLM and USFS administer and manage grazing allotments on public lands in the vicinity of the Proposed Project area (see also Lands and Realty, Section 3.10). Within California, the pipeline would traverse the BLM's Stoddard Mountain Middle and East Units within the West Mojave Planning Area. The pipeline would not cross any grazing or range allotments in Nevada. The Proposed Project would not restrict or curtail any livestock or grazing activities on these allotments.

3.15.2 Applicable Regulations, Plans, and Policies

3.15.2.1 Federal

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," addresses the potential disproportionate human health and environmental impacts that a project may have on minority and low-income communities. Environmental effects of the Proposed Project on minority and low-income communities or Native American populations must be disclosed. As a result of this Order, agencies must evaluate projects to ensure that they do not disproportionately impact any such community. If such an impact is identified, appropriate mitigation measures must be implemented. Section 3.15.1, Affected Environment, provides the background community profiles and environmental justice indicators.

BLM H-16010-1 *Land Use Planning Handbook – Appendix D, Section IV Environmental Justice Requirements* were referenced in assessing whether the Proposed Project would "adversely and disproportionately impact minority populations, low-income communities and Tribes" (BLM 2005). Standard approved methods recommended under *Environmental Justice Guidance under the National Environmental Policy Act* (Council on Environmental Quality 1997) were also followed.

3.15.2.2 Local

The ROI falls within the planning jurisdictions covered by the Southern California Association of Governments (SCAG), and also the San Bernardino Associated Governments region (San Bernardino Associated Governments 2009, SCAG 2008). For SCAG planning purposes, the growth management chapter of the Regional Comprehensive Plan and Guide (RCPG) contains policies related to improving the regional standard of living that should be considered in the socioeconomic impact analysis (SCAG 2008). Relevant policies to assessing how the Proposed Project would influence the region's standard of living, regional quality of life, and goals to provide social, political and cultural equity appear in their entirety below (SCAG 2008). Section 3.15.4, Impacts by Alternative, contains a table that compares each policy statement to the Proposed Project from the standpoint of whether the Proposed Project is consistent, non-consistent or applicable to these policies.

Regional Standard of Living

- 3.05 Encourage patterns of urban development and land use which reduce costs on infrastructure construction and make better use of existing facilities.
- 3.09 Support local jurisdictions efforts to minimize the cost of infrastructure and public service delivery, and efforts to seek new sources of funding for development and the provision of services.
- 3.10 Support local jurisdictions efforts to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness.

Regional Quality of Life

- 3.11 Support provisions and incentives created by local jurisdictions to attract housing growth in job-rich sub regions and job growth in housing-rich sub regions.
- 3.13 Encourage local jurisdictions' plans that maximize the use of existing urbanized areas accessible to transit through infill and redevelopment.
- 3.14 Support local plans to increase density of future development located at strategic points along the regional commuter rail, transit systems and activity centers.

Social, Political, and Cultural Equity

- 3.27 Support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement and fire protection.

3.15.3 Environmental Consequences

3.15.3.1 Requirements and Focus of NEPA versus CEQA Impact Analyses

Potential Impacts to be Evaluated Under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential impacts to socioeconomics and environmental justice have been identified for evaluation:

- Result in a change to the current and projected population level of the study area or function as a inducement to population growth (addressed as SE-1 below);
- Result in a change in expenditures for goods and services and infrastructure spending within the study area (addressed as SE-2 below);
- Result in aggregate short-term or long-term impacts on employment by increasing or decreasing the employment and income levels within the study area (addressed as SE-3 below);
- Result in the displacement of residences within the community or place increased demands on permanent and temporary housing resources that could not be absorbed by the existing housing stock (i.e., create excess demand conditions) (addressed as SE-4 below);
- Result in a disproportionate high or adverse impacts on minority and low-income populations (addressed as SE-5 below);
- Be inconsistent with the SCAG RCPG policies relating to growth management and conformance with master plans and sustainability goals (addressed as SE-6 below);
- Result in a strain on existing local government public service capacities such that the level of service standards are not met (addressed as SE-7 below); or
- Result in long-term impacts on local tax revenues and sources of funding (addressed as SE-8 below).

CEQA Significance Criteria

Under California Environmental Quality Act (CEQA), the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to population and housing and public services, the relevant CEQA significance criteria provided in Sections XIII and XIV (respectively) of the checklist are based on whether the proposed project would:

- Induce substantial population growth (addressed as part of SE-1 below);
- Displace substantial numbers of existing housing, or necessitate the construction of replacement housing elsewhere (addressed as part of SE-4 below); or
- Result in substantial adverse physical impacts associated with provision of new or physically altered government facilities, the construction of which would cause significant environmental impacts (addressed as part of SE-7 below).

3.15.3.2 Impact Analysis

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under National Environmental Policy Act (NEPA) and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Mitigation measures (MMs) are compiled in Section 3.15.4, Summary of Mitigation.

Proposed Project/Proposed Action (Alternative 1)

Impact SE-1: Affect current projected population levels in the study area.

Construction

During the construction phase, the Proposed Project is expected to have a minor, short-term beneficial impact on the region's population levels. The influx of jobs would be beneficial because local workers would be mobilized in a depressed economy and workers migrating from outside the corridor area would provide a further short-term stimulus to the region, from per diem spending and lodging related to the Proposed Project.

Approximately 550 to 660 workers would be involved in the pipeline's construction. About 45 percent (247 to 297) of these workers would be local in origin. Net migration to the ROI is expected from the non-local group of workers who would temporarily relocate to the region for the duration of tasks along a spread. The nature of construction activities would require that workers be transient and mobile. Workers would likely reside temporarily near staging areas and pipeline spread locations for short periods of time, and also commute from urban centers.

There would be about 302 to 363 non-local workers. As workers move along the spreads, they would come into contact with the surrounding local populations. Most of the municipalities and cities, with the exception of Baker (unincorporated area), have more than ten thousand residents. Therefore, the relative scale of population migrations from workers along the spreads would mostly blend in with the permanent residents. The temporary influx of worker teams would be more visible along the least populated portions, e.g., eastern San Bernardino County, of the Proposed Project route.

Operations

During the operational phase, a long-term impact on the ROI's projected population would be negligible. During pipeline operations, long-term permanent employment would be similar to that of other pipelines within the system. The existing Calnev Pipeline System operates two pipelines between Colton and Las Vegas. The operational work force is expected to be the same as the current operating system.

Impact on long-term employment would be negligible, and would not be significant with respect to CEQA. Therefore, no mitigation measures are required.

Impact SE-2: Affect regional economies.

Construction

The construction phase is anticipated to have a moderate beneficial short-term impact on the region's economy. Proposed Project construction spending would particularly benefit the regional economy as it would mobilize resources and increase expenditures on goods and services and hiring during an apparent low point in the business cycle. Large-scale pipeline infrastructure spending would provide jobs and incomes and build needed delivery capacity for petroleum products to meet future demand when economic growth resumes.

The construction phase stimulus would be short-term and temporary and would last for the duration of pipeline construction. Heavy construction equipment is used for virtually all of construction tasks, ranging from clearing and grading, topsoil segregation and trenching, pipe stringing, trench padding, field bending, welding preparation positioning and welding, x-rays, joint coating, lowering, back filling and cleanup. Skilled and specialized workers who can operate heavy earth moving equipment (i.e., bulldozers, backhoes, trenching machines, side-boom tractors etc.) and industrial welders would be mobilized and deployed along the spread corridors. These workers would receive salaries positively impacting regional incomes.

The non-local workforce that temporarily migrates to the ROI would also provide a spending stimulus to the region through spending on food, lodging, gas and entertainment. Spending from the non-local workforce is an external spending stimulus to the region and would temporarily benefit communities near the staging areas and storage yards and along the urban areas of the pipeline segments where outlets for retail spending are present. In addition, construction spending on consumables, supplies, and equipment would also have a positive short-term impact on local incomes if they are purchased locally. Aggregates, asphalt, sand, slurry materials and fuel for equipment and trucks would be likely local purchases, and local suppliers would provide storage areas.

Column (1) of Table 3.15-13 shows the estimated direct spending on materials, equipment, consumables and labor anticipated during the construction period. It is estimated that $200 million would be spent on materials, consumables, and labor during the construction phase. The estimated labor expenditures would be about $120 million with $60 million expected to be local. Non-pipe materials and consumables expenditures are estimated to be $20 million with $16 million in local spending. Pipe costs are estimated at $60 million and these expenditures have the potential to be procured from within the region. Pipe procurement would depend on which pipe manufacturer was selected. Potentially a total of one hundred and thirty-six million dollars in construction spending could be directly channeled into the region.

Table 3.15-13 Estimated Economic Impact During Construction Phase

	(1) Million $	(2) %	(3) Indirect Effect	(4) Induced Effect	(5) Total Economic Impact
Labor expenditures	$120	60%	$35.7	$61.0	$217
Local portion	$60	30%	$17.9	$30.5	$108
Non-pipe consumables	$20	10%	$6.0	$10.2	$36
Local portion	$16	8%	$4.8	$8.1	$29
Materials: Pipe Costs[1]	$60	30%	$17.9	$30.5	$108
Total:	$200	100%	$60	$102	$361
Potential Total Local Impact	$136		$41	$69	$246

[1] It is possible that all pipe materials could be procured locally.

Total Economic Impact: Multiplier Effect

The Proposed Project is expected to have a positive moderate ripple or multiplicative impact on area incomes during the construction phase. This impact is likely given the scale of the Proposed Project, and the resources expected to be mobilized. The total economy-wide impact would be moderate, short-term and beneficial.

To estimate the ripple effects, a construction project economic impact multiplier for the region was obtained from regional planners at SCAG and applied to the direct project related construction spending categories. The (Impact Analysis for Planning [IMPLAN], MIG Inc.) economic input-output model for the region was the original source of the multiplier applied (Hu 2009). The total construction multiplier of 1.8 (applied to direct expenditures) is reasonable and was used because a portion of the capital cost spending would stimulate the supply chain and household incomes within the San Bernardino-Riverside-Ontario Metropolitan Statistical Area.

Direct spending on regional supplies, consumables, and locally procured equipment and materials is expected to have a direct, indirect and induced impact on the region's incomes. The spending directly related to construction would generate a multiplier effect capturing impacts from linked or interdependent industries that comprise the supply chain supporting the region's energy infrastructure development. In addition, household incomes that are directly and indirectly impacted by construction activities would also be beneficially impacted during the construction phase.

Column one of Table 3.15-13 shows the estimated total direct construction related spending that would in turn generate additional economic activity within the region. Indirect effects (column two) relate to the potential impacts to area suppliers and other industries that would support the direct construction activity and procurement contracts and their suppliers. These other firms and industries would also spend within the region as they supplied firms directly and indirectly involved in the Proposed Project. Indirect effects reflect the combined ripple effect of the supply chain, after the multiplicative impacts have run their course and account for spending such as for inventory replenishment. Induced effects (column four) take into account the incomes and spending from households that would be directly and indirectly affected by the construction activity.

Local workers from the region's labor pools would receive a boost to their incomes during their short-term employment and installation contracts. In addition, non-local or workers who temporarily relocate to the regions hosting the pipeline spreads and corridor would spend income on consumables as food, hotel/motel rooms, supplies and entertainment. Direct expenditures from workers temporarily relocating to the region are new sources of stimulus to the ROI. Pipeline workers' direct spending would be concentrated near the construction staging areas or yards, and also spread across select municipalities along the corridor. The direct spending from local worker payrolls is estimated to be $60 million. Total output generated from this initial spending could potentially reach $108 million after ripple effects run their course. The direct spending from consumables and materials (assuming pipes are procured locally) could total $76 million. This direct spending could generate $137 million in total output to the region.

Table 3.15-13 shows the grand total economic impacts and the estimated total local economic impacts. Economic impacts are expressed in total industrial output, equivalent to total business sales. The construction phase could have a potential total economic impact of $361 million of which $246 million could potentially impact the ROI.

Construction activities may have a temporary, negligible, negative impact on local businesses within select areas of the spread where construction work is in progress. Dust and noise from trucks, machines and equipment mobilized for each of the various spread segments could have a temporary negative effect on businesses near that particular spread location. However, the impacts would primarily interfere with easy access to some sites near these spread locations and would be short-term.

Measures to mitigate fugitive dust and noise are discussed in Sections 3.6 and 3.13, respectively. Access to existing businesses located near the construction sites should be maintained at all times.

Operations

During Proposed Project operations, direct spending associated with the permanent workforce salaries and the pipeline's annual operational and maintenance expenditures would have a negligible impact on area incomes. Operational and maintenance expenditures, payroll and wages are expected to be small and much of the operational activities are expected to be handled by existing staff. Only a very minor change in employment, payroll, and other costs are anticipated during the operations phase.

This impact would have a moderate beneficial short-term impact on the region's economy during construction and a negligible impact on area incomes during operations. No mitigation would be required.

Impact SE-3: Affect employment levels within the study area.

Construction

The Proposed Project would have a temporary, beneficial impact on the region's labor force and employment situation. The Proposed Project would require 550 to 650 workers and take about 18 months to complete. The Proposed Project would require locally sourced labor, estimated at 45 percent of the total workforce. Consequently, between 248 and 293 workers may be hired temporarily to directly support pipeline, lateral and pumping station construction from within the region (i.e., from communities along the ROI corridor spanning the San Bernardino-Riverside-Ontario Metropolitan Statistical Area and Southern Nevada).

The Proposed Project's total construction workforce would have a short-term beneficial impact on the region's economy and to positively impact area employment levels for the duration of the tasks. The mobilization of workers would be especially beneficial to the economy during the recession because other industries supporting the construction are also likely to be positively impacted. Applying a total employment multiplier of 1.8, it is estimated that between 446 and 527 (=[248x1.8=446] & [293x1.8=527]) total local jobs could be generated within the ROI economy during the construction phase with the ripple effect.

Operations

The permanent operational staff would have negligible impact on the labor force as it is expected that the total number of permanent jobs created would be similar to the jobs required to man the two current pipelines in operation between Colton and Las Vegas.

The Proposed Project would have a temporary, beneficial impact on the region's labor force and employment during construction and a negligible impact on labor during operations. No mitigation measures would be required.

Impact SE-4: Affect demand for permanent and/or temporary area housing.

Construction

The construction phase would have a minor, positive impact on area housing resources along the ROI. A large number of workers would reside in trailers and recreational vehicles (RVs) near the pipeline segments where the tasks would be completed, to be within reasonable commuting distance (Table 3.15-14). Some workers would most likely concentrate near the staging areas/turn around areas where materials are stored and mobilized.

Table 3.15-14 Estimated Incremental Demand for Temporary Housing Accommodations during Construction Phase

	low	high
Total workforce	550	650
Local	248	293
Relocated personnel	303	358
Personnel requiring hotel/motel rooms:	151	179
Personnel staying in RVs:	151	179
Estimated daily room/unit requirements [a]	76	89

Notes:
[a] Room unit estimates assume double occupancy.

About 55 percent of the total construction workforce of between 550 and 650 persons would be comprised of relocated personnel. In the current economy, hotel/motel occupancy rates have fallen to cyclical lows. About half of the workforce would potentially require some form of either hotel/motel accommodations and the remaining 50 percent would be staying in RVs. Table 3.15-14 shows that these estimates imply that between 76 and 89 daily rooms would be required over the construction period. The estimate is on the low end and reflects the practice that most personnel staying in hotel/motels typically double occupy rooms with other Proposed Project personnel.

Table 3.15-6 shows the distribution of vacant housing units by type for municipalities along the pipeline ROI. The table showed an adequate capacity of vacant units that supplement hotel and motel units for sufficient accommodation during the workforce's peak construction demands.

The influx of workers during the construction phase would be positive to the housing sector because occupancy rates would temporarily increase and hotel/motel room occupancy rates would temporarily rise. Because most construction tasks along a segment would likely last several months, the workforce's dependents and families would be unlikely to accompany them to the spreads. Additional temporary migration of entire households would be unlikely along the pipeline ROI.

Operations

The Proposed Project's operational phase is expected to have a negligible impact on the ROI's housing stock and market activity. Few, if any, new permanent employees would be required to sustain the pipeline over the long-term horizon. The expected number of workers and their families/dependents are small enough to be easily absorbed within the community fabric and would place no noticeable incremental demands on area housing resources.

The Proposed Project would not result in adverse impacts to temporary or permanent housing stocks. Housing impacts would not be significant under CEQA. No mitigation would be required.

Impact SE-5: Result in a disproportionate high or adverse impacts or environmental effects on minority and low-income populations (Environmental Justice Considerations).

Based on the Proposed Project design and the fact that most of the pipeline would parallel an existing ROW, the Project would not have a disproportionate impact on any minority or low income populations living in areas traversed by the corridor. The Proposed Project is designed to be sited within an existing industrial use/commercial use zone where human contact with the linear infrastructure and potential by-products are minimized. The pipeline is buried underground, surrounded by a buffer area, and thus avoids direct residential interface.

Potential environmental justice issues related to the release of air emissions, fuel spills from potential rupture or leaks, potential groundwater contamination, elevated noise levels, and water discharges that could adversely affect the health or environmental quality of the local community are minimal. Potential hazards are unlikely or their effects minimized because of the built-in design safeguards to be taken construction of the Proposed Project. For example, Code of Federal Regulations (CFR) Title 49, Part 195 requires that 10 percent of welds be radiographically inspected. The Applicant would exceed this requirement by inspecting 100 percent of welds on the pipeline portion of the Proposed Project. The location of the subsurface line would also be marked in accordance with regulations in 49 CFR Part 185.410 to alert potential third party excavators in the vicinity of the pipeline. Crossings of major earthquake faults occur in unoccupied areas away from communities. These safeguards for prevention and avoidance of impacts minimize the risk of environmental justice issues arising during construction and operations.

For the duration of the planning process, the Applicant would take affirmative steps to ensure that identified low-income and minority populations are well informed about the Proposed Project and all related activities. The Applicant would design community-specific outreach programs and safeguards based on community concerns, and provide advance notice of public meetings and tours to bring low-income and minority stakeholders into the planning process so that community concerns may be appropriately addressed.

The Proposed Project would not have a disproportionate impact on any minority or low-income populations, therefore, no mitigation would be required.

Impact SE-6: Consistency with Regional Growth Management Goals and Policies (SCAG).

During public scoping, SCAG requested that the EIS/EIR evaluate the Proposed Project's consistency with SCAG's RCPG growth management goals and policies. The Proposed Project would be consistent with SCAG RCPG policies relating to socioeconomic considerations (Table 3.15-15).

No mitigation would be required.

Table 3.15-15 Comparison of SCAG RCPG Policies (Growth Management Chapter) and Proposed Project Consistency from a Socioeconomics Perspective

Policy Number	Policy Text	Statement of Consistency, Non-Consistency, or Not Applicable
3.05	Encourage patterns of urban development and land use which reduce costs on infrastructure construction and make better use of existing facilities.	Consistent. The Proposed Project would parallel and operate within an existing right-of-way (ROW) and thereby reduce the construction costs by making use of compatible corridor lands. The design would therefore reduce potential costs on infrastructure facilities by avoiding the need for a new corridor ROW.
3.09	Support local jurisdictions efforts to minimize the cost of infrastructure and public service delivery, and efforts to seek new sources of funding for development and the provision of services.	Consistent. The Proposed Project would deliver fuel in the most efficient manner that would avoid the use of fleets of trucks and the attendant use of highways, roads and truck terminals. The social costs of vehicle emissions would also be avoided. The pipeline would therefore support local jurisdictions efforts to minimize the cost of infrastructure and public service delivery.
3.10	Support local jurisdictions efforts to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness.	Consistent. The Proposed Project would proceed with minimal new permitting requirements thereby avoiding red tape and speeding up implementation to ensure fuel supplies can meet projected demand.
3.11	Support provisions and incentives created by local jurisdictions to attract housing growth in job-rich sub regions and job growth in housing-rich sub regions.	Consistent. The Proposed Project's fuel supplies would indirectly support this goal by sustaining the tourism/resort based economy of Clark County (Southern Nevada).
3.13	Encourage local jurisdictions' plans that maximize the use of existing urbanized areas accessible to transit through infill and redevelopment.	Consistent. By avoiding the creation of a new ROW, the Proposed Project would be consistent with this goal.
3.14	Support local plans to increase density of future development located at strategic points along the regional commuter rail, transit systems and activity centers.	Consistent. The ROW would follow or be parallel with existing transit corridors and traverse urban clusters. Therefore, the Proposed Project would be consistent with local plans to increase the density of future development along this corridor and be consistent with transit oriented development. The pipeline is not a de novo line that would leapfrog or bypass existing urban clusters to spread more diffuse development or contribute to urban sprawl.
3.27	Support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement and fire protection.	Consistent. The Proposed Project would be consistent with this goal. Property tax revenues derived from the new assets' contribution to the tax base would serve to expand the local jurisdictions' tax bases, thereby providing a new source of annual tax resources with which to accommodate these communities in a sustainable fashion. New sources of ad valorem revenues would be available to channel to such public services as public education, social services, recreation and health care.

Impact SE-7: Affect local government public services.

Construction

During construction, the Proposed Project could have a very minor impact on the provision of public services, in particular fire, police, and emergency services, and water supply in the local areas. It is unlikely that other public and municipal services such as schools, recreation, and solid waste services would be substantially impacted during the construction phase.

Since construction is an inherently risky activity, it is possible that the number of emergency calls that local emergency providers answer may increase slightly as a result of the construction of the proposed pipeline. However, by utilizing proper health and safety measures the construction firm will ensure that these calls are minimized. Existing personnel and equipment should be sufficient to handle any increase in emergency calls; therefore, there is no expected changes to the level of service local residents receive from police, fire, and other emergency services. In other words, existing resources and level of service capacities should be sufficient to accommodate any incremental demands placed on these municipal services and facilities during the construction period.

A potential impact is anticipated to arise from traffic related to routing and safety considerations necessary to ensure the safe and efficient movement of heavy earth moving equipment, manpower, pipes and materials to spread segment locations. Potential issues such as the erection of detours to accommodate oversized loads and traffic management at intersections would likely arise as the construction tasks progress. Some localized traffic disruptions may occur during pipeline construction, potentially impacting police and fire response times.

It is also expected that municipal water supplies along the ROW would be temporarily impacted during construction to accommodate both everyday construction related water spraying to control fugitive dust and the ultimate hydrostatic testing of the pipeline. It is estimated that two million gallons of water would be used for testing. The used hydrostatic test water would also be treated as required and discharged pursuant to permit. Water consumption is expected to come from local water districts and local treatment plants would be used. Incremental water demand attributable to construction activities is also expected from requirements to clean and wash all streets and roadways impacted by dust or waste generated by the activities. About 262,500 gallons of water per day is estimated for these purposes.

It is unlikely, given the short-term nature of discrete construction tasks that workers would migrate to the ROI with their dependents, thereby placing incremental demands on local school systems. The school districts are expected to be able to accommodate a given amount of new pupil enrollment from normal projected migration and population growth that would not be burdened or exacerbated by the Proposed Project's construction activities.

Solid waste leftover from construction activities would also place temporary demands on the ROI's municipal solid waste facilities and recycling centers. Some waste would typically include remnant segments of pipe, wastes generated by X-ray machines, welding and coating byproducts, and boxes and crates used to ship materials. The waste materials produced during construction would be either saved for reuse on another project or transported to solid waste transfer stations and refuse centers for recycling, reuse on future projects, or disposal. Trash containers would be provided onsite for refuse generated by construction crews. Other potential wastes that would require regional processing and disposal can include plastics, paper, wood, aluminum, contaminated spoils; and rubble. Non-hazardous wastes would be hauled to sanitary landfills. Hazardous wastes generated during construction would be sent to a permitted treatment or disposal facility.

The construction of the Proposed Project would result in only slight adverse impacts to local government services. Measures to ensure adequate access and movement of emergency vehicles should be in place to ensure that response times are not impacted by construction activities.

Operations

Based on the estimated small number of permanent, long-term personnel that would be required to sustain and maintain the pipeline, is unlikely that long-term public service demands cannot be met from existing and planned for resources and capacities. The pipeline would increase the tax base providing a new source of ad valorem revenues that can be used by the districts and municipalities to defray any long-term public service demands arising from the Proposed Project.

The Proposed Project would not result in adverse impacts to local government services. The Proposed Project would not require the construction of any new government facilities that could have an environmental impact, so would not be significant under CEQA. No mitigation would be required.

Impact SE-8: Affect local tax revenues and sources of funding.

Construction

The construction activity is expected to generate $6.7 million in sales tax revenue during this period and $1.6 million in property tax revenue for a combined $8.3 million. Sales tax revenues from construction spending would represent a one-time, non-recurrent increase, while annual property taxes would continue over the useful life of the Proposed Project.

Operations

During operations, Proposed Project assets would generate annual recurring ad valorem (property tax revenues). The first year of operations is expected to generate $1.6 million in combined property taxes broken out by: $772,000 to Nevada, and $$851,000 to California (Table 3.15-16). The property tax revenues were estimated based on the central/unit assessment method.

Table 3.15-16 Estimated Annual Ad Valorem (Property) Taxes During Operations

Area	Annual Revenues [1]
California	$851,000
Nevada	$772,000
Total:	**$1,623,000**

Note:

[1] Does not reflect changes in franchise agreement revenues for municipalities that would be crossed by the proposed pipeline.

In 2008, San Bernardino and Clark counties had combined ad valorem tax revenues of $1.35 billion (Table 3.15-12). Therefore, new source revenues from the addition of Proposed Project assets to the tax base would be comparatively minor but still beneficial to the localities fiscal positions.

The Proposed Project would result in beneficial impacts to local tax revenues and, therefore, no mitigation would be required.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to socioeconomics associated with the seven route variations are described below:

Table 3.15-17 shows the racial composition for census tracts corresponding to the alternative routes. While there is some duplication and overlap between census tracts along the Proposed Project route, there are also some additional communities that are profiled.

Table 3.15-17 Racial Composition and Income Characteristics for Census Tracts Crossed by Alternative Routes

Tract	Bloomington 003602	Rialto 003501	Wagon Train 010802	Zzyzx, Baker 010300
Racial Composition				
Total	100.0%	100.0%	100.0%	100.0%
Minority Percent \a	70.0%	75.4%	13.2%	45.3%
White	28.7%	22.7%	83.7%	52.6%
Black or African American alone	3.3%	12.4%	0.5%	2.5%
American Indian and Alaska Native alone	0.5%	0.5%	0.6%	0.8%
Asian alone	1.1%	2.7%	1.9%	0.3%
Native Hawaiian and Other Pacific Islander alone	0.1%	0.2%	0.1%	0.0%
Some other race alone	0.0%	0.1%	0.5%	0.1%
Hispanic or Latino	64.8%	59.5%	9.6%	41.6%
Two or More Races	1.3%	1.9%	3.1%	2.1%
Income and Poverty Status				
Percent of Families with Incomes Below Poverty Level	19.2%	11.1%	6.1%	21.4%
Median Household Income (1999)	$36,569	$45,438	$50,567	$27,500
Income as % of County Average	87%	108%	120%	65%

Source: United States Census Bureau 2000a, 2000b, 2000c

The racial composition of the Alternative routes also shows the presence of high minority-populations with the exception of Wagon Train (Census Tract 010802). Some communities also have large numbers of poor families (i.e., percent of families below poverty level). The Bloomington, Zzyzx, Baker, and Nipton tract (Census Tract 010300) has poverty ratios of 21 percent.

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to socioeconomic conditions or environmental justice. Because the Alternative Route is slightly shorter (by 0.7 miles), the decreased cost of construction would result in a slight reduction in the beneficial economic impact of the project on employment and taxes. Overall, the potential socioeconomic impacts associated with the Bloomington route would be the same as those identified for the Proposed Project.

Rialto Alternative

The Rialto Alternative route variation, and the segment of the Proposed Project route that it would replace through the City of Rialto, do not have any differences with respect to socioeconomic conditions or environmental justice. Because the Alternative Route is slightly longer (by 2.7 miles), the increased cost of construction would result in a slight increase in the beneficial economic impact of the project on employment and taxes. Overall, the potential socioeconomic impacts associated with the Rialto Alternative route would be the same as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route, and the segment of the Proposed Project route that it would replace through the unnamed riparian area, do not have any differences with respect to socioeconomic conditions or environmental justice. Because the Alternative Route is approximately the same length as the Proposed route, there would be no difference in the cost of construction, and therefore no change in the beneficial economic impact of the project on employment and taxes. Overall, the potential socioeconomic impacts associated with the Wagon Train Road HDD Alternative route would be the same as those identified for the Proposed Project.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa Alternative route, and the segment of the Proposed route that it would replace along Baldy Mesa Road, do not have any differences with respect to socioeconomic conditions or environmental justice. Because the Alternative Route is slightly longer (by 0.8 miles), the increased cost of construction would result in a slight increase in the beneficial economic impact of the project on employment and taxes. Overall, the potential socioeconomic impacts associated with the Phelan Road/Baldy Mesa route would be the same as those identified for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, do not have any differences with respect to socioeconomic conditions or environmental justice. Because the Alternative Route is approximately the same length as the Proposed route, there would be no difference in the cost of construction, and therefore no change in the beneficial economic impact of the project on employment and taxes. Overall, the potential socioeconomic impacts associated with the Zzyzx Alternative route would the same as those identified for the Proposed Project.

Baker Alternative

The Baker Alternative route, and the segment of the Proposed route that it would replace to the west and north of the town of Baker, do not have any differences with respect to socioeconomic conditions or environmental justice. Because the Alternative Route is slightly shorter (by 0.6 miles), the decreased cost of construction would result in a slight reduction in the beneficial economic impact of the project on employment and taxes. Overall, the potential socioeconomic impacts associated with the Baker Alternative route would be the same as those identified for the Proposed Project.

Silver Lake Pump Station Alternative

The alternative and Proposed Action locations for the proposed Silver Lake Pump Station do not have any differences with respect to socioeconomic conditions or environmental justice. Although the location is different, the costs of construction and operation would be the same at either location, and there would therefore be no change in the beneficial economic impact of the project on employment and taxes. Overall, the potential socioeconomic impacts associated with the Silver Lake Pump Station Alternative location would be the same as those identified for the Proposed Project.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation, and the segment of the Proposed Project route that it would replace along Valley View Boulevard, do not have any differences with respect to socioeconomic conditions or environmental justice. Because the Alternative Route is slightly longer (by 1.4 miles), the increased cost of construction would result in a slight increase in the beneficial economic impact of the project on employment and taxes. Overall, the potential socioeconomic impacts associated with the Sunset Lateral Alternative would be the same as those identified for the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to socioeconomics or environmental justice.

Summary

Overall, Alternative 2 would have the same impacts to socioeconomics and environmental justice as those identified for the Proposed Project. Although the costs of the two alternatives would vary slightly, this difference would not substantially change the level of any adverse or beneficial impacts associated with the Proposed Project. Like the Proposed Project, no mitigation measures have been identified for Alternative 2.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative location, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed.

Overall, Alternative 3 would have the same impacts to socioeconomics and environmental justice as those identified for the Proposed Project and Alternative 2. Although the costs of the alternatives would vary slightly, this difference would not substantially change the level of any adverse or beneficial impacts associated with the Proposed Project. Like the Proposed Project, no mitigation measures have been identified for Alternative 3.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, delivery of refined petroleum products via the proposed pipeline would not occur. Impacts associated with meeting potential fuel demand via rail or truck delivery or some combination of substitute transport modes would arise. To meet projected demand, combined rail and truck options or an alternative pipeline route, largely outside of existing utility ROWs, might be necessary. If used, alternate delivery options would be somewhat more expensive and require additional support infrastructure and equipment (i.e., fleets of trucks, rail cars, and terminals)

The alternative fuel-delivery options would not be consistent with some of the growth management goals articulated by SCAG (Table 3.15-15). In particular, delivery options would not be consistent with SCAG Policy Number 3.05, "Encourage patterns of urban development and land use that reduce costs on infrastructure construction and make better use of existing facilities." Rail and truck options sufficient to move the incremental 44,000 barrels per day into Clark County would not be consistent with this policy. The Clark County Blue Ribbon Commission demonstrated that these options would only meet a portion of incremental forecasted demand (2006). The scale up of alternative fuel-delivery options required to meet forecasted demands would involve larger fleets of unit trains or trucks and impose greater costs (e.g., lifecycle capital and operational and maintenance costs) on existing rail and road networks. The Proposed Project would avoid these costs and be consistent with SCAG Policy Number 3.05. The Proposed Project would also parallel or operate mostly within existing ROWs and thereby reduce construction costs.

Additionally, the transport of bulk liquids via pipeline is generally accepted to be more efficient than via unit trains or trucks. Heavy commodities such as coal, grains, and bulk industrial materials can be moved at a lower cost via rail. However, when pipelines and existing ROWs can be used to move bulk liquids, less demand is placed on competing modes of bulk transport. The rail alternative for petroleum products, under the No Action Alternative, would compete with other bulk commodity movements (within the San Bernardino-Riverside-Ontario Metropolitan Statistical Area moving into Clark County) via the Union Pacific rail corridor. Truck options would impose additional lifecycle costs on existing road networks (i.e., increased highway and road segment wear and tear and maintenance, increased energy consumption, and increased emissions from truck fleets).

The No Action Alternative would also not be consistent with SCAG Policy 3.09, "Support local jurisdiction efforts to minimize the cost of infrastructure and public service delivery and efforts to seek new sources of funding for development and the provision of services." Delivery of the incremental volume of petroleum products using a fleet of trucks or unit cars would increase congestion on an already congested regional road and rail network. Levels of congestion are projected to increase during the next 25 years (U.S. DOT 2008, Freight and Congestion Chapter).

The No Action Alternative would not be expected to have a significant impact on local population levels. An increase in truck and rail traffic is unlikely to lead to substantial in-migration to the region. Impacts to housing would likewise be unaffected as no change in the area's population is anticipated.

Under the No Action Alternative, local government services may be impacted as the additional truck and rail traffic would stress existing infrastructure. Additional road and rail capacity may need to be added to maintain the current service level. The provision of emergency services may also be affected as the increase in truck and rail traffic could potentially lead to more emergency situations.

Environmental justice issues could become an issue under the No Action alternative. Typically roads and rail corridors are located in minority and lower income communities. Any expansion of the infrastructure could impact sensitive groups.

Finally, fiscal impacts to local governments could occur under the No Action alternative. As described above, additional infrastructure improvements may increase the need for infrastructure improvements and may increase the demand for certain community services. In addition, the No Action alternative is unlikely to generate additional revenues as there is unlikely to be an increase in the local tax base or in ad valorem tax receipts.

3.15.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.15-18, there are differences in impacts based on the route variations.

Table 3.15-18 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
Beneficial impact through construction employment and increased taxes.	Beneficial impact through construction employment and increased taxes expected to be same as Proposed Project.	Beneficial impact through construction employment and increased taxes expected to be same as Proposed Project.	Would not have beneficial impact associated with Proposed Project or Alternatives 2 or 3.

3.15.4 Summary of Mitigation

The Proposed Project would not result in adverse socioeconomic impacts. No mitigation would be required.

References

Bishaw, A. and J. Iceland. 2003. *Poverty: 1999, Census 2000 Brief*. May. C2KBR-19.

Bureau of Economic Analysis. 2011. Regional Economic Counts, CA1-3 - Personal income. United States Department of Commerce. http://www.bea.gov/regional/index.htm#state. Accessed June 8, 2011.

Bureau of Land Management (BLM). 2005. *H-1601-1: Land Use Planning Handbook (Public), Appendix D: Social Science Considerations in Land Use Planning Decisions*. March 11.

California Employment Development Department. 2011. Monthly Labor Force Data for Counties, Cities, and Census Designated Places (CDP). http://www.labormarketinfo.edd.ca.gov/?pageid=1006. Accessed June 8, 2011.

City of Rialto. 2008. Rialto Airport Redevelopment Project: “Renaissance Rialto.” December 12. http://www.ci.rialto.ca.us/redevelopment_2301.php. Accessed March 18, 2009.

Clark County. 2008. *Clark County Nevada Comprehensive Annual Financial Report for the Year Ended June 2008*. http://www.accessclarkcounty.com/depts/Comptroller/pages/cafr.aspx. Accessed April 2, 2009.

Clark County. 2010. *Clark County Nevada Comprehensive Annual Financial Report for the Year Ended June 2010*. http://www.clarkcountynv.gov/Depts/finance/comptroller/Documents/pdf/2010%20CAFR/CAFR%20YE%206-30-10%20final.pdf. Accessed June 9, 2011.

Council on Environmental Quality. 1997. *Environmental Justice Guidance Under the National Environmental Policy Act, Council on Environmental Quality*. Executive Office of the President. Washington, D.C.

County of San Bernardino. 2010. *San Bernardino County, California Comprehensive Annual Financial Report for the Year Ended June 30, 2010*. http://www.sbcounty.gov/Uploads/CAO/Feature/Content/CAFR_Final.pdf. Accessed June 9, 2011.

Las Vegas Convention and Visitors Authority (LVCVA). 2008. *Comprehensive Annual Financial Report for the Year Ended June 30, 2008*. Las Vegas, Clark County, Nevada.

McCarran International Airport. 2011. About the Airport: Finance and Statistics. http://www.mccarran.com/04_04_stats_01.aspx. Accessed June 8, 2011.

Nevada Department of Employment, Training, and Rehabilitation. 2011. Nevada Workforce Informer. Research and Analysis Bureau. http://www.nevadaworkforce.com/cgi/dataanalysis/AreaSelection.asp?tableName=Labforce. Accessed June 8, 2011.

San Bernardino Associated Governments. 2009. http://www.sanbag.ca.gov/about/index.html. Accessed April 2, 2009.

San Bernardino County Fire Department. 2008. http://www.sbcfire.org/default.asp. Accessed April 2, 2009.

Southern California Association of Governments (SCAG). 2008. SCAG Comments on the Notice of Preparation of a Draft Environmental Impact Report/Draft Environmental Impact Statement for the Calnev Pipeline Expansion Project: SCAG No. I20080166. April 23.

United States Census Bureau. 2000a. Census 2000, Table P4. Hispanic or Latino, and Not Hispanic or Latino By Race [73] - Universe: Total population, Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data. Sourced through American Factfinder portal: http://factfinder.census.gov/home/saff/main.html?_lang=en. Accessed April 2, 2009.

United States Census Bureau. 2000b. Census 2000, Table P90. Poverty Status in 1999 of Families by Family Type by Presence of Related Children Under 18 Years By Age of Related Children [41] - Universe: Families, Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data. Sourced through American Factfinder portal: http://factfinder.census.gov/home/saff/main.html?_lang=en. Accessed April 2, 2009.

United States Census Bureau. 2000c. Census 2000, P53. Median Household Income in 1999 (Dollars) [1] - Universe: Households, Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data. Sourced through American Factfinder portal: http://factfinder.census.gov/home/saff/main.html?_lang=en. Accessed April 2, 2009.

United States Census Bureau. 2007. American Community Survey. http://factfinder.census.gov/servlet/ACSSAFFFacts?_event=Search&geo_id=&_geoContext=&_street=&_county=San+Bernardino+County&_cityTown=San+Bernardino+County&_state=04000US06&_zip=&_lang=en&_sse=on&pctxt=fph&pgsl=010. Accessed April 2, 2009.

United States Census Bureau. 2010. Selected Economic Characteristics: 2007-2009. American Community Survey 3-Year Estimates. http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2009_3YR_G00_&_lang=en&_ts=325587783020. Accessed June7, 2011.

United States Census Bureau. 2011a. Population Finder, American Fact Finder. http://factfinder.census.gov/servlet/SAFFPopulation?_submenuId=population_0&_sse=on. Accessed June 7, 2011.

United States Census Bureau. 2011b. Profile of General Population and Housing Characteristics: 2010, DP-1. Baker CDP, California. http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1&prodType=table. Accessed June 7, 2011.

United States Department of Transportation (U.S. DOT). 2008. Freight Story. Federal Highway Administration. http://www.ops.fhwa.dot.gov/freight/freight_analysis/freight_story/index.htm. Accessed August 10, 2009.

Personal Communications

Hu, Hsi-Hwa. 2009. Transportation Modeler, Assessment and Compliance, Southern California Association of Governments. April 21, 2009, email communication with Ian Miller, Sr. Economist, Ecology and Environment, Inc.

San Bernardino County Fire Department. 2005. http://www.sbcfire.[illegible] April 2, 2009.

Southern California Association of Governments [illegible] Notice of Preparation of a Draft Environmental [illegible] Impact Statement for the Calnev Pipeline Expansion Project. SCAG No. I20080106. April 25.

United States Census Bureau. 2000a. Census 2000. Table P4. Hispanic or Latino, and Not Hispanic or Latino By Race [73] - Universe: Total population. Data Set: Census 2000 Summary File 1 (SF 1) 100 Percent Data. Sourced through American Factfinder portal. http://factfinder.census.gov/home/saff/main.html?_lang=en. Accessed April 2, 2009.

United States Census Bureau. 2000b. Census 2000. Table P90. Poverty Status in 1999 of Families by Family Type by Presence of Related Children Under 18 Years By Age of Related Children [41] - Universe: Families. Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data. Sourced through American Factfinder portal. http://factfinder.census.gov/home/saff/main.html?_lang=en. Accessed April 2, 2009.

United States Census Bureau. 2000c. Census 2000. P53. Median Household Income in 1999 (Dollars) [1] - Universe: Households. Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data. Sourced through American Factfinder portal. http://factfinder.census.gov/home/saff/main.html?_lang=en. Accessed April 2, 2009.

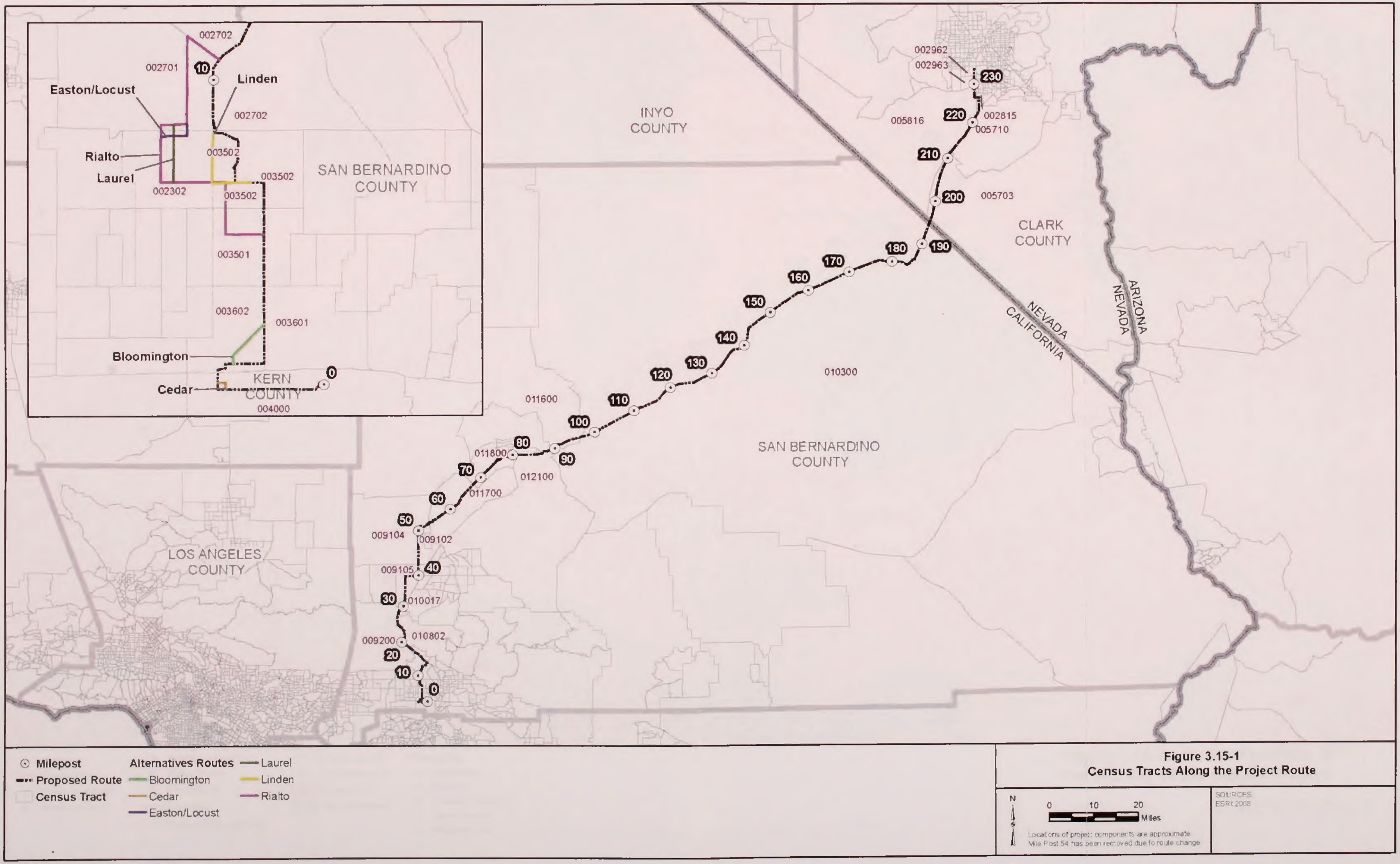
United States Census Bureau. 2007. American Community Survey. http://factfinder.census.gov/servlet/ACSSAFFFacts?_event=Search&geo_id=&_geoContext=&_street=&_county=San+Bernardino+County&_cityTown=San+Bernardino+County&_state=04000US06&_zip=&_lang=en&_sse=on&pctxt=fph&pgsl=010. Accessed April 2, 2009.

United States Census Bureau. 2010. Selected Economic Characteristics: 2007-2009. American Community Survey 3-Year Estimates. http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2009_3YR_G00_&_lang=en&_ts=[illegible]. Accessed June7, 2011.

United States Census Bureau. 2011a. Population Finder. American Fact Finder. http://factfinder.census.gov/servlet/SAFFPopulation?_submenuId=population_0&_sse=on. Accessed June 7, 2011.

United States Census Bureau. 2011b. Profile of General Population and Housing Characteristics: 2010. DP-1. Baker [illegible] http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1&prodType=table. Accessed June [illegible], 2011.

United States Department of Transportation (U.S. DOT). 2008. Freight Story. Federal Highway Administration. http://www.ops.fhwa.dot.gov/freight/freight_analysis/freight_story/index.htm. Accessed August 10, 2009.



Locations of project components are approximate.
Mile Post 54 has been removed due to route change.

Figure 3.15-1
Census Tracts Along the Project Route

SOURCES:
ESRI 2008

E:\GIS\CalNev_Pipeline\MXDs\Census_11x17.mxd
Date: June 27, 2011

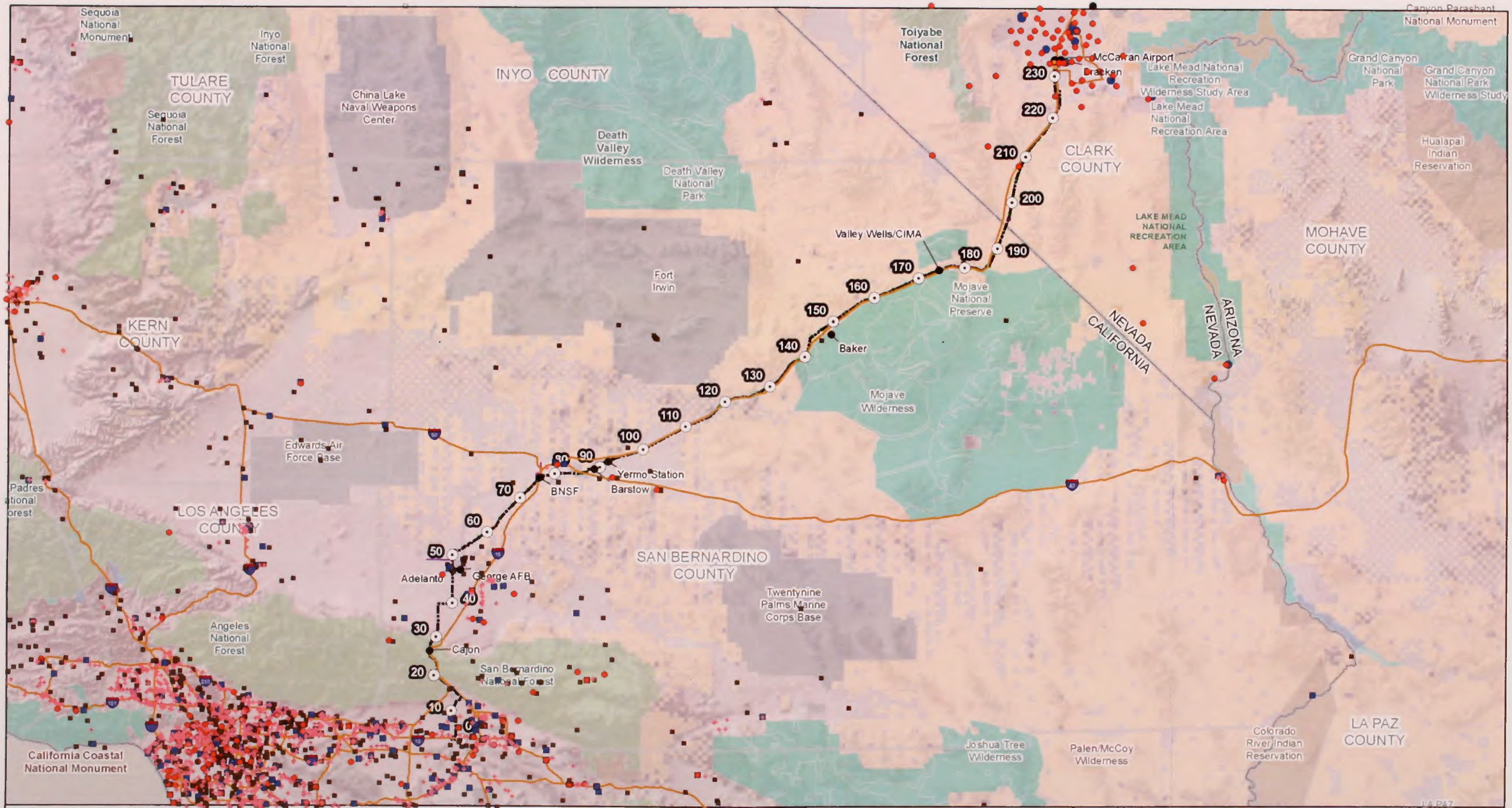


Figure 3.15-2: Public Facilities in the Vicinity of the Calnev Project

Locations of project components are approximate
Mile Post 54 has been removed due to route change

SOURCES:
ESRI 2006; USGS 2005; FEMA 2009;
CA DHS 2006; Clark County GISMO 2009

E:\GIS\CalNev_Pipeline\MXDs\public_facilities.mxd
Date: June 28, 2011

3.16 Transportation and Traffic

This section describes transportation and traffic conditions that may be affected by the Proposed Project). This section also discloses permanent and temporary impacts to transportation and traffic. Refer to Section 3.14, Recreation, for off-highway vehicle and recreational trail impact analyses.

During the scoping period, government agencies and members of the public identified the following issues and concerns related to transportation and traffic: impacts to regional transportation; construction impacts and access limitations in urban areas; impacts to road quality; impacts to traffic patterns; and compliance with traffic management regulations. These comments are addressed and mitigation measures for potential impacts are proposed in Section 3.16.3, Environmental Consequences.

3.16.1 Affected Environment

This section discusses transportation and traffic conditions near the Proposed Project area. The pipeline right-of-way (ROW) primarily traverses undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States Forest Service (USFS) and the Department of Defense (DoD). Lands under the jurisdiction of the State of California, the State of Nevada, San Bernardino County, and Clark County are also crossed by the pipeline ROW. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

3.16.1.1 Major Transportation Routes Crossed by or Parallel to the Pipeline

At the regional level, the Proposed Project roughly parallels Interstate 15 (I-15) from Colton to just outside Las Vegas. Also known as the Barstow Freeway, Ontario Freeway, and Mojave Freeway, I-15 is a major traffic thoroughfare between Southern California and Las Vegas. I-15 travels through Cajon Pass, a heavily traveled mountain pass between the San Bernardino Mountains and San Gabriel Mountains in San Bernardino County. Within Cajon Pass, I-15 runs parallel to an original portion of Historic Route 66 at a slightly higher elevation and intersects with State Route (SR) 138 at Cajon Junction.

In between Cajon Pass, milepost (MP) 22, and the California-Nevada border area (MP 195), I-15 serves as the only north/south thoroughfare. I-15 crosses Mojave Desert in a northeastern direction for about 209 miles; development along this stretch of highway consists of scattered, small communities. The other regional route in the Proposed Project area between Cajon Pass and the Las Vegas area is I-40, which runs in an east/west direction and crosses I-15 in Barstow, California (MP 86).

In Nevada, I-15 serves as the major transportation route between the California-Nevada border (MP 195) and the Las Vegas metropolitan area (MP 231). This stretch of I-15 varies in width from four lanes to six lanes and has posted speeds of 65 and 75 miles per hour. South of I-215 Beltway in the Paradise/Winchester Community Planning Area near the pipeline's terminus, access to I-15 is currently provided at five locations: Blue Diamond, St. Rose Parkway, Sloan, Jean, and Primm. The I-15 ROW is a Nevada Department of Transportation (NDOT) controlled access facility. The existing I-15 ROW between the California-Nevada border and the Blue

Diamond Highway is approximately 500 feet wide. The ROW north of Blue Diamond to the I-215 Beltway varies with a minimum width of 330 feet (Clark County 2008).

In Nevada, I-15 is roughly paralleled by SR 604 (Las Vegas Boulevard) and the Union Pacific Railroad (UPRR) corridor. SR 604 runs south of the Las Vegas area alongside I-15 to immediately south of Jean, Nevada. SR 604 is a two-lane roadway with a speed limit of 45 miles per hour. The UPRR has an approximately 100 foot ROW with a single track alignment. It runs south from the urbanized area of Las Vegas roughly paralleling the I-15 corridor to the Nevada/California state line. Currently this corridor is heavily used for freight hauling (Clark County 2008). In addition, Amtrak provides passenger rail service between the Cities of San Bernardino, Victorville, and Barstow.

In total, the pipeline crosses 22 major transportation intersections between Colton, California and its terminus in the Las Vegas area. Table 3.16-1 lists the location of these intersections by MP.

Table 3.16-1 Location of Intersections and Major Transportation Routes Crossed by the Pipeline by Milepost

Location (MP)	Intersection
2.5	Orchard Street and I-10
4.25	S. Cactus Avenue and Bloomington Avenue
9	Linden Avenue and I-210
15.5	I-15 at Glen Helen Road
16	Railroad crossing
25	State Route 138 at Cajon Junction
25	I-15 at Cajon Junction
27	I-15
28	I-15
34	Baldy Mesa Road
35	Baldy Mesa Road
36	Aqueduct Road at Baldy Mesa Road
42.5	State Route 395 at State Route 18
45	State Route 395 at Adelanto Road
76	I-15
86	I-40
118	I-15
182	I-15
223	State Route 146 at State Route 604
226	I-15 at West Cactus Avenue
229	State Route 160 at Blue Diamond Road
231	I-215 at S. Valley View Blvd.

3.16.1.2 Existing Traffic Volumes

Table 3.16-2 lists existing traffic volumes for the locations where the pipeline would cross major transportation routes. In California, volumes of traffic are measured in terms of peak hour estimates for actual vehicles and annual average daily traffic (AADT) for both lanes of travel (i.e., ahead and back). Nevada published AADT numbers, but does not differentiate between travel directions, nor do they record specific numbers for peak travel times.

Table 3.16-2 Traffic Volumes for Locations where the Pipeline Would Cross Major Transportation Routes

State of California					
Location (MP)	Intersection	Back Peak Hour	Back AADT	Ahead Peak Hour	Ahead AADT
0.5	I-10 at Riverside Avenue Interchange	13,200	196,000	13,400	197,000
2.5	I-10 at Bloomington Cedar Avenue	13,500	202,000	13,100	196,000
6	SR 66 at Riverside Avenue	2,200	25,000	2,500	28,500
9	I-210 at Riverside Avenue	1,850	19,000	2,650	27,500
15	I-15 at Glen Helen Parkway	9,900	134,000	9,800	133,000
25	I-15 at Jct. Rte. 138	11,400	155,000	9,200	135,000
34	Baldy Mesa Road	n/a	n/a	n/a	n/a
40	SR 395 Bear Valley Road	2,450	28,000	2,250	26,000
42.5	SR 395 at Palmdale Road; Jct. Rte. 18	2,200	25,000	1,550	19,000
45	SR 395 at Adelanto, El Mirage Road	1,900	16,000	1,250	10,500
76	I-15 at Lenwood Road	5,500	53,000	6,000	57,000
86	I-40 at Nebo Street Interchange	2,000	16,800	1,900	16,200
120	I-15 at Afton Road Interchange	5,300	37,500	5,300	37,500
180	I-15 at Bailey Road Interchange	5,000	36,000	5,000	36,000
185.5	I-15 at Nipton Road	5,000	36,000	5,100	36,500
182	I-15	5,000	36,000	5,100	36,500

State of Nevada		
Location (MP)	Intersection	AADT
223	State Route 146 at State Route 604	26,000
226	I-15 at West Cactus Avenue	209,000
229	State Route 160 at Blue Diamond Road	91,000
231	I-215 at S. Valley View Blvd.	151,000

Source: California Department of Transportation (CalTrans), 2009a-f

Traffic flow calculations can be performed using Level of Service designations for transportation routes. Level of Service (LOS) designations describe the speeds and volume of traffic typical for a roadway. Information regarding the LOS for highways crossed by the pipeline is not available.

3.16.2 Applicable Regulations, Plans, and Policies

3.16.2.1 Federal

Bureau of Land Management

On federal lands managed by the BLM, motorized routes, in addition to roads that are within the state or locally maintained roadway system, are designated for public use through the BLM's California Desert Conservation Area (CDCA) Plan. The majority of these routes are unmaintained. A few major arterial roadways are maintained or paved by the BLM (or both). Most routes receive light use and do not have specific policies or regulations governing their use. A few routes that provide access to major use areas or trailheads receive moderate use and may be hardened or maintained. The CDCA Plan designates roads as open, closed, or limited for vehicle use. The area designations are made on the basis of multiple-use classes with certain exceptions.

The goal of the Motorized-Vehicle Access Element of the CDCA Plan is to provide a system and set of rules governing access to the CDCA by motor vehicles. The specific objectives in the CDCA Plan are as follows:

- Provide for constrained motorized vehicle access in a manner that balances the needs of all desert users, private landowners, and other public agencies;
- When designating or amending areas or routes for motorized vehicle access, to the degree possible, avoid adverse impacts on desert resources; and
- Use maps, signs, and published information to communicate the motorized vehicle access situation to desert users. Be sure all information materials are understandable and easy to follow.

U.S. Forest Service

The USFS manages and maintains roads within the Forest to allow public access, meet long-term management objectives, and to provide connectivity with regional transportation systems (USFS 2005). The USFS categorizes roads as classified, temporary, or unclassified. Classified roads are those needed for motor vehicle access to ensure the long-term resource management. Temporary roads are intended for emergency operation, or in support of a permit, and are not necessary for long-term resource management. Unclassified roads are roads and trail that exist on the ground, but have not been assessed by the USFS.

3.16.2.2 State of California

County of San Bernardino

Currently more than 10,000 miles of roadways are located within San Bernardino County. These facilities fall under the jurisdiction of one of the three governmental agencies responsible for construction and maintenance of roadway infrastructure. The State of California Department of Transportation (Caltrans) is responsible for maintaining approximately 1,240 miles of roadway throughout the County. This total includes six federal (Interstate) freeways, two federal highways, and 18 state highways. The San Bernardino County Department of Public Works is responsible for maintaining approximately 2,830 miles of both paved and unpaved roadways primarily located in unincorporated areas of the County. These facilities range in classification from major arterial highways to local streets. The remaining 5,930 miles of roadways within San Bernardino County fall under the jurisdiction of the numerous incorporated municipalities located across the County. These facilities range in classification from major arterials to local streets.

Transportation and traffic management goals, policies, and regulations are outlined in the San Bernardino County General Plan. The goals, policies, and regulations that pertain to transportation and traffic within the Proposed Project area are as follows:

- The County will provide a transportation system, including public transit, which is safe, functional, and convenient; meets the public's needs; and enhances the lifestyles of County residents;
- The County's comprehensive transportation system will operate at regional, countywide, community, and neighborhood scales to provide connectors between communities and mobility between jobs, residences, and recreational opportunities;

- The County will have a balance between different types of transportation modes to minimize the adverse impacts of automobile use on the environment, reducing dependency on the automobile and promoting public transit and alternate modes of transportation;
- The County will coordinate land use and transportation planning to ensure adequate transportation facilities to support planned land uses and ease congestion;
- The County's road standards for major thoroughfares will complement the surrounding environment appropriate to each geographic region;
- The County will encourage and promote greater use of non-motorized means of personal transportation. The County will maintain and expand a system of trails for bicycles, pedestrians, and equestrians that will preserve and enhance the quality of life for residents and visitors;
- The County will encourage and pursue development of regional transportation facilities, including roads, railroad, and airports to be a multi-modal transportation hub and promote economic development; and
- The County will have a network of local and regional airports to meet the aviation needs (County of San Bernardino 2007).

City of Colton

The City of Colton's primary circulation objective is to provide a system that has adequate capacity to meet the demands of future development. Future development is defined to be occurring development that is consistent with adopted land use policy. The city has established four goals to maintain a circulation system that has adequate capacity to meet the demands of future development The goals established by the City of Colton to maintain a circulation system with a capacity for growth are as follows:

- Develop a transportation system that is safe, convenient, efficient and provides adequate capacity to meet local and regional demands;
- Encourage the use of alternate transportation modes;
- Separate vehicular traffic associated with commercial, manufacturing and agricultural uses from residential neighborhoods; and
- Ensure the provision of adequate off-street parking for all land uses (Mhole, Grover & Associates 1993).

City of Victorville

The City of Victorville is located in the California High Desert in San Bernardino County. The City of Victorville is intersected by several state highways and I-15. The City of Victorville has established four goals for the City's transportation system. The goals are as follows:

- Victorville as a balanced community with transportation alternatives;
- Victorville as a community with its transportation system and infrastructure serving its existing and projected land uses, and designated with convenience and safety;
- Victorville with an efficient transportation system; and

- Victorville which requires that circulation infrastructure be constructed in an orderly and fiscally efficient manner (City of Victorville 1997).

City of Rialto

The City of Rialto is currently served by a roadway system for cars, buses and trucks, sidewalks for pedestrians, and two Interstate Highways, I-10 and I-15, for regional travel. Future transportation plans include the installation of a bicycle trail, the Los Angeles/ San Bernardino commuter rail line, an improved General Aviation airport, and a new freeway constructed in the Highland Avenue corridor. The City of Rialto has set four goals for the maintenance of its existing transportation infrastructure. The goals are as follows:

- Cooperate and coordinate with Caltrans and the San Bernardino Associated Governments to accommodate growing volumes of east-west traffic.
- Confine trucking to designate efficient and convenient routes with and through the City.
- Maintain LOS D or better on all Rialto arterial roadways.
- Residential neighborhoods in Rialto shall be protected from the noise, pollution and danger of excessive vehicular traffic (City of Rialto 1992).

3.16.2.3 State of Nevada

Clark County

Clark County, Nevada outlines transportation and traffic goals in the Clark County Land Use Plans. The following goal pertains to transportation and traffic management within the Proposed Project area:

- Encourage proper planning and management of development patterns in relation to the Ivanpah Airport transportation network to ensure the effective use of an integrated, efficient, and adequate transportation network. This network includes roads, mass transit, pedestrian systems, trails and open spaces. The purposes of this network are to establish connectivity, to preserve the air shed, and to provide alternative transportation choices for the Ivanpah Airport and existing development within the I-15 Corridor (Clark County 2008).

Las Vegas Area

The transit service for the City of Las Vegas is managed by the Regional Transportation Commission of Southern Nevada (RTC). Various bus services including the Citizens Area Transit (CAT), the Metropolitan Area Express, The Deuce, CAT Americans with Disabilities Act Paratransit, CATSTAR, and Silver Star comprise the system managed by RTC. Currently, the RTC has two separate contractors: (1) Veolia Transportation, which operates the CAT fixed route, Metropolitan Area Express, and The Deuce services; and (2) Laidlaw Transit Services Inc., which operates primarily CAT Americans with Disabilities Act Paratransit services. Fixed route and Paratransit services outside the urbanized areas are operated by the Southern Nevada Transit Coalition, a non-profit organization. The following goals pertaining to transportation systems within the greater Las Vegas area are as follows:

- Newly developing areas of the city will contain adequate educational facilities and recreational and open space and be linked to major employment centers by mass transit, including buses, and by trails; and
- Issues of regional significance, requiring the City of Las Vegas to coordinate with other government entities and agencies within the Valley, will be addressed in a timely fashion (City of Las Vegas 2008).

3.16.3 Environmental Consequences

3.16.3.1 Requirements and Focus of NEPA versus CEQA Analyses

Potential Impacts to be Evaluated Under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential impacts to traffic and transportation have been identified for evaluation:

Proposed Project activities would affect transportation and traffic because construction-related vehicle trips would temporarily affect the transportation system by creating minor traffic congestion on local roads leading to the ROW. Proposed Project activities could also increase the number of roadside parking hazards and temporarily disrupt traffic flows, particularly at locations where the pipeline would cross major roadways. Effects to transportation and traffic would occur if the Proposed Project would:

- Decrease or disrupt existing primary access on public roads through the area (addressed as TRAN-1 below);
- Result in inadequate parking (addressed as TRAN-2 below); or
- Degrade existing road conditions as a result of construction (addressed as TRAN-3 below).

CEQA Significance Criteria

Under CEQA, the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to traffic and transportation, the relevant CEQA significance criteria provided in Section XVI of the checklist are based on whether the proposed project would:

- Conflict with an applicable plan, ordinance, or policy establishing measures to ensure the effectiveness for the performance of the circulation system (addressed as part of TRAN-1 below);
- Conflict with an applicable congestion management program (addressed as part of TRAN-1 below);
- Result in change to air traffic patterns (addressed as part of TRAN-4 below);
- Substantially increase hazards due to a design features or incompatible uses (addressed as TRAN-4 below);
- Result in inadequate emergency access (addressed as TRAN-5 below); or

- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities (addressed as TRAN-6 below).

3.16.3.2 Impact Analysis

This section describes the impacts associated with each alternative according to the criteria prescribed by NEPA and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA requirements. Under CEQA, where significant impacts are expected, mitigation measures must be outlined to reduce impacts to less than significant levels. Mitigation measures (MMs) are included in this section.

The Applicant has submitted a Traffic Management Plan. Procedures to be used by the Applicant from the plan are incorporated into the following impact analysis (URS Corporation 2009).

Proposed Project/Proposed Action (Alternative 1)

Impact TRAN-1: Increase traffic or roadway hazards.

During construction, transportation systems in the Proposed Project area would be impacted by an increase in traffic due to an influx of construction workers and the delivery of construction equipment and materials. Construction equipment and materials deliveries would occur throughout the construction period. Pipeline construction generally proceeds at rates ranging from several hundred feet to 1 mile per day. However, due to the assembly-line method of construction, these activities could last from one week to 30 days at a given location. Because the construction moves through an area relatively quickly, traffic impacts would typically be localized, intermittent, and short-term. Construction of the pipeline and aboveground facilities would take approximately 12 to 18 months to complete.

Construction equipment for the Proposed Project includes various size trucks, vans, tractors, trailers, dozers, trenching machines, boring machines, cranes, generators, and bending machines. Most of the heavy construction equipment would be delivered from storage yards to construction sites on lowboy trucks or trailers. Mobile cranes and dump trucks would be driven in from local contractors' yards. Construction equipment would be left overnight onsite when feasible or, where overnight onsite storage is infeasible, at the contractor yards or at other storage yards in the area.

Construction would also directly affect transportation and traffic in the Proposed Project area at those locations where the pipeline would cross a road or BLM designated open route. Proposed Project construction at road crossings identified in Table 3.16-2 would affect vehicle traffic flow at those locations during the construction period. Impacts on traffic would vary depending on the construction phase (e.g., grading, trenching, pipe stringing, and backfilling). Impacts could last from one week to 30 days at a given location. Horizontal directional drilling would be used at major road crossings to avoid impacts on traffic and transportation. However, in some cases, road crossings may result in detours or periods of one-lane traffic that would cause traffic delays. Detours or road closures could significantly impact traffic flows within the Proposed Project area.

Impact TRAN-1 would be reduced by implementing MM TRAN-1 which require the applicant to expand and improve their existing Traffic Management Plan. This would require the Applicant to consult with jurisdictional agencies to develop a strategy to assure safe and effective passage of through-traffic during construction activities

To mitigate the impact of construction across transportation routes, MM TRAN-1, would restrict lane closures and obstacles and requires consultation with jurisdictional agencies regarding construction schedule at road crossings. Lane closures would be identified prior to construction, and in urbanized areas, and limited to off-peak periods. Detours would be clearly identified and adequately noticed to local residents and businesses.

The Applicant would use existing roads and BLM designated open routes to gain access to the ROW during construction and maintenance. Refer to Chapter 2, Description of Proposed Action and Alternatives, for a list of all anticipated access and maintenance roads and routes. Modifications, including grading and/or widening, would be required to use some of existing roads. The Applicant would use identified routes and staging areas within the 100-foot nominal construction ROW for access to remote areas only during construction of the Proposed Project.

No new roads are planned as part of the Proposed Project. A route would be designated for maintenance where access to the existing pipeline is not adequate to serve the Proposed Project (see Chapter 2). The Applicant and/or the construction contractor would obtain encroachment permits or similar approvals from applicable public agencies. Such permits are needed for ROWs that would be crossed by the pipeline as well as for the parallel roads where construction would occur within the public ROW.

The Proposed Project would require minimal amount of surface activity required to operate and maintain the pipeline and associated facilities after construction is completed. Operation of the Proposed Project would not significantly impact transportation due to an increase in traffic or congestion.

With the implementation of the mitigation measures listed below, impacts to transportation and traffic due to an increase in usage would be less than significant under CEQA. However, the effect would still be noticeable to local residents, even with mitigation, and would therefore be a residual effect under NEPA.

- **MM TRAN-1: Traffic Management Plan.** The Applicant shall develop and implement detailed Traffic Management Plan for locations along the route where local agencies (e.g., traffic engineering, public works, etc.) identify construction activities that would adversely impact the existing transportation system. Where requested by public agencies, the use of flaggers, warning signs, lights, barricades, cones, etc. would be implemented according to standard guidelines required by the affected jurisdiction. The Applicant will ensure that the following measures are addressed in The Traffic Management Plan:
    - — The Applicant will ensure that truck traffic is scheduled for off-peak hours to reduce impacts to public roads during periods of peak traffic periods
    - — The Applicant will clearly identify truck routes to be used for ingress and egress form the proposed Project site
    - — Where lane closures are required, the Applicant will comply with BMPs established by the Work Area Protection and Traffic Control Manual (California Joint Utility Traffic Control Committee 1996);

- The Traffic Management Plan will identify traffic control measures, such as flag men, that will be implemented to ensure the safe operation of construction equipment accessing the site
- The Traffic Management Plan will include a section that describes measures to encourage employees to carpool in order to reduce the number of trips to and from the work site
- The Applicant will ensure that signs and public notices about work are distributed one week before disruptions occur, identifying detours to maintain access, the use of flagmen or escort vehicles to control and direct traffic flow, and scheduling roadway work during periods of minimum traffic flow. In urbanized areas, notices will be posted along the construction ROW as required by local agencies (e.g., traffic engineering, public works, etc.) that show the duration of construction activities within each roadway (e.g., which lane(s) would be blocked, at what times of day, and on what dates) at least one week in advance of construction.
- The Applicant will coordinate with emergency service when drafting the Traffic Management Plan to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services will be notified at least three days in advance by the Applicant of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where access to nearby property is blocked, provisions would be ready at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes.
- The Traffic Management Plan will detail the requirements of local agencies (e.g., traffic engineering, public works, etc.) regarding lane closures. The Applicant shall restrict lane closures or obstructions on arterial and collector roadways to off-peak period in urbanized areas to mitigate traffic congestion and delays that would be caused by lane closures during construction. Such closures will be directed by the affected public jurisdiction depending on specific site conditions.
- When working in or near existing roads and open routes, the Applicant will ensure that the construction contractor maintains all equipment within work areas designated by the traffic control devices. The Applicant will also ensure that the construction contractor properly loads equipment onto appropriate trucks and trailers for transport to other work sites; the contractor(s) will not be allowed to use active roadways to relocate construction equipment that are not licensed for use on public roads.
- The Applicant will coordinate in advance with public transit agencies to avoid disruption to transit operations. Public transit agencies that operate bus routes on the roadways potentially affected by the proposed construction activities will be informed in advance of the proposed Project and the potential impacts at bus stop locations. Alternate pickup/drop-off locations will be determined and signed appropriately.
- The Applicant will notify Federal Interagency Communications Commission (FICC) for SBCO to coordinate access to remote areas, and ensure that proper emergency response personnel are aware of the project.
- The Applicant will provide alternative pedestrian/bicycle access routes to avoid obstruction to pedestrian/bicycle circulation on routes as required by local agencies. Where existing pedestrian circulation routes or bike trails would be obstructed by

construction of the proposed Project, alternative access routes would be developed and signed/marked appropriately, in conjunction with local agencies.

- The Applicant will coordinate rail operations compatibility issues with the rail operators. The Applicant and contractors will plan and implement activities within the railroad ROW with appropriate railroad personnel. Access to the railroad tracks will be maintained at all times, and access to all rail passenger stations will be maintained during operating hours.
- The Applicant will coordinate with emergency service providers in advance of construction to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services would be notified at least three days in advance by the Applicant of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. In urban areas, the Applicant will consult with local emergency responders to establish a mutually agreeable amount of open trench. Limiting the amount of open trench will reduce detours, and ensure emergency access routes are maintained. At locations where access to nearby property is blocked, provisions would be ready at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes.
- Prior to finalizing construction plans, the Applicant will work with each jurisdiction to identify land uses along the ROW with access concerns. The Applicant will develop construction schedule that to provide reasonable access to businesses, institutions, or residential areas. This may include scheduling construction to avoid certain holidays, hours, or days of the week and/or avoiding peak traffic times adjacent to residential areas. If construction activities result in closing the primary access to these areas, the Applicant will make alternative access provisions (signed/marked appropriately). In addition, the Applicant will ensure that at least one access driveway is left unblocked during business hours or hours of use. Where construction activities interfere with access to local businesses and/or residents, property owners would be notified of the potential obstructions.

Impact TRAN-2: Result in inadequate parking capacity.

Construction activities in or around roadways could result in a decrease in parking capacity within the Proposed Project area. Schedules for necessary on-street parking closures would be published well in advance of the street closure. Directly affected businesses and residents would be given ample notice and information to plan alternatives, and signage would be provided to direct motorists to alternate routes. Traffic control requirements from municipalities would also be followed.

Impacts to parking capacity during construction would not be adverse as decreases to on-street parking capacity would be short-term and well noticed per MM TRAN-1. Urbanized areas at the beginning and end of the pipeline would be affected by decreased parking capacity more than in rural areas along the route.

Adverse operational parking impacts would not occur, as a minimal amount of surface activity is expected to maintain the underground pipeline. MM TRAN-1 would also be implemented to further reduce this minor impact.

Impact TRAN-3: Degrade the existing roadway conditions as a result of construction.

During construction, there would be an influx of heavy trucks, construction equipment, materials, and water to the Proposed Project area. The transportation and use of heavy constructing equipment could damage or degrade the surface of public roads. This damage, if not repaired, could become a safety hazard. Furthermore, increased transportation of heavy construction equipment and construction related activities such as boring, trenching, and drilling could damage or degrade existing public roads. No BLM designated open routes would be crossed by the Proposed Project. Worker numbers are negligible compared with average traffic flows on paved roads.

If damage that occurred were not corrected, this would be a direct, adverse impact that would be permanent. To reduce the impact, implementation of MM TRAN-3 would ensure that any adverse impacts are temporary.

- **MM TRAN-3: Restoration of Roads.** Public Roads damaged by construction activities shall be restored to their pre-construction condition as required by applicable local agency or federal requirement.

Impact TRAN-4: Substantially increase hazards due to a roadway design feature or change in air traffic pattern.

No new permanent roads or routes are planned as part of the Proposed Project; therefore, no design features would be required. Modifications, including grading and/or widening would be required to use some BLM closed access routes. These modifications would occur on unpaved surfaces not currently used for transportation by the general public. Tables 2-8 and 2-9 in Chapter 2 list all anticipated access and maintenance roadways. Impacts to the roadway transportation network would be less than significant under CEQA because the Proposed Project would not modify roads or publicly used routes. The Proposed Project would not result in any changes to air traffic patterns. These minor impacts would be further reduced by implementing MM TRAN-1.

Impact TRAN-5: Result in inadequate access for emergency or public vehicles.
Construction activities could impede emergency response or limit access, particularly in urban areas. The linear nature of the project could result in significant impacts to the effectiveness of emergency responders by increasing traffic on public roads (Impact TRAN-1), or creating barriers to emergency response vehicles. In the case of emergency responders, detours may not be an effective way of reducing the impact. These impacts could be significant under CEQA.

MM TRAN-1 would lessen potential impacts to emergency response or public vehicles. With the implementation of these measures, access for emergency responders would be maintained during the construction period, and detours and alternate routes would be coordinated in advance of construction activity. Emergency response providers near the Proposed Project area would be notified, at least three days in advance, about the exact location of construction, road or route closure schedules, and location of potential alternate routes. Work would be coordinated with local police and traffic engineers to plan appropriate access alternatives for temporary street closures and traffic disruption. Directly affected businesses and residents would be given ample notice and information to plan alternatives, and signage would be provided to direct motorists to alternate routes. Traffic control requirements from municipalities would also be followed. These measures would reduce the impacts to less than significant under CEQA.

Impact TRAN-6: Conflict with alternative transportation programs.

Public transit, pedestrian, bicycle, and rail transportation (via Amtrak) would be temporarily disrupted during street or rail-segment closures for construction of the Proposed Project. Urbanized areas at the beginning and end of the pipeline route would be affected by construction-related impacts on alternative passenger transportation more than in rural areas along the route. These impacts would not be significant under CEQA.

Alternative 2

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, are very similar with respect to traffic and transportation impacts. Both routes follow heavily-trafficked city streets in an urban area. Therefore, project activities could impede traffic as discussed in TRAN-1, could create inadequate parking (TRAN-2), could degrade roadways (TRAN-3), and could affect emergency access (TRAN-5). Similar to the Proposed Project, these impacts would be direct, adverse impacts, but would be temporary in nature. Disruption to traffic and parking patterns would be restored once the construction zone leaves each area, estimated to be less than three weeks at each location. Roadways would be restored, as required in MM TRAN-3.

Although impacts would occur and would require mitigation, the magnitude of impacts associated with the Bloomington Alternative route would be the same as those identified for the Proposed route.

Rialto Alternative

The Rialto Alternative route variation, and the segment of the Proposed Project that it would replace within the City of Rialto, are very similar with respect to traffic and transportation impacts. Both routes follow heavily-trafficked city streets in an urban area. Therefore, project activities could impede traffic as discussed in TRAN-1, could create inadequate parking (TRAN-2), could degrade roadways (TRAN-3), and could affect emergency access (TRAN-5). Similar to the Proposed Project, these impacts would be direct, adverse impacts, but would be temporary in nature. Disruption to traffic and parking patterns would be restored once the construction zone leaves each area, estimated to be less than three weeks at each location. Roadways would be restored, as required in MM TRAN-3.

Although impacts would occur and would require mitigation, the magnitude of impacts associated with the Rialto Alternative route would be the same as those identified for the Proposed Project.

Wagon Train Road Alternative

The Wagon Train Road route would have a slightly higher level of impacts to traffic and transportation, as compared to the segment of the Proposed Project that it would replace within the unnamed riparian area. In this area, the Proposed route occurs within an undeveloped area, so would not have any impact on transportation. The Wagon Train Road HDD Alternative route would affect access, and require road restoration, on a short segment of Wagon Train Road. Although this segment of road is short (less than one mile) and, because it is a dead end-road, has very little traffic, the road would need to be used to support the HDD effort, and would also need to be replaced following construction of the pipeline. Therefore, there would be a higher level of traffic impacts associated with the Wagon Train Road HDD Alternative than for the Proposed Project.

Phelan Road/Baldy Mesa Alternative

The Phelan Road/Baldy Mesa Alternative route, and the segment of the Proposed route along Baldy Mesa Road that it would replace, are very similar with respect to traffic and transportation impacts. Both routes follow streets in a residential area. Therefore, project activities could impede traffic as discussed in TRAN-1, could create inadequate parking (TRAN-2), could degrade roadways (TRAN-3), and could affect emergency access (TRAN-5).

In general, the Proposed route along Baldy Mesa Road is a wider, more heavily trafficked through-road than the residential streets associated with the Alternative route. Construction along the Proposed route would have a lesser disruption of traffic, due to the larger width of the road. Construction on the Alternative route would likely require complete closure of these narrow residential streets for the duration of the construction (approximately three weeks). Similar to the Proposed Project, these impacts would be direct, adverse impacts, but would be temporary in nature. Disruption to traffic and parking patterns would be restored once the construction zone leaves each area, estimated to be less than three weeks at each location. Roadways would be restored, as required in MM TRAN-3.

Although impacts would occur and would require mitigation, the magnitude of impacts associated with the Phelan Road/Baldy Mesa Alternative route would be the same as those identified for the Proposed Project.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, do not have any differences with respect to traffic and transportation. Neither route is located along a publicly traveled road. Overall, the potential traffic impacts associated with the Zzyzx Alternative route would be the same as those identified for the Proposed Project.

Baker Alternative

The Baker Alternative route would have some differences with respect to traffic impacts as compared to the Proposed Project. Instead of paralleling the existing Southern California Edison (SCE) and Los Angeles Department of Water & Power (LADWP) power lines west of Baker, the Alternative route would follow Interstate 15, a different transmission line route, and then public streets through the town of Baker. In general, the Proposed route would traverse mostly undeveloped land while the Alternative route would pass near residents and businesses within the Town of Baker.

Because it traverses public roads within the town of Baker, the Alternative route would have greater impacts to traffic and transportation than the Proposed route, which would have no impacts. Although impacts associated with the Alternative route would be temporary, and would be mitigated through implementation of MM TRAN-1 and TRAN-3, the Proposed route would largely avoid impacts altogether.

Silver Lake Pump Station Alternative

Neither the Silver Lake Pump Station Alternative location or the Proposed location would have any impacts to traffic and transportation. Neither location is on a public street, so neither would disrupt traffic or parking. The Alternative location would require a greater distance of heavy traffic to transport materials on the dirt maintenance road than would the Proposed location, which is near paved, public roads. Any damage to the maintenance road would need to be corrected through implementation of MM TRAN-3. However, given that very little traffic is expected on this road, this impact is not expected to be substantial.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route variation would have an increased level of traffic and transportation impacts, as compared to the segment of the Proposed Project that it would replace that passes through Bracken Junction. Both routes follow heavily-trafficked city streets in an urban area. Therefore, project activities could impede traffic as discussed in TRAN-1, could create inadequate parking (TRAN-2), could degrade roadways (TRAN-3), and could affect emergency access (TRAN-5). Similar to the Proposed Project, these impacts would be direct, adverse impacts, but would be temporary in nature. Disruption to traffic and parking patterns would be restored once the construction zone leaves each area, estimated to be less than three weeks at each location. Roadways would be restored, as required in MM TRAN-3.
Although impacts would occur and would require mitigation under both alternatives, the magnitude of impacts associated with the Sunset Lateral Alternative route would be greater than those identified for the Proposed route. This is due to the longer length of the Sunset Lateral Alternative route (approximately 1.4 miles longer). In addition, the impacts would occur in a different location. Under the Proposed Project, these impacts would occur on Valley View Boulevard, and although the pipeline would cross Las Vegas Boulevard (a major thoroughfare), impacts to Las Vegas Boulevard would be very short in duration. In contrast, the Sunset Lateral Alternative route would follow Las Vegas Boulevard for a distance of one mile. Because Las Vegas Boulevard is a more heavily used road than Valley View Boulevard, these direct, adverse impacts associated with the Sunset Lateral Alternative would be higher than those associated with the Proposed Project.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The difference between the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to traffic and transportation impacts.

Summary

Overall, Alternative 2 would have greater impacts to traffic and transportation than the Proposed Project. The overall project length is 3.6 miles longer than the Proposed Project length, and much of this increase (2.7 miles in Rialto, 0.8 miles at Phelan Road/Baldy Mesa, and 1.4 miles at Sunset) would occur along heavily trafficked urban or residential roads. The selection of the Wagon Train Road HDD Alternative route would increase traffic impacts on a public street in that area, and the Baker Alternative route would eliminate construction in an undeveloped area in favor of construction directly through the town of Baker. Also, the Sunset Lateral Alternative, in addition to increasing the overall length of the pipeline in an urban area, would require construction along one mile of Las Vegas Boulevard, a major traffic route within Las Vegas.

Similar to the Proposed Project, these impacts would be direct, adverse impacts, but would be temporary in nature. Disruption to traffic and parking patterns would be restored once the construction zone leaves each area, estimated to be less than three weeks at each location. Impacts would be reduced through the implementation of MM TRAN-1, and roadways would be restored, as required in MM TRAN-3.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. Similar to Alternative 2, Alternative 3 would include the greater level of traffic impacts associated with the Wagon Train Road and Sunset Lateral Alternative routes. However, it would not adopt the greater level of traffic impacts within the town of Baker associated with the Baker Alternative, and would not adopt the increased impacts associated with the Phelan Road/Baldy Mesa Alternative route.

Similar to the Proposed Project and Alternative 2, these impacts would be direct, adverse impacts, but would be temporary in nature. Disruption to traffic and parking patterns would be restored once the construction zone leaves each area, estimated to be less than three weeks at each location. Impacts would be reduced through the implementation of MM TRAN-1, and roadways would be restored, as required in MM TRAN-3.

Water Source Alternative

As discussed in Section 3.5.3.2, Impact WR-3, water may not be available from some of the proposed water sources at the time of construction. If that occurs, the Applicant has proposed that 100 percent of project water would be accessed from the West Valley Water District, Mojave Water Agency, and Las Vegas Valley Water District, and would be transported by truck to its point of use. If implemented, this water source scenario would result in an increase in the total mileage driven by water trucks to support the project, and would therefore have the potential to impact traffic conditions. Overall, total water truck miles would increase from 229,000 in the Proposed Project to 644,689 miles in the alternative water supply scenario, an increase of 180 percent in total truck miles (URS Corporation 2011). Almost all of this mileage increase would occur on Interstate 15.

The increase in truck traffic would affect the number of truck trips per day taken by water trucks on the secondary roads located between each water source and Interstate 15. The number of truck trips would not change at the West Valley Water District location. At the Mojave Water Agency location, the number of truck trips would increase from an average of 55 to 61 trips per day. At the Las Vegas Valley Water District, the number of truck trips would increase from 39 to 59 trips per day. At each location, this increase in truck trips could potentially have an adverse impact on local traffic patterns.

Because the Baker and Molycorp systems would not be used under the alternative water scenario, the number of truck trips at those locations would be reduced to zero. For each location, the number of trips would be reduced from an average of 75 trips per day to zero trips per day. This would eliminate any adverse impact on traffic that may have occurred as part of the Proposed Project at these locations.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, the anticipated fuel demand in Las Vegas, Nevada and the California high desert resulting from population growth and/or tourism would exceed the capacity of the existing Calnev Pipeline System. A portion of the demand could be met in ways identified in a report prepared by a Clark County Blue Ribbon Commission (BRC) to improve reliability of southern Nevada's fuel supply. Two alternative methods of fuel transportation were examined in the BRC report: delivery by rail or truck. The BRC also indicates that either of these options would require construction of new loading/off-loading facilities and/or new rail terminals.

The Proposed Project would increase system capacity up to approximately 44,000 barrels per day. The BRC estimated that 50 truck loads per day would be needed to transport 10,476 barrels per day. The BRC also estimated it would take three trains per week (with 85 cars per train) to transport 29,922 barrels per day. In order to meet the equivalent of the Proposed Project, it is assumed that 210 truck loads per day or four trains per week would be need to transport 44,000 barrels per day.

If the increase in demand were to be met through an increased use of truck and rail deliveries, the increase in the use of truck and rail traffic associated with the No Action Alternative would result in increases in traffic levels at loading facilities, along highways and rail systems, and at offloading facilities. These impacts would be direct, adverse impacts that would be permanent, and would be significant under CEQA. Mitigation of these traffic impacts would be outside of the jurisdiction of the agencies involved in the development of this EIS/EIR.

3.16.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.16-3, there are differences in impacts based on the route variations.

Table 3.16-3 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/ Environmentally Superior Alternative)	No Action Alternative/No Project Alternative	Alternative Water Supply Scenario
Temporary impacts during construction would be mitigated. Would contribute to cumulative impact, requiring additional mitigation.	Temporary impacts during construction would be mitigated. Impacts may be higher due to location of Sunset Lateral Alternative route in Las Vegas.	Temporary impacts during construction would be mitigated. Impacts may be higher due to location of Sunset Lateral Alternative route in Las Vegas.	Increase in truck traffic associated with fuel deliveries would add to cumulative congestion problems.	Increase in water truck mileage would add to cumulative congestion problems. Increase in number of trips could affect traffic at Mojave Water Agency and Las Vegas Valley Water District. Decrease in number of trips would reduce traffic impacts at Molycorp and Baker.

3.16.4 Summary of Mitigation

A complete list of mitigation measures proposed for the Proposed Project is presented by impact in Table 3.16-4. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.16-4 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Impact TRAN-1: *Increase traffic or roadway hazard.*	**MM TRAN-1:** *Traffic Management Plan.*	Locations where pipeline construction occurs along public roads/streets	BLM, USFS, San Bernardino County, Clark County	Pre-construction and during construction.
Impact TRAN-2: *Result in inadequate parking capacity.*	**MM TRAN-1:** *Traffic Management Plan.* .	Locations where pipeline construction occurs along public roads/streets	BLM, USFS, San Bernardino County, Clark County	Pre-construction and during construction.
Impact TRAN-3: *Degrade existing roadway conditions as a result of construction.*	**MM TRAN-3:** *Restoration of Roads.*	Entire route.	BLM, USFS, San Bernardino County, Clark County, municipalities	Post-construction
Impact TRAN-4: *Substantially increase hazards due to a roadway design feature or change in air traffic pattern.*	**MM TRAN-1:** *Traffic Management Plan.*	Locations where pipeline construction occurs along public roads/streets	BLM, USFS, San Bernardino County, Clark County	Pre-construction and during construction.
Impact TRAN-5: *Result in inadequate access for emergency or public vehicles.*	**MM TRAN-1:** *Traffic Management Plan.*	Locations where pipeline construction occurs along public roads/streets	BLM, USFS, San Bernardino County, Clark County	Pre-construction and during construction.
Impact TRAN-6: *Conflict with alternate transportation programs.*	**MM TRAN-1:** *Traffic Management Plan.*	Locations where pipeline construction occurs along public roads/streets	BLM, USFS, San Bernardino County, Clark County	Pre-construction and during construction.

References

California Department of Transportation (CalTrans). 2009a. The Traffic Data Branch. http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2009all/Route7-10i.htm. Accessed January 24, 2011.

California Department of Transportation (CalTrans). 2009b. The Traffic Data Branch. http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2009all/Route60-70i.htm. Accessed January 24, 2011.

California Department of Transportation (CalTrans). 2009c. The Traffic Data Branch. http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2009all/Route198-220i.htm. Accessed January 24, 2011.

California Department of Transportation (CalTrans). 2009d. The Traffic Data Branch. http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2009all/Route12-15i.htm. Accessed January 24, 2011.

California Department of Transportation (CalTrans). 2009e. The Traffic Data Branch. http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2009all/Route280-405i.htm. Accessed January 24, 2011.

California Department of Transportation (CalTrans). 2009f. The Traffic Data Branch. http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2009all/Route34-43i.htm. Accessed January 24, 2011.

California Joint Utility Traffic Control Committee. 1996. Work Area Protection and Traffic Control Manual. August 1996.

City of Las Vegas. 2008. Las Vegas 2020 Master plan: Transit Element.

City of Rialto. 1992. City of Rialto General Plan.

City of Victorville. 1997. City of Victorville General Plan.

Clark County. 2008. South County 2008 Land Use Plan.

County of San Bernardino. 2007. County of San Bernardino 2007 General Plan.

Mhole, Grover & Associates. 1993. City of Colton General Plan: Circulation Element.

URS Corporation. 2009. Memorandum from URS Corporation to Ecology and Environment, Inc, of requested Project information: Traffic Management Plan. April 15.

URS Corporation. 2011. Draft Groundwater Monitoring Plan. July 26, 2011.

United States Forest Service (USFS). 2005. Final Environmental Impact Statement, Land Management Plans, Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest. September 2005.

3.17 Public Safety/Hazardous Materials

This section evaluates how public health and safety may be affected by the Proposed Project. This section also discloses permanent and temporary impacts to health and safety. The locations of Proposed Project facilities, rights-of-way (ROWs), extra workspaces, and staging areas can be found in Chapter 2. Chapter 2 also includes a description of construction, operation, and maintenance techniques used for the Proposed Project as well as a detailed discussion of alternatives.

Pipeline safety and hazards are an important part of the public safety analysis. Appendix B provides a thorough discussion of pipeline safety and potential hazards and a summary is provided in Section 3.17.3, Environmental Consequences. Although this section addresses potential impacts from the release of hazardous materials, such impacts are discussed in more detail in Sections 3.5, Water Resources/Hydrology and Water Quality, and 3.7, Biological Resources. Hazards associated with seismic conditions are addressed in Section 3.2, Topography, Geology, and Geologic Hazards.

During the scoping period, meetings were conducted with the public and government agencies to identify issues and concerns. Written comments were also received. The following issues related to hazardous materials and public safety were raised: (1) overall public safety with regard to the Proposed Project; (2) potential impacts from pipeline failure on human health and property; (3) proximity of the proposed pipeline and ancillary facilities to schools; (4) safety issues during construction of the Proposed Project; (5) protection of the pipeline; (6) measures that would be taken in the event of pipeline failure; (7) the Applicant's pipeline safety record; (8) greater public involvement with respect to pipeline safety; and (9) potential problems related to the transportation of hazardous materials. These comments are addressed in Appendix B and Section 3.17.3, Environmental Consequences.

The primary sources of information used for this section included an *Environmental Contamination Assessment Report* provided by URS Corporation (2008), an Environmental Data Resources (EDR) DataMap (2008); federal, state, and local agency websites related to environmental health and safety; and safety elements from local-agency general plans.

3.17.1 Affected Environment

The pipeline ROW primarily traverses undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. Other federally managed lands in the Proposed Project area include land under the jurisdiction of the United States Forest Service and the Department of Defense. Lands owned by the State of California, San Bernardino County, and Clark County are also crossed by the pipeline ROW. Incorporated communities crossed by the pipeline ROW include, among others, the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

This section defines existing conditions within the Proposed Project area to establish a baseline from which potential impacts can be measured. Potential natural hazards and hazards related to existing infrastructure are considered. Hazards that could affect human health include, among others, the possible unearthing or exposure of hazardous wastes and contaminated soil or groundwater; and hydrocarbon releases or fires resulting from leaks or damage to the existing Calnev system.

3.17.1.1 Hazardous Wastes/Contaminated Soil and Groundwater

A preliminary search of 51 databases for California and Nevada identified 669 potentially contaminated sites within 1 mile of the Proposed Project are; 270 of which are within 500 feet of the centerline of the Proposed Project's ROW (URS Corporation 2008). This database search was comprehensive and included sites that did not necessarily contain contaminated soil or groundwater but were identified in federal or state databases for compliance with or enforcement of environmental regulations. For example, the list includes sites that are regulated by the Environmental Protection Agency (EPA) because they either generate, store, transport, or dispose of hazard waste; are recyclers; or contain underground or aboveground storage tanks. The list also includes sites that require no further action.

The list of sites was further screened to identify those sites with the potential for shallow contaminated soil or groundwater that could be present within or near the ROW, based on the assumption that construction activities would be limited to a depth of six feet. In general, groundwater is expected at depths greater than 15 feet below ground surface (bgs). Groundwater at less than 15 feet bgs and/or seasonal surface water may occur near the following areas:

- Alluvial washes within parts of Lytle Creek (milepost [MP] 10 to 12);
- Perennial flowing portions of Cajon Creek (MP 12 to 25);
- The floodplain of the Mojave River north of Victorville and near Barstow (MP 54 to 55 and 86 to 90);
- Mojave River (Silver Lake) near Baker (MP 145 to 146);
- Between Primm and Jean, Nevada (MP 196 to 208); and
- Las Vegas near the Union Pacific Railroad tracks (MP 232.4).

Groundwater depths in downtown Las Vegas can be less than 10 feet bgs; however, along the ROW, groundwater is 30 feet bgs or greater. Sites with known or suspected shallow contaminated soil or groundwater located within 500 feet of the center of the ROW and are listed Appendix B.

In addition to the sites identified during the screening process, there may be other unknown sources of contamination present along the pipeline, such as undetected pipeline leaks. There are multiple subsurface pipelines in the vicinity of the Proposed Project area where there could be subsurface petroleum contamination and potential metals contamination as a result of mine tailings.

Unexploded ordnance associated with the Rialto/Colton Munitions Depot facility historically has been reported. Also known as the Rialto Ammunition Storage Point, this 2,821.75 acre facility is about 5 miles north of the City of Rialto and 10 miles northeast of the City of Fontana, California near Alternative 2 at about MP 10. The facility was originally operated in World War II and subsequently was subdivided and has had numerous owners. Currently, most of the property is zoned industrial and is occupied by various companies, including pyrotechnics companies. Portions of the area have been developed for residential use. The area includes the Mid-Valley Sanitary Landfill which is owned and operated by the County of San Bernardino (URS Corporation 2008).

The State of California compiles a Hazardous Waste and Substances Sites (Cortese) List. There are 51 Cortese sites in San Bernardino County. The Marine Corps Logistics Base (MCLB) in Barstow, California and D&M Drum Company are Cortese sites that lie within 1 mile of the Proposed Project ROW (California Department of Toxic Substances Control [CADTSC] 2009a).

The MCLB is near to, but not crossed by the Proposed Project ROW, between MP 83 and 91 (Figure 2-8). Operations at the MCLB include equipment maintenance and repairs, and receiving, storing, maintaining, issuing and shipping military materials. Most wastes are related to vehicles and surplus. Vehicle wastes include oils, grease, hydraulic fluids, fuels, battery acids, antifreeze, bilge waters, paints, degreasers and solvents. Surplus wastes include ammunition, various sources of low level radiation, and chemicals including pesticides. The MCLB has 38 contaminated sites that have been divided into seven operable units. Superfund sites are often divided into operable units that have similar features or types of contamination for the purpose of investigation and cleanup. The base has landfills and surface impoundments. Spills and burning have occurred on-site and surface soils are contaminated. Volatile organic compounds including trichloroethylene have been detected in the groundwater at MCLB. Contaminants in soils include heavy metals, organic compounds, polychlorinated biphenyls, and trichloroethylene which can migrate to groundwater.

The groundwater aquifer under the MCLB is the source of domestic and commercial drinking water in the region. Phase I of a four phase Installation Restoration Program (IRP) has been completed by the Department of Defense (CADTSC 2009b).

D&M Drum Company is located at 137 Lilac Avenue in Rialto, approximately 0.25 mile from the Proposed Project route between MP 5 and 6. D&M Drum Company recycled drums from 1980 to 1989. The San Bernardino County Department of Environmental Health conducted annual facility inspections and ordered a corrective action in 1991. The San Bernardino County Department of Environmental Health referred the site to the CADTSC in 1995 for further action. A remedial investigation would be conducted for soil contamination (CADTSC 2009c).

Several silver mines operated in the late 1800s near Daggett, California, including the Calico, Waterloo, and Oriental mines. Each had mills that processed ore and generated tailings. The Calico mine is located more than 1 mile from the Proposed Project route, but the Proposed Project route passes by the mill wastes that are located near MP 88.5. The mill wastes at the Waterloo and Oriental Mill sites have not been investigated; however, the State of California's Department of Toxic Substances investigated the Calico Tailing Area and made an imminent and substantial endangerment determination based on the presence of high levels of mercury (180 parts per million [ppm]), arsenic (700 ppm), and lead (1100 ppm). These levels exceeded both State of California and EPA screening levels. Although sampling of the mill wastes associated with the Oriental or Waterloo Mines has not been conducted, it is reasonable to assume that similar milling procedures would have occurred and that there is potential for contamination at these sites (Reeder 2010 and Adams 2009).

Approximately 1 mile from the Proposed Project ROW (between MP 191 and 192), there is a flyash land disposal site located near the Primm Valley Golf Course. Biogen operated a coal power plant near the present location of the Primm Valley Golf Course. A by-product of coal-fired power plants is fly ash. Biogen disposed of the fly ash in an on-site landfill which is in the vicinity of the Primm Valley Golf Course; however, the Biogen facility was closed in the early 1990s (Cass 2010).

The Molycorp Mine was originally opened in the early 1950s near the town of Mountain Pass, California, and is an active lanthanide mining and milling operation (between MP 177 and 178). According to the Toxic Release Inventory Database, the Molycorp Mine emits air quality contaminants, but there are no surface water discharges and no underground injection. Lead compounds are shipped off-site for disposal (U.S. EPA 2010). The Molycorp Mine has a history of contamination. Under a 1994 settlement, Molycorp agreed to close the drum yard and the concrete casting and staging areas at the Mountain Pass Facility in order to remove all drummed wastes and close all lead waste impacted areas. By the end of 2003, CADTSC's Geology, Permitting, and Corrective Action Branch accepted the closure certification of these units and released Molycorp from closure financial responsibility. According to Envirostor, the Molycorp Mountain Pass Facility currently has a non-operating hazardous waste facility. There is also groundwater contamination associated with the on-site evaporation pond (Cass 2010).

From 1983 to 1998, Molycorp operated a waste effluent pipeline from Mountain Pass to Ivanpah Dry Lake, and the Proposed Project route roughly parallels this former pipeline. The waste pipeline also has a history of contamination. Between 1984 and 1993, Molycorp reported over 40 spills from the pipeline, totaling 727,000 gallons. In 1996, there were at least 11 spills from pipeline ruptures, totaling in excess of 350,000 gallons. Some of the waste contained heavy metals and low levels of radioactivity, up to 100 times acceptable (background) levels. In 1997, the Lahontan Regional Water Quality Control Board (RWQCB) issued Cleanup and Abatement Order 6-97-66, and Molycorp completed the cleanup in 1998. More than half of the wastes were radioactive. In 1998, the Lahontan RWQCB issued orders requiring Molycorp to cease disposing of and clean up radioactive and hazardous waste in ponds on the playa and at the mill site and subsequently identified additional areas of the pipeline that required remediation and developed a plan for pipeline removal. Following a civil suit from county prosecutors for violating state drinking water safety laws, Molycorp temporarily suspended operations at the mine and mill in September 1998 until environmental reviews were complete and a solution to its wastewater issues was reached (U.S. EPA 2010). Much of the contamination along the pipeline has been removed (Cass 2010).

Contamination has also occurred at the evaporation pond sites. The wastewater pipeline discharged to two different sets of evaporation ponds. From 1980 to 1987, wastewater was discharged to the Old Ivanpah Evaporation Ponds (OIEP) located approximately 10 miles east of the mine along Nipton Road. Operations at the OIEP were discontinued when it was discovered that the underlying groundwater was contaminated with total dissolved solids (TDS), nitrate, and strontium that appeared to be related to the ponds. In 1987, wastewater discharge was moved to the New Ivanpah Evaporation Ponds (NIEP), located approximately 3 miles north of the OIEP near the center of the Ivanpah Playa. The NIEP location was selected based on naturally poor groundwater quality (high saline and TDS) that exists beneath the dry lakebed. The wastewater discharged to the NIEP contained elevated TDS, primarily chloride and sodium with lower concentrations of strontium, nitrate, barium, lead, and radionuclides. The media of concern at the NIEP include surface soils and groundwater. The NIEP has not been formally closed. Groundwater monitoring for TDS, nitrates/nitrites, strontium, and lead is on-going around the NIEP (Arcadis 2009).

Currently, Chevron Corporation owns the wastewater discharge pipeline and the evaporation ponds. Molycorp Minerals LLC owns and operates the mine. Chevron is in the process of removing the pipeline and removing residual contamination associated with the pipeline. It is also monitoring the groundwater at the evaporation ponds. Molycorp Minerals LLC is currently operating the mine but is not mining. It is processing stockpiled materials (Hunter 2010).

3.17.1.2 Schools

California state law has established requirements for siting of new schools. The school site selection standards, Title 5 California Code of Regulations (*CCR)* Section 14010(h), state that school sites would not be located near an aboveground water or fuel storage tank or within 1,500 feet (0.28 mile) of the easement of an aboveground or underground pipeline that can pose a safety hazard as determined by a risk analysis study conducted by a competent professional. There are no known proposed schools within 1,500 feet of the Proposed Project ROW; however, there are some questions about the distance of the proposed school in the Renaissance Project in Rialto to the Proposed Project route (Table 3.17-1).

Table 3.17-1 Proposed Schools in the Vicinity of the Proposed Project

Location	School, Expected Opening	Distance From Proposed Project (Miles)
City of Colton, CA		
Between W. Valley Blvd. and San Bernardino Ave. along Hermosa Ave.	West Valley Specific Plan Amendment Project *, Unknown	< 2
City of Grand Terrace, CA		
Taylor St. and Main St.	Grand Terrace High School, 2011 (Colton Unified School District, 2009)	3.6
City of Rialto, CA		
At present site of Rialto Municipal Airport; northwest of the intersection of Leiske Dr. and N. Fitzgerald Ave.	Renaissance Project**, late 2009 to 2020 (City of Rialto 2008)	0.5
Clark County, NV		
6635 W. Cougar Ave. Las Vegas, NV 89139	Mark L. Fine Elementary School, 2009-2010 school year (Clark County School District 2009)	2.75

Notes:

* Current Specific Plan Amendment calls for a K-8 school.

** Current Redevelopment Plan includes a 10-acre public school.

Existing schools are located within 1,500 feet of the Proposed Project route (Table 3.17-2). No law or regulations specifically restrict the siting of pipelines near existing schools. However, the Applicant is in consultation with the applicable school districts.

Table 3.17-2 Existing Schools within 1,500 feet of the Proposed Project

Location	Distance (Miles)	Milepost
Bloomington Middle School 18829 Orange Street Bloomington, CA 92316	0.10 (528 feet)	2
New Testament Baptist Church 9988 Olive Street Bloomington, CA 92316	0.14 (740 feet)	3

Table 3.17-2 Existing Schools within 1,500 feet of the Proposed Project

Location	Distance (Miles)	Milepost
Grimes Elementary School 1609 Spruce Avenue Bloomington, CA 92316	0.25 (1,320 feet)	Between 3 and 4
Community Christian Pre-School 690 W. Etiwanda Ave. Rialto, CA 92376	0.25 (1,320 feet)	MP-6
Simpson Elementary School 1050 S. Lilac Avenue Rialto, CA 92376	0.25 (1,320 feet)	Between 4 and 5
Carter High School 2630 North Linden Avenue Rialto, CA 92377	3 feet	Between 9 and 10
Curtis Elementary School 451 S. Lilac Avenue Rialto, CA 92376	0.25 (1,320 feet)	MP-5
Dunn Elementary School 830 N. Lilac Avenue Rialto, CA 92376	0.25 (1,320 feet)	Between 6 and 7
Baldy Mesa Elementary School 10376 Baldy Mesa Road Phelan, CA 92329	0.25 (1,320 feet)	Between 34-35
Quail Valley Middle School 10058 Arrowhead Road Phelan, CA 92371	0.25 (1,320 feet)	Between 34-35
Baker Elementary and High School 72100 Schoolhouse Lane Baker, CA 92309	0.14 (750 feet)	Between 144-145

3.17.1.3 Existing Fire Hazards

The Proposed Project pipeline would cross desert scrub, riparian woodland, and urban environments, each of which has an associated fire risk. Fire is natural part of the maintenance of some ecosystems; therefore, fires can be common in these areas.

California has a system called Calfire to characterize the fire risks of areas. Calfire produces Fire Hazard Severity Zone maps that assign a hazard score based on the factors that influence fire likelihood and behavior. Many factors are considered such as fire history, existing and potential fuel (natural vegetation), flame length, blowing embers, terrain (steep terrain has a greater fire hazard severity), topography, and typical weather for the area. The 2008 Fire Hazard Severity Zone maps include areas where local governments have financial responsibility for wildland fire protection, known as local responsibility areas. Only lands zoned very high were identified within local responsibility areas. Using these methods, Calfire divided state responsibility areas into three hazard zones: moderate, high and very high (Cal Fire 2007).

In general, the highest fire hazard is between MPs 10 and 28, followed by the area between MPs 8 and 10 and the area between MPs 28 and 33. There is a moderate fire hazard between MP 33 and the Nevada border (Appendix B).

Clark County, Nevada conducted a risk/hazard assessment in 2005. The Proposed Project pipeline would cross the communities of Primm, Sloan, Arden, Henderson, and Las Vegas from south to north. These communities were assessed as being low hazard communities with low ignition risks. The areas between these communities were not assessed (Resource Concepts, Inc. 2005).

3.17.2 Applicable Regulations, Plans, and Policies

Hazardous materials handling and hazardous waste management are subject to numerous laws and regulations at all levels of government. Laws and regulations related to health and safety are summarized below. Laws and regulations applicable to pipeline construction, design, and operations are discussed in Table 3.17-3.

Table 3.17-3 Major Laws, Regulatory Requirements, and Plans for Hazardous Materials

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Hazardous Materials, Hazardous Waste, and Oil Spills [a]	
Federal	
National Oil and Hazardous Substances Pollution Contingency Plan (NCP) – 40 Code of Federal Regulations (CFR) §300 - United States Environmental Protection Agency (EPA)	• Outlines requirements for responding to both oil spills and releases of hazardous substances; specifies compliance but does not require the preparation of a written plan. • Provides for comprehensive system for reporting, spill containment, and cleanup.
Spill Prevention, Control, and Countermeasure (SPCC) Plans, required under the Oil Pollution Prevention Regulation; Non-Transportation-Related Onshore and Offshore Facilities (40 CFR §112) - EPA	• Requires facilities that store, handle, or produce significant quantities of hazardous material to prepare an SPCC Plan to ensure that containment and countermeasures are in place to prevent release of hazardous materials to the environment. • The United States Coast Guard and the EPA share responsibility for Federal On-Scene Commander oversight for spills. • The Proposed Project would be required to have an SPCC Plan for the construction and operations phase
Clean Water Act - EPA	• 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. • Sets water quality standards for all contaminants in surface waters. • Makes it unlawful for any person to discharge any pollutant from a point source into navigable waters without a permit.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - EPA	• Provides authority for the EPA to respond to a release or threat of a release of any pollutant or contaminant which may pose a potential threat to human health and/or the environment. • Establishes prohibitions and requirements concerning closed and abandoned hazardous waste sites. • Provides for liability of persons responsible for releases of hazardous waste at these sites. • Establishes a trust fund to provide for cleanup when no responsible party can be identified. • Establishes which elements and compounds are hazardous substances. A hazardous substance is either "listed" if it appears in Table 302.4 in 40 CFR 302.4 or "unlisted" if it exhibits any of the characteristics identified in 40 CFR 261.20 through 261.24. • Establishes the quantity of a hazardous substance release that must be reported. • Provides notification requirements for a release of hazardous substance.

Table 3.17-3 Major Laws, Regulatory Requirements, and Plans for Hazardous Materials

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Superfund Amendments and Reauthorization Act - EPA	• Establishes a nationwide emergency planning and response program and reporting requirements for facilities that store, handle, or produce significant quantities of hazardous materials. • Identifies requirements for planning, reporting, and notification concerning hazardous materials.
49 CFR Parts 173 and 177 - Pipeline and Hazardous Materials Safety Administration (PHMSA) Office of Pipeline Safety (OPS)	• Regulates transportation of hazardous materials in portable tanks and by highway. • Specifies minimum requirements for portable tanks and cargo tank motor vehicles. • Specifies requirements for driver training, inspections, shipping papers, segregation of hazardous materials. • Requires engine shutoff and bonding and grounding between containers to prevent accidental ignition due to static electricity for Class 3 materials (flammable and combustible liquids).
Resource Conservation and Recovery Act (40 CFR §240-299) - EPA	• Establishes system for controlling hazardous waste from its point of origin to its final disposal. Includes handling, storage and disposal requirements. • A Resource Conservation and Recovery Act (RCRA) hazardous waste is a waste that appears on one of the four hazardous wastes lists (F-list, K-list, P-list, or U-list), or exhibits at least one of four characteristics—ignitability, corrosivity, reactivity, or toxicity. Hazardous waste is regulated under the RCRA subtitle C. • To keep track of hazardous waste activities, treatment, storage, and disposal facility owners and operators must keep certain records and submit reports to the EPA at regular intervals. Operating records, for example, must be kept on site for the duration of the facility's operation. Recordkeeping and reporting requirements are found at 40 CFR part 264 subpart E and 40 CFR part 265 subpart E . – USEPA Identification Number and Part A Permit (Forms 8700-12 and 8700-23) – All facilities that generate, transport, recycle, treat, store, or dispose of hazardous waste are required to notify the EPA (or its State agency) of their hazardous waste activities. An EPA Identification Number must be obtained unless the solid waste has been excluded from regulation or their hazardous waste has been exempted. – National Biennial RCRA Hazardous Waste Reports – §3002 and 3004 of RCRA require that the EPA collect information pertaining to hazardous waste management from hazardous waste generators and hazardous waste treatment, storage, or disposal facilities on a two year cycle. • Hazardous Waste Manifest System – The system includes a set of forms, reports, and procedures designed to seamlessly track hazardous waste from the time it leaves the generator facility where it was produced, until it reaches the off-site waste management facility that will store, treat, or dispose of the hazardous waste.
State	
Lempert-Keene-Seastrand Oil Spill Prevention and Response Act of 1990 - California Department of Fish and Game (CDFG) Office of Spill Prevention and Response and California State Lands Commission	• Established the Office of Spill Prevention and Response within the CDFG. • Seeks to protect the waters of the State from oil pollution and to plan for the effective and immediate response, removal, abatement, and cleanup in the event of an oil spill. • Requires immediate cleanup of spills following approved contingency plans and fully mitigating impacts on wildlife. • Assigns primary authority to CDFG Office of Spill Prevention and Response to direct prevention, removal, abatement, response, containment, and cleanup efforts with regard to all aspects of any oil spill in the marine waters of the State.

Table 3.17-3 Major Laws, Regulatory Requirements, and Plans for Hazardous Materials

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) - California Environmental Protection Agency (CalEPA) Office of Environmental Health Hazard Assessment	• Requires businesses to notify Californians about significant amounts of chemicals that are released into the environment. • Develops health-protective exposure standards for different media (air, water, land) to recommend to regulatory agencies. • Administers the Proposition 65 program and evaluates all currently available scientific information on substances considered for placement on the Proposition 65 list. • Makes recommendations to the CDFG and the State Water Resources Control Board with respect to sport and commercial fishing in areas where fish may be contaminated.
California Hazardous Materials Incident Contingency Plan - California Office of Emergency Services	• Describes California's hazardous material emergency response organization.
Hazardous Materials Spill/Release Notification Guidance - California Office of Emergency Services	• Applies to all significant releases of hazardous materials by reference to the Safe Drinking Water and Toxic Enforcement Act of 1986, better known as Proposition 65, and 9030 of the California Labor Code. Notification is required regarding significant spills or threatened releases from: facilities, vehicles, vessels, pipelines and railroads for discharges or threatened discharges of oil or any hazardous substance in marine waters, discharges that might threaten or impact water quality and hazardous liquid pipeline releases and every rupture, explosion or fire involving a pipeline.
Hazardous Waste and Substances Sites (Cortese) List California Government Code §65962.5	• This state code requires the state to compile a hazardous waste and substance list. The Cortese List is a planning document used to comply with the California Environmental Quality Act (CEQA) requirements by providing information about the location of hazardous materials release sites. The CalEPA must update the Cortese list annually (California Department of Toxic Substances Control [CADTSC] 2009d).
Caltrans	• Caltrans sets standards for trucks in California. The regulations are enforced by the California Highway Patrol. Common carriers are licensed by the California Highway Patrol, pursuant to the California Vehicle Code, §32000. This section requires licensing of every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards. Common carriers conduct a large portion of their business in the delivery of hazardous materials. Under the RCRA, the EPA sets standards for transporters of hazardous waste. In addition, California regulates the transportation of hazardous waste originating or passing through the state; state regulations are contained in the California Code of Regulations (CCR), Title 13. Hazardous waste must be regularly removed from generating sites by licensed hazardous waste transporters. Transported materials must be accompanied by hazardous waste manifests.
Hazardous Waste Control Act (Title 26 CCR) - CalEPA	• Defines requirements for proper management of hazardous materials.
Safety	
Federal	
Hazardous Materials Transportation Act	• The Hazardous Materials Transportation Act is the federal legislation that regulates transportation of hazardous materials. The primary regulatory authorities are the U.S. Department of Transportation (DOT), the Federal Highway Administration, and the Federal Railroad Administration. The Hazardous Materials Transportation Act requires that carriers report accidental releases of hazardous materials to the DOT at the earliest practical moment (49 CFR Subchapter C). Incidents that must be reported include deaths, injuries requiring hospitalization, and property damage exceeding $50,000.

Table 3.17-3 Major Laws, Regulatory Requirements, and Plans for Hazardous Materials

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Bureau of Land Management	• Under the authority of the CERCLA (Superfund Act) of 1980, as amended, and pursuant to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP[b]), the Department of the Interior has been delegated the responsibility for undertaking response actions with respect to the release or threat of release of oil, petroleum products, hazardous substances, or pollutants and contaminants, that pose an actual or potential threat to human health or welfare, or to the environment. Under this authority, the Bureau of Land Management (BLM) may take an action to protect public land resources and public land users from hazardous substances that pose a threat or potential threat to human health and the environment. As the lead Federal agency for actions taken on public land administered by the BLM, the Bureau is responsible for the identification of all environmental laws that pertain to any CERCLA cleanup actions.
Occupational Safety and Health Standards (29 CFR §§1910 and 1926 - Occupational Safety and Health Administration (OSHA)	• Provides regulations for safety in the workplace. • Provides regulations for construction safety. • Requires a Hazard Communication Plan to include identification and inventorying of all hazardous materials for which Material Safety Data Sheets will be maintained and employee training in safe handling of said materials.
State	
Title 8, CCR Chapters 3, 4, and 7, Occupational and Industrial Safety - California Occupational Safety and Health Administration (CalOSHA)	• Establishes requirements for safe working conditions and safety-related reporting in the State. • Requires a Hazard Communication Plan to include identification and inventorying of all hazardous materials for which Material Safety Data Sheets will be maintained and employee training in safe handling of said materials.
	• The Office of Emergency Services (OES) coordinates overall state agency response to major disasters in support of local government. The OES is responsible for assuring the state's readiness to respond to and recover from natural, manmade, and war-caused emergencies, and for assisting local governments in their emergency preparedness, response, and recovery efforts. During major emergencies, OES may call upon all state agencies to help provide support. Due to their expertise, the California National Guard, California Highway Patrol, Department of Forestry and Fire Protection, Conservation Corps, Department of Social Services, and the Caltrans are the agencies most often asked to respond and assist in emergency response activities. In addition, pursuant to the Hazardous Materials Release Response Plans and Inventory Law of 1985, local agencies are required to develop "area plans" for response to releases of hazardous materials and wastes. These emergency response plans depend to a large extent on the business plans submitted by persons who handle hazardous materials. An area plan must include pre-emergency planning of procedures for emergency response, notification, coordination of affected government agencies and responsible parties, training, and follow up. The California Hazardous Materials Incident Reporting System is a post incident reporting system to collect data on incidents involving the accidental release of hazardous materials. Information on accidental releases of hazardous materials are reported to and maintained by OES.

Table 3.17-3 Major Laws, Regulatory Requirements, and Plans for Hazardous Materials

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
California Code of Regulations Title 5, §14010 - Standards for School Site Selection	• In selecting a school site, the California Department of Education, School Facilities Planning Division has identified safety factors that should be considered. Included in these Safety Factors is the proximity of high pressure pipelines that transport petroleum, petroleum products, natural gas pipelines, or other hazardous substances that could present a safety hazard to the proposed school campus site. Under these regulations, a high pressure pipeline is defined as a pipeline operating at a pressure of 80 pounds per square inch gage. • § 14010(h) states that "the site shall not be located near an above ground water or fuel storage tank or within 1,500 feet of the easement of an above ground or underground pipeline that can pose a safety hazard as determined by a risk analysis study, conducted by a competent professional." • § 14010 (u) states that "[a]t the request of the governing board of a school district, the State Superintendent of Public Instruction may grant exemptions to any of the standards in this section if the district can demonstrate that mitigation of specific circumstances overrides a standard without compromising a safe and supportive school environment."
Title 17, CCR, Div. 1, Chapter 5, SubChapter 4, Radiation	• Establishes requirements for licensing and handling of radiological and X-ray sources for industrial non-destructive testing (incorporates by reference Federal regulations contained in 10 CFR §20 with just a few exceptions).
Cal\EPA, CADTSC	• The Cal\EPA Department of Toxic Substances Control regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose "cradle to grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment.
The Hazardous Substances Highway Spill Containment Act	• This Act gives the California Highway Patrol the authority to respond to spills of hazardous materials on the state's highway system.
Local	
San Bernardino County Fire Department, Hazardous Materials Division (d)	• The San Bernardino County Fire Department – Hazardous Materials Division is the local agency responsible for the enforcement of a variety of hazardous materials management requirements. It is the state designated Certified Unified Program Agency (CUPA) for the County of San Bernardino (excluding the City of Victorville). The CUPA provides consolidation and consistency in reporting requirements, permit formats, inspection criteria, enforcement standards, and fees for various hazardous materials programs. The CUPA is required by state law to maintain a list of facilities within the County that are known to use, store, and/or generate hazardous materials/wastes. Facilities that handle hazardous materials or generate hazardous waste must obtain a permit from the CUPA. The San Bernardino County Fire Department manages six hazardous material and hazardous waste programs: – Hazardous Materials Release Response Plans and Inventory (Business Plan). – California Accidental Release Program. – Underground Storage Tanks. – Aboveground Petroleum Storage SPCC. – Hazardous Waste Generation and Onsite Treatment. – Hazardous Materials Management Plans and Inventory Statements under Uniform Fire Code Article 80. If construction yards in San Bernardino County will operate for two months or longer, the Applicant will have to submit to SBCFD their Hazardous Materials Business Emergency/Contingency Plan to obtain a permit to operate as a hazardous materials handler.

Table 3.17-3 Major Laws, Regulatory Requirements, and Plans for Hazardous Materials

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
City of Barstow General Plan-Safety Element (e)	• This Element specifically examines the potential risk from hazards to those who live and work in Barstow. The Hazards Element is also concerned with identifying ways of reducing the risks, property damage, injuries, or loss of life in the event of a natural or man-made disaster. In 1996, the California Integrated Waste Management Board approved the Barstow Household Hazardous Waste Element. • The implementation of the Goals and Policies of the City of Barstow General Plan would not result in any additional or significant hazards beyond those facing the City at the present time. This element emphasizes the importance of maintaining a comprehensive emergency preparedness plan which will aid decision making in the event of a major emergency or crisis.
City of Colton General Plan-Safety Element (c)	• Colton's emergency preparedness program is documented in the Emergency Response Plan, which is currently undergoing revisions and is in draft form. The emergency plan designates the steps to be taken in time of disaster and identifies possible shelter areas, the location of which to be designated at the time of the disaster.
City of Victorville General Plan-Safety Element (f)	• The Victorville Planning Area is traversed by major transportation arteries which include Interstate 15, US Highway 395, State Highway 18, and the Atchison, Topeka, and Santa Fe Railroad ROW. Transportation of hazardous materials occur along these routes which expose people to potential catastrophic events. Hazardous chemicals or gases may be released accidentally at an industrial site or from railcars or trucks transporting hazardous materials. Such an event could require evacuation, and depending on the hazard and its severity, evacuation may be required for a few hours or several days. The release of hazardous materials requires an immediate response to protect human health and safety, and/or the environment. • In recognizing the potential for release of hazardous materials and in compliance with Chapter 6.95 of the California Health and Safety Code, the City has adopted Chapter 6.49 of the Victorville Municipal Code which establishes a hazardous materials release response and inventory program.
Clark County Office of Emergency Management (Code, Chapter 3.04) (g)	• Created an integrated emergency management public safety coordination team that facilitates the coordination of multi-agency public safety projects (Ord. 2762 (part), 2002: Ord. 1881 §1 (part), 1996). The agency provides coordination support for the mitigation, preparation, response and recovery activities necessary for the protection of lives and property within Clark County. (Ord. 1881 §1 (part), 1996)

Table 3.17-3 Major Laws, Regulatory Requirements, and Plans for Hazardous Materials

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Nevada Revised Statute Emergency Management, Chapter 414 (g)	• General provisions of Nevada Revised Statute, Emergency Management include the following: – Eliminate or reduce the probability that an emergency will occur or reduce the effects of unavoidable disasters; – Test periodically plans for emergency operations to ensure that the activities of state and local governmental agencies, private organizations and other persons are coordinated; or – Restore the operation of vital community life-support systems and return 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.

Notes:

(a) Under Federal law, petroleum is regulated as a hazardous material and is subject to the Oil Pollution Act and Clean Water Act. However, petroleum is specifically excluded under Federal law as a hazardous substance under the CERCLA, and waste oil and petroleum are not indicated as hazardous waste under RCRA. In California, petroleum is regulated as a hazardous material. Under the California Underground Storage Tank program, petroleum is considered a hazardous substance, and under California Title 22/26, used and waste oil is classified and regulated as a hazardous waste.

(b) More commonly called the National Contingency Plan.

(c) Source: City of Colton 1987

(d) Source: County of San Bernardino 2005

(e) Source: City of Barstow 1997.

(f) Source: City of Victorville 1997.

(g) Source: Clark County 2008.

3.17.3 Environmental Consequences

3.17.3.1 Requirements and Focus of NEPA versus CEQA Analyses

Potential Impacts to be Evaluated Under NEPA

Based on the scope of the Proposed Project and alternatives, and the affected environment in which the project would be implemented, the following potential public safety and hazardous materials impacts have been identified for evaluation:

- Use, store, transport, or dispose of petroleum products and/or hazardous materials in a manner that results in a release to the aquatic or terrestrial environment in an amount equal to or greater than the reportable quantity for that material or creates a substantial risk to human health (addressed as Hazardous [HAZ]-1 [routine activities] and HAZ-2 [accidental releases] below);
- Mobilize contaminants in the soil or groundwater, creating potential pathways of exposure to humans or wildlife that would result in exposure to contaminants at levels that would be expected to be harmful (addressed as HAZ-3 below); or
- Expose workers to contaminated or hazardous materials at levels in excess of those permitted by the Federal Occupational Safety and Health Administration (FOSHA) in 29 CFR §1910 and the CalOSHA in CCR Title 8, or expose members of the public to direct or indirect contact with hazardous materials from Proposed Project construction or operations (addressed as HAZ-4 below).

CEQA Significance Criteria

Under California Environmental Quality Act (CEQA), the significance of impacts resulting from construction, operation, and decommissioning of the Project are evaluated using significance criteria provided in the checklist in Appendix G of the *California Environmental Handbook*. With respect to hazards and hazardous materials, the relevant CEQA significance criteria provided in Section VIII of the checklist are:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (addressed as HAZ-1 below);
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (addressed as HAZ-2 below);
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school (applicability discussed below);
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would create a significant hazard to the public or the environment (addressed as HAZ-3 below);
- Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan (applicability discussed below);
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands (addressed as HAZ-5 below).

The following significance criteria would not be applicable to the Proposed Project and are not discussed further in the analysis:

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school; and
- Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

The following paragraphs provide the reasons why these significance criteria are not applicable to the Proposed Project.

The Proposed Project pipeline or ancillary facilities would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school as defined in Section 21151.8 of the CEQA Statute. This Section provides clarification about the intention of this criterion. The statute specifies that:

> Any project involving the construction or alteration of a facility within 0.25 mile of a school that might reasonably be anticipated to emit hazardous air emissions, or that would handle an extremely hazardous substance or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code, that may pose a health or safety hazard to persons who would attend or would be employed at the school …

Section 25532 of the Health and Safety Code defines extremely hazardous substances as those listed in Appendix A of 40 CFR Part 355—The List of Extremely Hazardous Substances and Their Threshold Planning Quantities. Petroleum products are not included on this list. During operations, only liquid petroleum products would be transported. Therefore, this criterion is not applicable to the operations of the Proposed Project. Potential accidents that could occur are discussed in Impacts Haz-1, Haz-2a, and Haz-2b. These accidents would have similar to all areas where people gather whether they are schools, day care centers, businesses, hospitals, or sports venues."Hazardous air emissions" means emissions that are classified as a toxic air contaminant by the State Air Resources Board or by the air pollution control board in the Proposed Project area. Diesel-fueled engines are likely to emit air contaminants during construction of the Proposed Project. Potential impacts to all receptors of these emissions are addressed in the Air Quality and Climate Section, 3.6.

The Proposed Project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Major emergency evacuation routes in San Bernardino County are the following: I-10, I-210, I-15, I-40, Highway 138, Highway 18, State Highway 395, National Trail Highway (Oro Grande area about 10 miles north of Victorville), Foothill Road (southern end of pipeline near Rialto), and Baseline Road (southern end of pipeline near Rialto). Installation of the pipeline would not affect access to these evacuation routes because the pipeline would be bored or horizontally drilled under highways and most streets. During normal operations the pipeline would not impact access to evacuation routes because it is underground. Maintenance activities would be similar to construction activities and would not involve closure of highways or major roads.

3.17.3.2 Impact Analysis

This section identifies and evaluates the impacts under each alternative using the respective methodology prescribed under NEPA and CEQA. To compare impacts, this analysis defines the temporal scale (time), spatial extent (area), and intensity of impacts for each alternative. The analysis also includes an impact determination to satisfy CEQA. When significant impacts under CEQA occur, mitigation measures are outlined to reduce the impacts to less than significant levels. Mitigation measures (MMs) are compiled in Section 3.17.4, Summary of Mitigation.

Methodology

This analysis focuses on the potential for public and environmental exposure to hazardous materials as a result of Proposed Project activities. The ROW, as referenced in this analysis, includes the pipeline, alternative, and lateral routes. Three primary mechanisms for exposure were considered: improper handling or transport; reasonably foreseeable but inadvertent spills or releases; and ground disturbance on sites with known and unknown contamination. Analysis also considered potential effects on workers, the general public, and the environment.

Description of Hazardous Materials Associated with General Construction Activities

Construction equipment would require gasoline, diesel fuel, lubricants, and oils. Estimated consumption per spread per day is 500 gallons of gasoline and 2,000 gallons of diesel fuel. A mobile fuel tank would be used on-site (URS Corporation 2007). Measures to prevent fuel drips or leak include using a drip pan or bib underneath the nozzle. The Applicant or its contractor would have cleanup equipment on board all vehicles, such as absorbents. According to the Applicant, refueling, when practical, would occur at a temporary construction yard instead of on-site (URS Corporation 2009a)

Pipeline segments would be joined by welding. Field welding would be performed by qualified welders in accordance with API 1104 (Standard for Welding Pipe Lines and Related Facilities) and federal rules and regulations.

To protect the pipe from corrosion, state-of-the-industry pipeline coating would be applied at a qualified facility before pipe delivery to the construction site. Where welds are made to join pipe segments, field coating would be necessary to provide a continuous coating along the pipeline. After the pipe has been welded and radiographically inspected, a fusion-bond epoxy would be used to coat the welds. Radioactive and X-ray sources would be used for non-destructive testing of pipeline welds (URS Corporation 2007).

During construction, the Applicant would use five staging areas. Construction equipment stored at contractor staging areas would be refueled and maintained on site. Equipment would be regularly checked for leakage (URS Corporation 2007). The Applicant proposes to have a 300-foot setback from flowing streams and a 100-foot setback from dry desert washes for refueling (URS Corporation 2009a). According to the Applicant, engine maintenance on construction equipment would be performed regularly. All construction material and machinery transportation would use existing roadways. Welding machines would use diesel or unleaded fuel (URS Corporation 2007).

Upgrades at the existing Colton Station would connect and operate the new pipeline. A new electrical substation would also be required to provide additional power needed. Additional upgrades may include upgrades to tank piping, pump piping, lateral interconnects, pig launcher/retriever, product meters and existing electrical instrumentation and controls. Construction of all station upgrades would be confined to the property. According to the Applicant, specifications, codes, and regulations construction, inspection, testing, and maintenance for the pipeline would also apply to upgrade work within the stations.

Typical waste generation from pipeline construction includes short remnant segments of pipe, wastes generated by X-ray machines, welding and coating byproducts, and boxes and crates used to ship materials. The Applicant or their contractor would provide on-site trash receptacles for refuse generated by construction crews. Trash would be sorted according to material (i.e., plastic, paper, wood, and aluminum). Other construction wastes would include contaminated spoils; rubble from trenching paved areas; and water used to hydrostatically test the pipeline. The non-hazardous wastes would be hauled to a sanitary landfill; and the used hydrostatic test water would be treated as required and discharged under permit. Construction crews would use portable chemical toilets serviced by a licensed septic waste handler.

Proposed Project/Proposed Action (Alternative 1)

Impact HAZ-1: Create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials.

Hazardous materials that would likely be used and stored during construction included petroleum products (diesel, gasoline, hydraulic fluid, transmission oil, lubricating oil and grease, waste oil, mineral oil), welding gases, paint, solvents, methanol, antifreeze, water-soluble chemicals, corrosion inhibitors, scale inhibitors, drag-reducing agents, and biocides. These materials would be transported on roads. Hazardous material, such as fuels, oils, paints and solvents, would be used at pump stations and substations. All hazardous materials that would be used during construction or operations have to be containerized, handled, transported, and disposed of according to state and Federal regulations. The Applicant, or its contractor, would be required to maintain hazardous materials in proper storage containers and with sufficient secondary containment in accordance with Federal and State regulations. As part of its Stormwater Pollution Prevention Plan, the Applicant would be required to develop a spill prevention and control plan for construction. Implementation of this plan would reduce the potential for spills to occur.

Typical hazardous waste generation from pipeline construction includes wastes generated by X-ray machines, welding and coating byproducts, and waste oils and lubricants. Hazardous waste generated during construction would be placed in drums or roll-offs designed for transporting hazardous waste and transported under manifest by a licensed hazardous waste hauler to a permitted hazardous waste treatment or disposal facility in accordance with state and federal regulations (URS Corporation 2009a). Details as to the specific landfills, recyclers, or hazardous waste treatment or disposal facilities are not available at this time. The Applicant would likely generate waste oil and lubricants during operations and would be required under state and federal regulation to use the similar procedures for any hazardous waste generated.

The safe transportation of liquids in pipelines is regulated under 49 CFR Part 195 (transportation of hazardous liquids by pipeline; [Appendix B]). Therefore, the potential for impacts associated with routine operations is highly regulated, and managed according to existing policies and plans. The Applicant has an Integrated Contingency Plan for operations of its existing facilities and pipelines, which would have to be updated for the Proposed Project. Implementation of this plan would reduce the potential that spills could occur.

Under NEPA, no impacts to the public or the environment through conventional use, storage, transportation, disposal of petroleum products and/or hazardous materials during construction and operations are anticipated. All activities associated with hazardous materials are highly regulated and the Applicant and its contractor would be obligated to comply with these regulations. Workers would not be exposed to hazardous materials at levels exceeding Occupational Safety and Health Administration (OSHA) and California Occupational Safety and Health Administration (CalOSHA) standards and the public would not be exposed to hazardous materials directly or indirectly. Under CEQA, the routine use, transport, or disposal of hazardous materials associated with construction or operations of the pipeline does not create a significant risk to the public or the environment; therefore, the impacts would be less than significant and no mitigation would be necessary.

Impact HAZ-2: Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

The major hazards associated with the operation of petroleum liquids pipelines are the potential release of petroleum products, fires, and explosions. Releases of petroleum products could result in the contamination of soil, surface water, and/or groundwater. Fires occurring as a result of a release from a pipeline can also cause the release of potentially toxic products of incomplete combustion and can also lead to secondary fires of nearby vehicles or structures, or wildfires. A pipeline accident has the potential to cause a significant local impact, including injuries and fatalities to members of the public, property damage, disruption of community activities and traffic patterns, and disruptions to the local energy supply. A more detailed discussion of pipeline safety is included in Appendix B, which provides the applicable regulations, pipeline safety features, a history of pipeline accidents, and a detailed discussion of risks to the public. This section summarizes that information.

The Department of Transportation (DOT) is mandated to provide pipeline safety under the United States Code, Title 49, Chapter 601. The Pipeline and Hazardous Materials Safety Administration (PHMSA) acting through the Office of Pipeline Safety (OPS) administers the national regulatory program to ensure the safe transportation of refined petroleum products and other hazardous materials by pipeline. Many of the regulations are written as performance standards, which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety.

Hazardous Liquids Pipeline Accidents

PHMSA pipeline regulations reflect the commodity that is being transported. Since the Proposed Project is transporting liquid petroleum products, the applicable regulations are those for hazardous liquids pipelines. Hazardous liquid means petroleum, petroleum products, or anhydrous ammonia (49 CFR 195.2). There are 168,900 miles of onshore and offshore Hazardous Liquid pipeline in the U.S. (PHMSA 2009a).

In general, potential damage or injury that might occur as a result of unplanned releases of petroleum products from a pipeline depends on: (1) how the pipeline fails, e.g., a leak versus a rupture; (2) the nature of the product released; (3) the time to ignition (immediate, delayed, or no ignition); and (4) whether secondary fires in nearby structures, vehicles, or wild lands are ignited as a result of a fire at the pipeline.

PHMSA defines significant incidents as those pipeline incidents where:

1. A fatality or injury occurs that requires in-patient hospitalization;
2. The total costs are $50,000 or more as measured in 1984 dollars;
3. There is a release of five or more barrels of highly volatile liquid releases or other liquid releases of 50 barrels or more; or
4. There is a liquid release that results in an unintentional fire or explosion (PHMSA 2009b).

From 1988 to 2008, a total of 2,878 significant incidents were associated with onshore hazardous liquids pipelines (Table 3.17-4).

Table 3.17-4 United States Onshore Hazardous Liquid: Significant* Incidents Summary Statistics, 1988 to 2008

Year	Number	Fatalities	Injuries	Property Damage	Gross Barrels Lost	Net Barrels Lost
1988	164	2	19	$49,230,900	182,478	98,777
1989	135	3	38	$11,847,846	201,494	122,735
1990	137	3	7	$21,571,707	122,825	53,443
1991	165	0	9	$50,790,811	200,209	55,574
1992	165	5	38	$47,542,391	133,778	66,841
1993	152	0	10	$35,366,589	115,764	57,165
1994	176	1	(D) 7	$78,963,641	159,670	109,535
1995	154	3	11	$39,375,923	109,928	52,960
1996	171	5	13	$104,774,471	153,622	94,288
1997	153	0	5	$51,625,227	188,935	99,256
1998	131	2	6	$63,178,505	138,078	51,190

Table 3.17-4 United States Onshore Hazardous Liquid: Significant* Incidents Summary Statistics, 1988 to 2008

Year	Number	Fatalities	Injuries	Property Damage	Gross Barrels Lost	Net Barrels Lost
1999	141	4	20	$96,380,171	162,839	100,446
2000	128	1	4	$154,206,614	106,318	54,655
2001	104	0	10	$26,585,753	98,040	77,323
2002	129	1	0	$50,401,042	95,649	77,254
2003	120	0	5	$54,538,762	80,041	50,454
2004	124	5	16	$72,503,033	76,229	58,053
2005	118	2	2	$126,702,928	136,006	44,772
2006	105	0	2	$46,301,185	135,931	53,394
2007	104	4	10	$49,108,403	89,609	68,460
2008	77	0	1	$41,267,260	115,601	90,550
Totals	2,853	41	233	$1,272,263,171	2,803,045	1,537,127
5 Year Average (2003-2007)	114	2	7	$69,830,863	103,563	55,027
10 Year Average (1998-2007)	120	2	8	$73,990,640	111,874	63,600
20 Year Average (1988-2007)	139	2	12	$61,549,796	134,372	72,329

Source: PHMSA 2009b

The number of significant incidents has decreased over time. From 1988 to 2008, there were 43 fatalities and 234 injuries. Total costs of damages exceeded $1.3 billion.

From 1988 to 2008, 107 were defined as serious incidents, defined as an incident involving a fatality or injury. An average of five serious incidents occurred per year (PHMSA 2009b).

The causes of these incidents were as follows: corrosion (23.6 percent); excavation error (21.6 percent); human error (7.2 percent); material failure (20.4 percent); natural force damage (3.5 percent); other outside force damage (1 percent); and other causes (22.7 percent) (PHMSA 2009c).

Kinder Morgan's Recent Pipeline Safety History

From April 1, 2008 to March 31, 2009, Kinder Morgan had an average of 0.071 significant incidents per 1,000 miles of onshore pipeline within the ROW, while the industry average was 0.466 in the 2008 calendar year. Over the past three years, Kinder Morgan had an average of 0.316 failures per 1,000 miles of onshore pipeline, while the industry average was 0.478. From April 1, 2008 to March 31, 2009, Kinder Morgan spilled an average of 0.053 barrels per mile of onshore pipeline within the ROW, while the industry average was 0.456 barrels spilled per mile during the calendar year 2008. Over the past three years, Kinder Morgan spilled an average of 0.258 barrels per mile of onshore pipeline, while the industry average was 0.412 barrels (Kinder Morgan 2009).

Several incidents have occurred on the existing Calnev Pipeline System (Appendix B) and resulted in changes along the pipeline route. On May 12, 1989, a 69-car Southern Pacific train traveling down the Cajon Pass derailed into the Duffy Street neighborhood of San Bernardino.

On May 25th, Calnev's 14-inch gasoline pipeline that was buried beneath the tracks started burning. National Transportation Safety Board (NTSB) investigators concluded that the pipeline was damaged by the cleanup crews' heavy equipment. Approximately 300,000 gallons of fuel were spilled (Martin 2004). As a result of the 1989 Duffy Street train derailment and pipeline rupture, the following measures were taken:

- Replacement of side-swing check valves with top-hinged check valves;
- Replacement of the existing check valve at the accident site with a motor-operated valve;
- Establishment of a maximum flow rate for the Supervisory Control and Data Acquisition (SCADA) system over which the pumps would shut down;
- Replacement of the existing pipe at the accident site with thicker walled pipe; and
- Motor operated valves now close automatically if the pressure in the pipeline drops below alarm settings (Kinder Morgan 2009).

Another notable event occurred on November 21, 2004. The 14-inch Calnev pipeline was ruptured due to an outside force while transporting gasoline. The incident occurred about 2,000 feet north of Interstate 15 in San Bernardino County on Bureau of Land Management land. Kinder Morgan isolated the pipeline area and responded to the release. The total quantity of contaminated soil removed from the spill area was 10,300 tons. Damage to the pipeline was thought to be from a third party. Since this incident, the Applicant has made several enhancements to the existing pipelines. These improvements included increasing ROW protection efforts; providing inspectors when third-party work is conducted within 10 feet of Kinder-Morgan pipelines; and requiring hand digging within two feet of Kinder-Morgan pipelines.

In general, it is the Applicant's policy to prevent property damage or injury to the greatest extent possible and to fairly compensate for damages related to its pipeline (Kinder Morgan 2009).

Pipeline Integrity Management

Pipeline regulations require hazardous liquid pipeline operators to develop a Pipeline Integrity Management Program for pipelines that could affect a high consequence area unless the operator demonstrates through a risk assessment that the pipeline could not affect this area. A high consequence area is a commercially navigable waterway; a high population area; a concentrated population area, such as an incorporated or unincorporated city, town, village, or other designated residential or commercial area; or an unusually sensitive area, such as critical ecological community, a migratory water-bird concentration area, or habitat for threatened or endangered species.

For pipelines constructed after 2001, the integrity management program must be in place within one year of the start of operations. The program requires a baseline assessment plan that includes:

- Methods selected to assess the integrity of the pipeline;
- Schedule for completing the integrity assessment; and
- An explanation of the assessment methods selected and evaluation of risk factors considered in establishing the assessment schedule.

Required Pipeline Design Safety Features

As part of its application for the Proposed Project, the Applicant or its contractor would certify that the pipelines and aboveground facilities associated with the Proposed Project would be designed, constructed, operated, and maintained in accordance with or exceeding the DOT minimum federal safety standards contained in 49 CFR Part 195 – Transportation of hazardous liquids by pipeline. These regulations, which are intended to protect the public and prevent hazardous liquids pipeline facility accidents and failures, include specifications for material selection and qualification; minimum design requirements; valve locations; and protection of the pipeline from atmospheric corrosion (Appendix B). The Proposed Project would be subject to the versions of codes and standards in effect at the time that the design is initiated.

Some of the safety features that the Applicant would be required to install and implement are an automatic monitoring of pipeline pressure and other conditions using a SCADA system and routine internal pipeline inspections (including smart pigs). A more detailed discussion of these issues is included in Appendix B. Implementation of these measures would reduce the chances for potential deterioration or incidental damage to the pipeline to go undetected and unrepaired.

Safety features that the Applicant has already integrated into its design are described below:

- Construction:
    - Welding: 49 CFR 195 requires that 10 percent of welds be radiographically inspected; Calnev would exceed this requirement by inspecting 100 percent of welds on the pipeline portion of the Proposed Project.
    - Pipeline Coating: To protect the pipe from corrosion, state-of-the-industry pipeline coating would be applied.
    - Hydrostatic Testing: Hydrostatic testing would be performed after construction and before startup.
    - Pipeline Marking: A colored warning tape would be buried from approximately 18 inches above the pipeline and extending to the ground surface to indicate the presence of a buried pipeline to third-party excavators.
- Operations:
    - SCADA system: SCADA is a computer system that gathers and analyzes real-time system operation 24-hours a day.
    - Pipeline Leak Detection System: A pipeline leak detection system would perform computerized surveillance of volumetric line balance, flow deviation and pressure deviation. Shipping pumps would be equipped with maximum and minimum shutdown devices that would automatically shut down the pipeline in case of a substantial pressure anomaly.
    - One Call System: The Applicant would use the State of California's "one call" system. This system provides a single toll-free number for contractors and individuals to call before digging in the vicinity of the pipeline.
- Maintenance:
    - Pigging: The Proposed Project would smart pig the line in accordance with DOT standards. Pigs are used to clean and inspect the pipeline. "Smart" pigs are

devices used to inspect and record the condition of the pipe. They detect where corrosion or other damage has affected the wall thickness or shape.

  - Anomaly Excavation and Repair: If a smart pig detects an anomaly, crews would excavate the potentially compromised section(s) of pipeline and inspect the pipe. Product shipment would stop and the pipeline would be repaired. Crews would inspect the pipe and damaged pipe will be repaired.

- Monitoring:
  - Inspection: The pipeline and ancillary facilities of the Proposed Project would be visually inspected by line rider patrol, at a minimum of two times a week. Pipe protection level would be inspected annually at all test locations, quarterly at control points, and more than four times a year at cathodic protection systems to ensure corrosion control.

The Applicant has an Integrated Contingency Plan to address spill prevention, response, and cleanup for the existing Calnev Pipeline System in this area. It would have to be updated to evaluate the risks, worst case scenarios, response actions, etc., associated with the addition of the 16-inch pipeline. They also have an Emergency Plan that specifies measures to be taken in emergency scenarios. These documents identify the responsible parties for the incident command and the supporting organizations/agencies.

Impact Analysis

For the Proposed Project, the proposed 16-inch pipeline would be located for the most part in or adjacent to the same ROW as the existing 8-inch and 14-inch pipelines. A release from any of the pipelines could occur; however, in general, a release from a new pipeline would be less likely. In addition, the SCADA system and the pipeline leak detection system (described in Section 2.3.1) on the 16-inch pipeline would decrease the amount of potential fuel that could be released.

The Applicant has estimated the potential volumes of product lost due to a pipeline rupture at the different fault zones along the pipeline route. The locations of potential releases are specified in Table 3.2-7, and potential release volumes range 1,300 to 5,000 barrels (54,600 to 210,000 gallons.

Pipeline leaks and ruptures do occur. The causes vary, but are predictable, given the history of pipeline incidents. When an incident occurs, the consequences vary according to the size of the leak or rupture, the cause, the location, and the liquid being transported. Releases of petroleum products that occur during operations could be small or could be very large as illustrated by the potential fault-related release estimates above. The effect of any potential spill would depend of its location, particularly if it were on land or in a waterbody.

The history of pipeline incidents indicates that several pipeline incidents occur annually in Nevada or California. The Applicant's pipeline safety record indicates that their safety record is better than the general pipeline industry and significant incidents on the pipelines that they operate are infrequent. The Applicant has incorporated numerous safety and mitigation features into the pipeline design, as described above, to decrease the potential for an incident and the adverse effects if an incident were to occur. Despite these safety features and operations monitoring and preparedness, a pipeline incident could occur and its effects could be significant.

Under NEPA, a condition under which the use, storage, transport, or disposal of petroleum products and/or hazardous materials results in the release of petroleum products, hazardous material, or hazardous waste to the aquatic or terrestrial environment in an amount equal to or greater than the reportable quantity for that material could create a substantial risk to human health. The history of releases from hazardous liquids pipelines suggests that the potential exists. In addition, workers could be exposed to hazardous materials at levels in excess of OSHA and CalOSHA standards and the public could be exposed to hazardous materials directly or indirectly. Therefore, a spill during operations would represent a minor to major adverse effect according to NEPA whose duration could range from short-term to long-term.

Under CEQA, there is the potential for a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous material into the environment given the historical record of releases from hazardous liquid pipelines (Appendix B). The Applicant has integrated safety measures into its design that have already been discussed; however, the potential impact would remain significant after mitigation. To minimize the potential for accidental releases, spill prevention and containment is necessary for the safe use and management of hazardous materials on the construction ROW during construction. The implementation of the following mitigation measure would decrease the potential of a spill and or impacts to sensitive resources.

- **MM HAZ-2a: Hazardous Materials Business Emergency/Contingency Plan.** The Applicant, or its contractor, would prepare and implement a Hazardous Materials Business Emergency/Contingency Plan (HMBE/CP) that would include hazardous waste management procedures and emergency response procedures, including emergency spill cleanup supplies and equipment. This plan would be valid during Project construction and operation.
- **MM HAZ-2b: Spill Prevention and Response Plans.** Spill Prevention Control and Countermeasures (SPCC) plans would be located at all Calnev terminals and outline maintenance measures and guidelines for preventing releases. Additionally, Proposed Project operations personnel would be trained in the Incident Command System and oil spill containment and cleanup procedures as defined by the Oil Spill Response Plan (OSRP). The OSRP has already been approved by appropriate federal, state, and local agencies (including Department of Fish and Game, Office of Spill Prevention and Response). The OSRP is required under California state and federal regulations (SB 2040 and 40 CFR 300, the Hazardous Substances Pollution Contingency Plan).
- **MM HAZ-2c: Avoid placement of pipeline with 1,500 feet of school proposed in Renaissance Plan.** The proposed pipeline route will not be placed within 1,500 feet of the school proposed in the Rialto Airport Redevelopment Project, the Renaissance Plan.

Implementation of MM HAZ-2a, HAZ-2b, MM WR-1a, Hazardous Material Storage and Usage, and MM WR-1b, Management of Staging Areas to prevent the release of hazardous materials/wastes would minimize the chances of a release of hazardous materials/wastes (Section 3.5). Therefore, this impact would be reduced to below the level of its significance criteria under CEQA. Although the potential for, and magnitude of, releases would be reduced, the potential would still exist. This potential would continue to be a residual effect under NEPA.

Impact HAZ-3: Construction or operation of the pipeline would result in the exposure of the public or environment to existing contamination.

A list of sites with known or suspected shallow contaminated soil and/or groundwater is provided in Appendix B. In addition, the County of San Bernardino identified the location of mining mill wastes between MP 88 and MP 89. During construction activities, first the ROW would be prepared and then a six-foot deep 30-inch wide trench would be cut. Construction crews could potentially encounter contaminated soil or water during trenching and boring activities. In addition, an unknown or unrecorded disposal site may be encountered. If potential contamination is uncovered, members of the public could be exposed through direct contact or inhalation of contaminated materials. Adverse health effects, however, are unlikely to occur from a short-term exposure to contaminated soils or waters.

Under NEPA, the unearthing or exposure of contaminated soil and/or groundwater could present a direct, adverse impact because people could be exposed to contaminants or the activity could cause the migration of the contaminants to a sensitive receptor. In addition, contaminants in the soil or groundwater could be mobilized creating potential pathways of exposure to humans or wildlife that could result in exposure to contaminants at levels that could be expected to be harmful. Workers could be exposed to hazardous materials at levels in excess of OSHA and CalOSHA standards and the public could be exposed to hazardous materials directly or indirectly. This impact would be minor to moderate and temporary because the Applicant would be obligated to address it immediately.

Under CEQA, the exposure of contaminated soil and/or groundwater would be a potentially significant impact because it could create a significant hazard to the public or the environment; therefore following mitigation measures would be necessary:

- **MM HAZ-3a: Additional Investigation of Known Contaminated Sites in the Pipeline ROW.** The Applicant would conduct a more detailed investigation of the known contaminated sites (sites specified in Appendix B and the Calico mill waste site between MP 88 and MP 89) in the ROW. Further information shall be gathered about these sites to determine whether the depth of the known contamination could be exposed within six feet of the ground surface, the depth of construction activities. The investigations shall include additional reviews of available information from agencies and local authorities but shall also include sampling, if the ROW would pass through a known or suspected contaminated site. The results of the study shall be submitted to the BLM and San Bernardino County.
- **MM HAZ-3b: Contaminated Soil/Groundwater Contingency Plan.** The Applicant shall develop and implement a plan to address the potential for unearthing or exposing previously unidentified buried hazardous materials or contamination or shallow contaminated groundwater during construction activities, likely within six feet of the surface. The plan would detail the steps that the Applicant or its contractor would take to prevent the migration of contaminated soils or other materials offsite, the methods that would be used to limit potential exposure to workers or the public, and the remedial actions that would be undertaken. Site-specific plans should be developed for the areas where there is a high probability of encountering shallow contaminated soil or groundwater within six feet of the ground surface, the depth of construction (Appendix B).
- **MM HAZ-3c: Contaminated Site Surveys.** In areas where the alignments diverge from existing ROWs, the Applicant or its contractor shall conduct additional surveys (desktop reviews and/or sampling) to identify potential areas of soil and/or groundwater contamination. If contaminated sites are identified, the Applicant or its contractor shall implement its Contaminated Soil/Groundwater Contingency Plan (see MM HAZ-3a).

Much of the pipeline would pass through existing ROWs that have been previously cleared for the presence of hazardous materials. With the implementation of the measures identified above for areas where the pipeline would diverge from existing ROWs, any newly discovered contaminated soils would be handled to minimize exposure of workers and the public to these contaminants. Therefore, this impact would be either avoided or reduced to a level below its CEQA significance criteria. Although the potential for, and magnitude of, encountering contaminated materials would be reduced, the potential would still exist. This potential would continue to be a residual effect under NEPA.

Impact HAZ-4: Expose workers to contaminated or hazardous materials.

Pipeline workers could potentially be exposed to contaminated or hazardous materials through the following methods:

- Exposure to hazardous materials required as part of the construction process;
- Exposure to releases of hazardous materials from routine operations or accident conditions; or
- Exposure to contaminated soil or groundwater encountered during pipeline construction.

Of these methods, the potential for releases to occur from routine operations or accident conditions is addressed as part of HAZ-1 and HAZ-2 above, and the potential for exposure to contaminated soil and groundwater is addressed as part of HAZ-3 above. Therefore, this section will focus on potential exposure to hazardous materials that are used as part of the construction process.

Construction equipment would require gasoline, diesel fuel, lubricants, and oils. Construction would include welding, and a fusion-bond epoxy would be used to coat the welds. Typical waste generation from pipeline construction includes short remnant segments of pipe, wastes generated by X-ray machines, welding and coating byproducts, and boxes and crates used to ship materials. The Applicant or their contractor would provide on-site trash receptacles for refuse generated by construction crews. Trash would be sorted according to material (i.e., plastic, paper, wood, and aluminum). Other construction wastes would include contaminated spoils; rubble from trenching paved areas; and water used to hydrostatically test the pipeline. The non-hazardous wastes would be hauled to a sanitary landfill; and the used hydrostatic test water would be treated as required and discharged under permit. Construction crews would use portable chemical toilets serviced by a licensed septic waste handler.

Impact HAZ-5: Increase the potential for wildland fires and risk of loss, injury, or death involving fires.

The Proposed Project pipeline would cross forested, desert scrub, and urban environments, each of which has an associated fire risk. Some of the native ecosystems have a fire ecology, that is, fire is a natural part of their survival. Therefore, fires can be common.

Construction and operation activities could increase the potential for fire, such as certain types of brush clearing, welding, and blasting.

Brushing

The Applicant has not specified that removed brush would be windrowed. No brush would be burned. However, brush clearing, in and of itself, would increase the risk of wildland fires. The Applicant's contractor would be required to maintain on-site the necessary fire fighting equipment in accordance with the regulatory requirements. All brush clearing activities would have to be conducted in accordance with local rules and regulations to prevent forest fires.

Welding

The Applicant has specified that field welding would be performed by qualified welders in accordance with API 1104 (Standard for Welding Pipe Lines and Related Facilities) and federal rules and regulations. The Applicant would require as a safety precaution that a minimum of one, 20 pound dry chemical unit fire extinguisher would accompany each welding truck on the job (URS Corporation 2007).

Blasting

During construction, the Applicant may have to blast in certain areas if bedrock is encountered. Blasting has the potential to increase fire risks. The Applicant has developed a Conceptual Blasting Plan. In it, they state that they would:

- Use the minimum explosive charge necessary and use only properly licensed and certified contractors in accordance with state fire marshal requirements;
- Comply with all the applicable Bureau of Alcohol, Tobacco, Firearms, and Explosives regulations and National Fire Protection Association standards;
- Conduct blasting operations under the direct and constant supervision of experienced personnel legally licensed and certified to perform such activity in the jurisdiction where the blasting occurs;
- Require their blasting contractor to develop a site-specific blasting plan and health and safety plan;
- Ensure that property owners and residences along the ROW and facility owners (pipelines, power lines, buildings, etc.) in proximity of the blasting operations are notified at least 72 hours before blasting occurs;
- Provide all jurisdictional authorities, e.g., California State Fire Marshall, be given unrestricted access to all explosive records and site access for procedural inspections; and
- Ensure that warning signs, indicating the blast area, were erected and maintained for all entrances to the blast area. Warning sign lettering and other features would comply with the requirements or the jurisdictional authorities (URS Corporation 2009b).

In its Conceptual Blasting Plan, the Applicant has outlined the mitigation and safety measures that would have to be implemented. These safety measures address the prevention of scattering rock; the distance between blasting holes; signals to be used before and after blasting; and proper handling and disposition of explosives.

Operations

The Applicant has stated that the pump stations would have fire fighting and other emergency equipment, including carbon dioxide fire extinguishers inside the control rooms for electrical fires around panels and switchgear. Dry powder fire extinguishers would be located in the station yard for hydrocarbon fires. Fire suppressant foaming agents (alcohol type concentrate [ATC]) and related foam generation equipment would be stored at each pump station.

Emergency call lists would be posted at all stations, in case of accident, fire, or explosion (URS Corporation 2007).

Impact Analysis

Under NEPA, installation of a pipeline through areas with high (MP 29 to MP 34) or very high fire hazard (MP 10 to MP 29) severity zones represents a potentially moderate or major impact of short- or long-term duration. Under CEQA, there would be an increased risk of wildland fires during construction. Therefore there would be a potential to expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. According to the Applicant, no materials will be burned in the ROW. However, there still would be an increased risk of fire, which represents a significant impact; therefore, mitigation would be required.

- **MM HAZ-5a: Fire Prevention Measures.** The following fire prevention measures would be implemented by the Applicant or its contractor:
  - Maintain of a list of all relevant fire-fighting authorities for each work site.
  - Post the daily forest fire hazard at a location that is visible to all workers and make them aware of the potential implications during the daily safety briefing.
  - Have available equipment to extinguish fires and or construction of a fire break, including but not limited to: water trucks, portable water pumps, chemical fire extinguishers, shovels, axes, chain saws, etc. and heavy equipment.
  - Have and maintain an adequate supply of fire extinguishers for welding and brushing crews.
  - Use its resources required to contain any fire that occurs and notify local emergency response personnel.
  - Remove any flammable wastes generated during construction regularly.
  - Store all flammable materials used at the construction site away from ignition sources and in approved containers.
  - Allow smoking only in designated smoking areas.
  - Prohibit smoking where flammable products are present and when the fire hazard is high.
- **MM HAZ-5b: Blasting Fire Prevention Measures.** The Applicant, or its contractor, would patrol the blast area after the appropriate waiting period for any indication of fire or a fire hazard, focusing on those vegetated areas within and outside of the ROW. Any remaining shock tubes would be disposed of properly.

With the implementation of these mitigation measures, the risk of wildland fires would be reduced and therefore the Proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. The potential impact following would be less than significant under CEQA. Although the mitigation measures would reduce the potential for fires, the potential would still exist, and represents a residual effect under NEPA.

Alternative 2

Alternative 2 is a compilation of seven potential route variations and an alternative location for the proposed Silver Lake Pump Station, as identified by the Applicant and/or suggested by the public during scoping and during consultations with other agencies (see Appendix A for the Calnev Scoping Summary Report). These variations were identified as ways to avoid localized impacts to sensitive resources, reducing the environmental impact of the Proposed Project. Impacts to public safety and hazardous materials associated with the seven route variations are described below:

Bloomington Alternative

The Bloomington Alternative route variation, and the segment of the Proposed Project that it would replace along West Valley Boulevard and Cactus Avenue, do not have any differences with respect to public safety or hazardous materials. The Alternative route does not avoid, nor does it occur in closer proximity to, sensitive receptors such as schools. Neither segment crosses unstable soils or geologic hazards that could present a risk to the pipeline, and neither route is located in an area that would present a higher or lower potential for fire than the other route. Neither route would traverse an area where hazardous materials could be encountered and released during pipeline construction.

Therefore, the potential impacts of an accident or upset conditions during construction or operation associated with the use, transport, storage, and disposal of hazardous materials or petroleum products would be similar to those for the Proposed Project. For the Proposed Project, those impacts were evaluated to have the potential for moderate to major short to long-term impact under NEPA and significant impact that would be less than significant after mitigation under CEQA. All mitigation measures developed for the Proposed Project would also be applicable to the Bloomington Alternative route.

Rialto Alternative

The Rialto Alternative route variation would have a reduced level of potential impacts compared to the Proposed Project with respect to public safety and hazardous materials. Neither segment crosses unstable soils or geologic hazards that could present a risk to the pipeline, and neither route is located in an area that would present a higher or lower potential for fire than the other route. However, the Alternative route would avoid the location of several schools. With respect to schools, the Rialto Alternative would:

- Avoid the school planned as part of the Renaissance Project;
- Avoid the Community Christian Pre-School
- Avoid Carter High School;
- Be further from Grimes Elementary School; and
- Be further from Dunn Elementary School.

No law or regulations specifically restrict the siting of pipelines near existing schools. However, siting the pipeline in a location further from the schools than in the Proposed Project would result in a lower potential for impacts to the schools.

The Rialto Alternative would include a longer and more circuitous route, involving more curves and 90 degree turns in the pipeline, than the Proposed Route. This Alternative would increase the length of the pipeline in this area by 2.7 miles. In general, a shorter and more direct route presents a lower risk of potential accidents.

The Rialto Alternative route would situate the pipeline in closer proximity to potential hazardous material/wastes sites. With respect to potential unearthing or exposing contaminated soil or groundwater, there are multiple locations on the Rialto Alternative route that are in close proximity to contaminated sites (Appendix B). There are multiple contaminated sites located between MP 7 and MP 15 on the Alternative route. These sites include inactive and active facilities, the area of the Rialto-Colton plume, and part of a National Priorities List site. The Rialto-Colton plume is a commingled plume with perchlorate and solvents, but groundwater is a depth of greater than 100 feet bgs (URS Corporation 2008). Potential impacts in these areas would be reduced or avoided through implementation of mitigation measures HAZ MM-3a, MM-3b, and MM-3c. Because these sites are expected to be easily avoided through the mitigation measures there are not expected to be an adverse impacts or CEQA significant impacts associated with the Rialto Alternative route.

Overall, the Rialto Alternative would have a reduced level of potential impacts compared to the Proposed Project with respect to public safety and hazardous materials, due to the avoidance of existing and planned schools. This Alternative route would also result in some increase in risks due to the longer and more circuitous route. However, these additional risks would be effectively mitigated. All mitigation measures developed for the Proposed Project would also be applicable to the Rialto Alternative route.

Wagon Train Road Alternative

Both the Wagon Train Road Horizontal Directional Drilling (HDD) Alternative route and the Proposed Project route that it would replace in the unnamed riparian area have associated risks. As discussed in Section 3.2, both routes in this area present the potential for geologic hazards to damage the pipeline and release hazardous materials. In the unnamed riparian area, the pipeline would be constructed in an area of potentially saturated soils, which could present the potential for liquefaction. Within the Wagon Train Road HDD area, the pipeline would be installed near the Cleghorn Fault. The risk of either hazard creating an actual impact is speculative, so it is impossible to suggest that one route would have a lower potential for impacts than the other. A release of material from either scenario would likely flow, by gravity, to the same place (the unnamed riparian area), so the potentially impacted resources would be the same for both alternatives.

Therefore, the potential impacts of an accident or upset conditions during construction or operation associated with the use, transport, storage, and disposal of hazardous materials or petroleum products would be similar to those for the Proposed Project. For the Proposed Project, those impacts were evaluated to have the potential for moderate to major short to long-term impact under NEPA and significant impact that would be less than significant after mitigation under CEQA. All mitigation measures developed for the Proposed Project would also be applicable to the Wagon Train HDD Alternative.

Phelan Road/Baldy Mesa Alternative

In the Phelan Road/Baldy Mesa area, neither the Proposed route or the Alternative route crosses unstable soils or geologic hazards that could present a risk to the pipeline. Neither route is located in an area that would present a higher or lower potential for fire than the other route. Neither route would traverse an area where hazardous materials could be encountered and released during pipeline construction.

The Phelan Road/Baldy Mesa Alternative route would avoid the location of the Baldy Mesa Elementary School and the Quail Valley Middle School. No law or regulations specifically restrict the siting of pipelines near existing schools. However, siting the pipeline in a location further than the schools than in the Proposed Project would result in a reduced potential level of impact to the school. It should be noted, however, that the existing pipelines already traverse the road in front of the schools, which were constructed after the 8-inch and 14-inch pipelines already existed.

The Phelan Road/Baldy Mesa Alternative would include a longer and more circuitous route, involving more curves and 90 degree turns in the pipeline, than the Proposed Route. This Alternative would increase the length of the pipeline in this area by 0.8 miles, and would add four 90 degree turns in the pipeline. The Alternative Route would also be placed in a new ROW, resulting in the existing and new pipelines being in two different locations in this area. The Proposed Route in this area would be shorter, would have no turns, and would be within the same ROW as the existing pipelines. In general, a shorter and more direct route, and co-location of lines in a single ROW, presents a lower risk of potential accidents.

Overall, the Phelan Road/Baldy Mesa Alternative would not result in reducing the level of potential impacts with respect to public safety and hazardous materials. Although the Alternative route would avoid the existing schools, it would also involve a longer pipeline, more circuitous route, and creation of a new pipeline ROW in an area where co-location is possible. All mitigation measures developed for the Proposed Project would also be applicable to the Phelan Road/Baldy Mesa Alternative route.

Zzyzx Alternative

The Zzyzx Alternative route variation, and the segment of the Proposed Project that it would replace, do not have any differences with respect to public safety or hazardous materials. The Alternative route does not avoid, nor does it occur in closer proximity to, sensitive receptors such as schools. Neither segment crosses unstable soils or geologic hazards that could present a risk to the pipeline, and neither route is located in an area that would present a higher or lower potential for fire than the other route. Neither route would traverse an area where hazardous materials could be encountered and released during pipeline construction. Therefore, the potential impacts of an accident or upset conditions during construction or operation associated with the use, transport, storage, and disposal of hazardous materials or petroleum products would be similar to those for the Proposed Project. For the Proposed Project, those impacts were evaluated to have the potential for moderate to major short to long-term impact under NEPA and significant impact that would be less than significant after mitigation under CEQA. All mitigation measures developed for the Proposed Project would also be applicable to the Zzyzx Alternative route.

Baker Alternative

The Baker Alternative route variation would not result in a reduction of potential impacts as compared to the Proposed Project with respect to public safety and hazardous materials. Neither segment crosses unstable soils or geologic hazards that could present a risk to the pipeline, and neither route is located in an area that would present a higher or lower potential for fire than the other route. However, the Alternative route would traverse through the town of Baker, while the Proposed route would bypass the town through an undeveloped area to the west and the north. Because excavation activities associated with development and utilities, which could result in damage to the pipeline, would be more frequent within the town than in the undeveloped area, there would be a slightly higher risk of a release on the Alternative route through town. Also, if any release did occur, it would be more likely to affect public safety on the Baker Alternative route than on the Proposed route.

The Baker Alternative route would traverse through an area with multiple former and present gas stations with soil and groundwater contamination near MP 144. The depth to the aquifer in this location is apparently shallow. Therefore, this area would need to be investigated further before this Alternative is selected. Impacts of unearthing or exposing contaminated soil and groundwater would be similar to those of the Proposed Project route under both NEPA and CEQA. Under NEPA, the impact would likely be minor to moderate and would likely be short-term in duration because the Applicant would be obligated to address it immediately. Under CEQA, the exposure of contaminated soil and/or groundwater would be a potentially significant impact because it could create a significant hazard to the public or the environment; therefore the following mitigation measures would be necessary: MM HAZ-3a, Additional Investigation of Probable Contaminated Sites in the Pipeline ROW; MM HAZ-3b, Contaminated Soil/Groundwater Contingency Plan; and MM HAZ-3c, Contaminated Site Surveys.

Overall, the Baker Alternative route would not result in a reduced level of potential impacts as compared to the Proposed Project with respect to public safety and hazardous materials. Although the risks of a release of hazardous material from existing contamination or pipeline damage would be low under both alternatives, the risk may be slightly higher for the Alternative route. These impacts would have the potential for moderate to major short to long-term impact under NEPA and significant impact that would be less than significant after mitigation under

CEQA. All mitigation measures developed for the Proposed Project would also be applicable to the Baker Alternative.

Silver Lake Pump Station Alternative

The Silver Lake Pump Station Alternative location would have a lower potential than the Proposed Project to have an adverse impact with respect to public safety and hazardous materials. Neither location is situated on unstable soils or geologic hazards that could present a risk to the pipeline, and neither is located in an area that would present a higher or lower potential for fire than the other route. However, the Alternative location would avoid placing the pump station in close proximity to the Baker Elementary and High School. No law or regulations specifically restrict the siting of pipelines near existing schools. However, siting the pump station in a location further from the school than in the Proposed Project would eliminate any potential impacts to the school.

Sunset Lateral to McCarran and Sunset Junction Alternative

The Sunset Lateral Alternative route would result in a reduced level of potential impacts than the Proposed Project with respect to public safety and hazardous materials. Neither location is situated on unstable soils or geologic hazards that could present a risk to the pipeline, and neither is located in an area that would present a higher or lower potential for fire than the other route. However, the Proposed Project in this area uses a lateral which extends from Bracken Junction, along Hacienda Avenue, and directly underneath the shopping mall connecting the Mandalay Bay casino to the Luxor casino. Although the Sunset Lateral Alternative route is also in a heavily populated urban area, and is 1.4 miles longer, the Alternative route would not pass in such close proximity to a densely populated area. While the risk of a release in this area is low, the impacts of a release on the Alternative route would likely be much lower than impacts on the Proposed route.

This alternative would also include the construction of a new junction at the intersection of Sunset and Valley View. Should this alternative be selected, the modification of the Bracken Junction would not occur, and the main 16-inch proposed pipeline route would stop at Sunset Junction rather than continue to Bracken Junction. The new Sunset Junction would be located near is a facility that had known soil and groundwater contamination near MP 232; however, the investigation of that area has been closed. Potential impacts in this area would be reduced or avoided through implementation of mitigation measures HAZ MM-3a, MM-3b, and MM-3c. Therefore, the new Sunset Junction and modification of the existing Bracken Junction would not have any differences with respect to public safety and hazardous materials.

Summary

Both the Proposed Project and Alternative 2 could have potential impacts to public safety and hazardous materials. Some of the route variations associated with Alternative 2, including the Rialto Alternative, Phelan Road/Baldy Mesa Alternative, Silver Lake Pump Station Alternative, and Sunset Lateral Alternative would result in a reduction of potential risks by locating the pipeline further away from persons or environmental resources that could be affected by a release of hazardous materials. Other variations, including the Rialto Alternative, Phelan Road/Baldy Mesa Alternative, Baker Alternative, and Sunset Lateral Alternative could present a slight increase in the probability of a release by adding 90 degree angles to the pipeline route, or by placing the pipeline within an area where damage is more likely. Finally, some variations would present similar risks to the Proposed Project either because risks on both the Proposed and Alternative segments are very low (Bloomington and Zzyzx Alternatives), or because both segments have an associated risk (Wagon Train HDD Alternative).

All mitigation measures developed for the Proposed Project would also be applicable to all of the Alternative routes. These mitigation measures would reduce the level of impacts under CEQA to less than significant.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative location, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. With respect to public safety and hazardous materials, Alternative 3 would incorporate the avoidance of potentially sensitive resources (schools and densely populated facilities) associated with the Rialto, Silver Lake Pump Station, and Sunset Lateral Alternative. In addition, Alternative 3 would avoid selecting the potentially higher risk of a hazardous material release associated with the Phelan Road/Baldy Mesa and Baker Alternatives. Overall, Alternative 3 would have a reduced potential to impact sensitive receptors, with respect to public safety and hazardous materials, than the Proposed Project or Alternative 2.

All mitigation measures developed for the Proposed Project would also be applicable to all of the Alternative routes. These mitigation measures would reduce the level of impacts under CEQA to less than significant.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, no new 16-inch pipeline and associated substation and lateral line infrastructure would be installed. No ground-disturbing activities would take place and potential impacts to public safety and hazardous materials resulting from current activities on the existing pipelines would remain unchanged. If the Proposed Project were not constructed, the existing refined petroleum products delivery systems would be used to meet current and future needs. Under that scenario, the existing 8- and 14-inch pipelines would remain in service. The existing refined product delivery systems include these two pipelines, truck, and rail delivery. Currently, a combination of four tanker trucks and 34,500 gallon capacity train tanks, which make three roundtrips per week to deliver 29,922 barrels of fuel per day, provide product delivery from Colton, CA to Las Vegas, NV.

If the No Action Alternative were to be selected, it is possible that the increase in demand could be met by an increase in truck and rail shipments. If products were transported by rail, the Union Pacific Railroad would be used. Dedicated trains, called "unit trains," consisting of 60 to 100 cars would be used (Clark County 2006). Table 3.17-5 provides estimates of the volume of fuel that could be delivered based on the size of the train cars and the number of deliveries.

Table 3.17-5 Potential Fuel Transport by Rail

Rail Car Capacity	24,500 Gallons	34,500 Gallons	24,500 Gallons	34,500 Gallons	24,500 Gallons	34,500 Gallons
Cars/Train	85	85	85	85	85	85
Trains/Week	1	1	2	2	3	3
Barrels/Day	7,083	9,974	14,167	19,948	21,249	29,922

Source: Clark County 2006

Unit trains would run from Colton, California to Las Vegas, Nevada. The facilities required would include a rail terminal in Colton, California as well as one in Southern Nevada for loading/off-loading the unit trains. The loading facilities would consist of a multi-tracked, looped rail spur, storage tanks, pumps, loading/off-loading stations and a rack for loading the fuel into tanker trucks for transport to the final delivery point. A linear unit train terminal would require about 50 acres of land. A loop unit train terminal would require about 100 acres of land. Once the fuel has been delivered to Las Vegas, it would then be off-loaded onto tank trucks, with a capacity of 8,800 gallons per truck, for delivery to final destinations (Clark County 2006). None of these options would deliver the same volume of fuel, 44,000 barrels per day, as the Proposed Project.

To deliver sufficient volumes of fuel by truck, a fleet of about 25 trucks with an 8,800 gallon capacity would be necessary. They would make the twice daily trips, delivering 10,476 barrels of fuel a day to the Southern Nevada region. A loading terminal would have to be constructed in Colton, California. Similar facilities would have to be constructed in Southern Nevada to offload the fuel. The highway driving distance between Colton's terminal and McCarran Airport is 226 miles; designated fuel trucks would likely make twice-daily trips for a total of 904 daily highway miles per truck per day (Clark County 2006). This option would not deliver the same volume of fuel, 44,000 barrels per day, as the Proposed Project.

History of Hazardous Materials Accidents via Rail and Highways

The Department of Transportation's PHMSA regulates and tracks incidents associated with all forms of transportation of hazardous materials. Beginning in 2002, PHMSA defined "serious incidents" as incidents that involve:

- A fatality or major injury caused by the release of a hazardous material;
- The evacuation of 25 or more persons as a result of release of a hazardous material or exposure to fire;
- A release or exposure to fire which results in the closure of a major transportation artery:
- The alteration of an aircraft flight plan or operation:
- The release of radioactive materials from Type B packaging;
- The release of over 11.9 gallons or 88.2 pounds of a severe marine pollutant; or
- The release of a bulk quantity (over 119 gallons or 882 pounds) of a hazardous material (PHMSA 2009d)

PHMSA defined *serious incidents* before 2002 as:

> Incidents that involve a fatality or major injury due to a hazardous material; closure of a major transportation artery or facility or evacuation of six or more persons due to the presence of a hazardous material; or a vehicle accident or derailment resulting in the release of a hazardous material.

Table 3.17-6 lists the serious incidents that have occurred associated with the transport of diesel, gasoline, and jet fuel from 2002 to 2009 in the United States and in California and Nevada via rail and truck.

Table 3.17-6 Diesel, Gasoline, and Jet Fuel Serious Incidents that occurred associated wit Rail, and Highways from 2002 to 2009

Commodity	Rail			Highway		
	US	CA	NV	US	CA	NV
Diesel	5	0	0	219	10	2
Gasoline	5	0	0	563	29	5
Jet Fuel	0	0	0	7	0	0
Total	10	0	0	789	39	7

Source: PHMSA 2009e

These data indicate that transport of these petroleum products via rail has fewer serious incidents than by transport via highway; therefore, it is likely to be safer. However, data were not available about the distance each product was transported by each travel mode. Therefore, it is not possible to evaluate the number of serious incidents per mile of transport. In addition, these may be inappropriate comparisons because the statistics do not provide the volume of petroleum product transported by each mode of transport.

With respect to safety, truck routes are on highways shared with the general public, while pipeline and railroad corridors operate on designated rights-of-ways. Although these corridors are in populated areas and cross water bodies, they usually present less potential exposure to the general public (Allegro Energy Consulting 2003).

Table 3.17-7 lists the significant incidents that have occurred associated with the transport of diesel, gasoline, and jet fuel from 2002 to 2009 in the United States and in California and Nevada via pipeline. The definitions for significant and serious incidents are different for hazardous materials transported via rail or highway and pipelines. Therefore, these statistics are not comparable. However, the severity of incident is similar. All these data suggest that there is less likely to be a serious or significant incident when petroleum products are transported in Nevada and that there appears to be the greatest likelihood of a serious incident occurring when petroleum products are transported via highways. As discussed above, these may be inappropriate comparisons because the statistics do not provide the volume of petroleum product transported by each mode of transport.

Table 3.17-7 Diesel, Gasoline, and Jet Fuel Significant Incidents[a] that have occurred associated with Pipelines from 2002 to 2009

Commodity	Pipelines		
	US	CA	NV
Diesel	62	8	0
Gasoline	137	20	0
Jet Fuel	25	7	0
Total	224	35	0

Source: PHMSA 2009 f, g,h

Note:

(a) Significant Incidents as those incidents reported by pipeline operators when any of the following conditions are met: fatality or injury requiring in-patient hospitalization; $50,000 or more in total costs, measured in 1984 dollars; highly volatile liquid releases of five barrels or more or other liquid releases of 50 barrels or more; and liquid releases resulting in an unintentional fire or explosion

A study completed in 2003 provides greater clarification regarding the relative safety of each mode of transport for petroleum products. In 2000, 66% of petroleum products were transported via pipelines or 6,100 billion barrel miles. Two percent of petroleum products were transported by rail and 3.6 percent by truck. The remainder was transported by water carriers. With respect to routes, truck routes are on highways shared with the general public, while pipeline and railroad corridors operate on designated rights-of-way. Although these corridors are in populated areas and cross water bodies, they usually present less potential exposure to the general public. A study completed in 2003 comparing the different modes of transport found that over the period 1997 to 2001, pipelines had losses of about one gallon per million barrel miles, while rail had less than 0.5 gallons and truck transportation had almost two gallons lost per million barrel miles. With respect to other accidents over the period 1997 to 2001, truck transport had 103 times the number of deaths than pipeline transport, 32 times more injuries, and 46 times more fires/explosions. Rail transport had fewer deaths than pipeline transport, but there were 11 times more injuries, and twice as many fires/explosions (Allegro Energy Consulting 2003). These data suggest that overall pipelines are the safest mode of petroleum product transportation compared with rail, and truck.

Impact Analysis

The 8-inch pipeline was installed in the 1960s. Although it has the same type of pipeline safety features as more modern pipelines, such as SCADA and leak detection, there is a greater potential for corrosion and degradation of the pipeline coating, given its age. Therefore it has the potential for leaks. Overall, it appears that transport of refined petroleum products via highways is not as safe as via pipelines, but transport via rail may be safer than pipelines.

For this purpose of this evaluation, the construction phase would represent the construction of either the truck or rail loading/offloading facilities. The operations phase would be the loading, transport, and offloading of fuel.

The potential impacts from the routine use, transport, storage, and disposal of hazardous materials for the construction and operations phases for the no-action alternative would likely have no significant impacts because as discussed before all of these actions are highly regulated and the Applicant would have to comply with all the regulations. As discussed above, the routine transport of petroleum results in many accidents. Workers would not be exposed to hazardous materials at levels in excess of OSHA and CalOSHA standards and the public would not be exposed to hazardous materials directly or indirectly. Therefore, the potential impacts from the routine use, transport, storage, and disposal of hazardous materials and petroleum products either on rail or highway should not present an adverse impact under NEPA, and would be less than significant under CEQA.

There would be potential impacts of an accident or upset conditions during construction associated with the use, transport, storage, and disposal of hazardous materials or petroleum products because accidents do occur. Because the locations of the loading/offloading facilities are not known, it is not possible to assess the potential impacts. However, the implementation of the following mitigation measures probably would be applicable: MM WR-1a. Hazardous Material Storage and Usage and MM WR-1b. Management of Staging Areas to prevent the release of hazardous materials/wastes, and MM HAZ-2a Hazardous Material Contingency Plan.

The potential impacts of an accident or upset conditions during operations associated with the use, transport, storage, and disposal of hazardous materials or petroleum products potentially would be greater than for those for the Proposed Project route because petroleum products could be transported by highways. The available data suggests that transport of petroleum products via highway has the potential for more potential accidents than via pipelines. Transport via rail may reduce the potential for accidents. However, accidents of varying magnitude occur on all mechanisms of travel. Accidents involving the potential release of petroleum products have the potential for adverse long-term impacts under NEPA and significant impact that would remain significant after mitigation under CEQA.

Because the locations of the permanent structures associated with the No Action Alternative are not known, it is not possible to speculate whether there would be a potential to expose the public or the environment to existing soil or groundwater contamination or hazardous materials sites. Therefore, mitigation measures similar to the following would be applicable: MM HAZ-4a: Additional Investigation of Probable Contaminated Sites in the Pipeline ROW, MM HAZ-4b: Contaminated Soil/Groundwater Contingency Plan, and MM HAZ-4c. Contaminated Site Surveys.

Under normal circumstances, the No Action Alternative would not impair the implementation of or physically interfere with an emergency response plan. The potential impact would be less than significant and no mitigation measures would be required under CEQA.

The potential for wildland fires under the No Action Alternative potentially would be higher if the petroleum products were transported by highway, given that there are more incidents that occur on highways than on pipelines and the number of trips that would have to be made to deliver the same amount of fuel. The potential may be less if the petroleum products were transported by rail. Further discussion about the No Action Alternative can be found in Chapter 2 and in Sections 3.6, Air Quality and Climate, and 3.16, Transportation and Traffic.

3.17.3.3 Summary of Alternatives Comparison

In general, the types, locations, and magnitudes of the impacts of each of the Alternatives would be similar. However, as indicated below in Table 3.17-8, there are differences in impacts based on the route variations.

Table 3.17-8 Comparison of Impacts by Alternative

Proposed Project/Proposed Action (Alternative 1)	Alternative 2	Alternative 3 (Agency Preferred/Environmentally Superior Alternative)	No Action Alternative/No Project Alternative
Potential damage to pipeline could result in petroleum release.	Slightly longer route and more circuitous route has increased potential for damage. Alternative would avoid proximity to schools in Rialto, Phelan Road/Baldy Mesa, and Baker.	Slightly longer and more circuitous route has increased potential for damage. Alternative would avoid proximity to schools in Rialto and Baker.	Continued potential for damage to existing pipelines would remain the same. Increase in truck and rail deliveries would increase potential for accidental releases.

3.17.4 Summary of Mitigation

A complete list of mitigation measures is presented by impact in Table 3.17-9. The agency responsible for implementing each measure, location requiring mitigation, and timing for mitigation are also listed in the table.

Table 3.17-9 Mitigation Measures

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Impact HAZ-2: Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	**MM HAZ-2a:** Hazardous Materials Business Emergency/Contingency Plan. **MM HAZ-2b:** Spill Prevention and Response Plans. **MM HAZ-2c:** Avoid placement of pipeline with 1,500 feet of school proposed in Renaissance Plan.	Throughout pipeline right-of-way (ROW)	Bureau of Land Management (BLM)/San Bernardino County	Pre- and Post-Construction
Impact HAZ-3: Construction or operation of the pipeline would result in the exposure of the public or environment to existing contamination.	**MM HAZ-3a:** Additional Investigation of Known Contaminated Sites in the Pipeline ROW. **MM HAZ-3b:** Contaminated Soil/Groundwater Contingency Plan. **MM HAZ-3c:** Contaminated Site Surveys.	Throughout pipeline ROW	BLM/San Bernardino County	Pre- and Post-Construction
Impact HAZ-5: Increase the potential for wildland fires and risk of loss, injury, or death involving fires.	**MM HAZ-5a:** Fire Prevention Measures. **MM HAZ-5b:** Blasting Fire Prevention Measures.	Throughout pipeline ROW	BLM/San Bernardino County	Pre- and Post-Construction

References

Adams, R. 2009. Imminent and Substantial Endangerment Determination – IN THE MATTER OF: Private Properties of the Calico Tailings Area Yermo, San Bernardino County, California Township 10N Range 1 E Mount Diablo Baseline and Meridian. State of California, California Environmental Protection Agency, Department of Toxic Substances Control. November 10, 2009.

Allegro Energy Consulting. 2003. *The U.S. Oil Pipeline Industry's Safety Performance*. http://www.pipeline101.com/Introduction/transport.html. Accessed May 18, 2009.

Arcadis. 2009. Third Quarter 2009 Groundwater Monitoring Report New Ivanpah Evaporation Pond San Bernardino County, California Monitoring and Reporting Program No. 90-41 WDID No. 6B369003001 October 2009. http://geotracker.swrcb.ca.gov/profile_report.asp?global_id=L10007591063. Accessed March 31, 2010.

Cal Fire. 2007. *Fire Prevention Fact Sheet*. May 2007. http://www.fire.ca.gov/fire_prevention/downloads/FHSZ_fact_sheet.pdf. Accessed January 29, 2008.

California Department of Toxic Substances Control (CADTSC). 2009a. *Hazardous Waste and Substances Site List*. http://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&reporttype=CORTESE&site_type=csites%2copen%2cfuds%2cclose&status=act%2cbklg%2ccom&reporttitle=hazardous%20waste%20and%20substances%20site%20list. Accessed March 29, 2009.

California Department of Toxic Substances Control (CADTSC). 2009b. Envirstor Database. *Barstow Marine Corps Logistics Base Profile Report*. http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=36970001 Accessed on March 29, 2009.

California Department of Toxic Substances Control (CADTSC). 2009c. Envirostor Database. *D and M Drum Company Profile*. http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=36500010 Accessed March 29, 2009.

California Department of Toxic Substances Control (CADTSC). 2009d. *DTSC's Hazardous Waste and Substances Site List: Site Cleanup (Cortese List)*. http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm. Accessed March 29, 2009.

Cass, J. 2010. Lahontan Regional Water Quality Control Board. Telephone conversation with Louise Flynn, Ecology and Environment, Inc., regarding the Former Biogen Facility and Molycorp Mine. April 1.

City of Barstow. 1997. *City of Barstow General Plan. Hazards Element.* July 7. http://www.barstowca.org/uploads/belmt/iiihaz.pdf. Accessed October 16, 2008.

City of Colton. 1987. *City of Colton General Plan: Safety Element.* http://www.ci.colton.ca.us/Documents/Community%20Development/GP%207.0%20Safety%20Element.pdf. May 5.

City of Victorville. 1997. *City of Victorville General Plan, Safety Element*. July 15. http://ci.victorville.ca.us/uploadedFiles/AboutVictorville/safety_element.pdf. Accessed October 16, 2008.

Clark County School District. 2009. *Attendance Zone Advisory Commission (AZAC), 2008 to 2009*. http://azac.ccsd.net/index.htm. Accessed March 18, 2009.

Clark County. 2006. Clark County Blue Ribbon Commission to Improve the Reliability of Southern Nevada's Fuel Supply Summary Report. Adopted October 2006.

Clark County. 2008. Clark County Code, Title 3 Commissions, Boards and Districts, Chapter 3.04 Emergency Management. http://ordlink.com/codes/clarknv/index.htm. Accessed October 16, 2008.

Colton Unified School District. 2009. Construction on New High School. Official Website. http://www.colton.k12.ca.us/html/high_school__3.html. Accessed April 30, 2009.

County of San Bernardino. 2005. San Bernardino County Fire Department, Office of Emergency Services, Operational Area Multi-Jurisdictional Hazard Mitigation Plan. April 2005.

Environmental Data Resources (EDR), Inc. 2008. DataMap.

Hunter, Christy 2010. Lahontan Regional Water Quality Control Board. Telephone conversation with Louise Flynn, Ecology and Environment, Inc., regarding the Molycorp Mine wastewater pipeline and evaporation ponds. April 7.

Kinder Morgan. 2009. Data Gap Response. May.

Martin, Hugo. 2004. '89 Rail, Pipe Disaster Has a Bitter Echo. Los Angeles Times. February 16, 2004.

Pipeline and Hazardous Materials Safety Administration (PHMSA). 2009a. *Pipeline Basics.* http://primis.phmsa.dot.gov/comm/PipelineBasics.htm?nocache=4033. Accessed May 18, 2009.

Pipeline and Hazardous Materials Safety Administration (PHMSA). 2009b. Stakeholder Communications: Significant Pipeline Incidents. http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html?nocache=8375#_liquid. Accessed March 29, 2009.

Pipeline and Hazardous Materials Safety Administration (PHMSA). 2009c. Stakeholder Communications: Significant Pipeline Incidents By Cause. http://primis.phmsa.dot.gov/comm/reports/safety/SigPSIDet_1988_2008_US.html?nocache=6628#_liquid. Accessed March 29, 2009.

Pipeline and Hazardous Materials Safety Administration (PHMSA). 2009d. *Serious Incident Webpage.* http://phmsa.dot.gov/portal/site/PHMSA/menuitem.ebdc7a8a7e39f2e55cf2031050248a0 c/?vgnextoid=706851d415b7c110VgnVCM1000009ed07898RCRD&vgnextchannel=8010dd246007c110VgnVCM1000009ed07898RCRD&vgnextfmt=print. Accessed April 13, 2009.

Pipeline and Hazardous Materials Safety Administration (PHMSA). 2009e. *PHMSA Office of Hazardous Materials Safety: Incident Reports Database Search*. Searches for rail and highway serious incidents with diesel, gasoline, and jet fuel.https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/. Accessed April 10, 2009.

Pipeline and Hazardous Materials Safety Administration (PHMSA). 2009f. *Stakeholder Communications: Significant Incident Data Access Current Incident Data Files*. 2009-01-14 PHMSA Pipeline Safety - Significant Incidents.zip. http://primis.phmsa.dot.gov/comm/reports/safety/SIDA.html?nocache=1597. Accessed April 3, 2009.

Pipeline and Hazardous Materials Safety Administration (PHMSA). 2009g. *California Significant Incidents and Mileage Overview*. http://primis.phmsa.dot.gov/comm/reports/safety/CA_detail1.html?nocache=1346#_SigPanelliquidon. Accessed April 10, 2009.

Pipeline and Hazardous Materials Safety Administration (PHMSA). 2009h. *Nevada Significant Incidents and Mileage Overview*. http://primis.phmsa.dot.gov/comm/reports/safety/NV_detail1.html?nocache=4875#_SigPanelliquidon. Accessed April 10, 2009.

Reeder, W. 2010. Memo from Wes Reeder, County Geologist Interoffice Memo to Carrie Hyke, Supervising Planner - Potential soil contamination, Daggett segment of the CALNEV pipeline project. January 21, 2010.

Resource Concepts, Inc. 2005. *Nevada Community Wildfire Risk/Hazard Assessment Project Clark County*. June 2005. Prepared for the Nevada Fire Safe Council.

URS Corporation. 2007. *BLM Application for Right-of-Way Grant (Standard Form 299) for the Calnev Expansion Project*. June 15.

URS Corporation. 2008. *Calnev Expansion Project Environmental Contamination Assessment. Prepared for Calnev Pipeline, LLC*. November.

URS Corporation. 2009a. Calnev Pipeline Project, Data Gap Responses. Received March and April.

URS Corporation. 2009b. *Calnev Expansion Project Conceptual Blasting Plan for Calnev Pipeline, LLC*. April.

U.S. Environmental Protection Agency. 2010. Toxics Release Inventory. Envirofact Report: Molycorp Minerals LLC Mountain Pass Mine. http://iaspub.epa.gov/enviro/tris_control.tris_print?tris_id=92366MLYCRI15AN. Access March 25.

3.18 Cumulative Scenario and Impacts

Introduction

In accordance with National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] 1508.25(c)) and Council on Environmental Quality (CEQA) (CEQA Guidelines Section 15130 et seq., this Environmental Impact Statement/Environmental Impact Report (EIS/EIR) analyzes cumulative impacts of the Calnev pipeline expansion project in conjunction with other developments that affect or could affect the project area. NEPA and CEQA have similar definitions of "cumulative impact." According to NEPA, a cumulative impact is the impact on the environment that results from the incremental impact of the project when added to other past, present, and reasonably foreseeable future actions (40 CFR Section 1508.7). According to CEQA, the term refers to two or more individual effects that are considerable when taken together, or that compound or increase other environmental impacts (CEQA Guidelines Section 15355). CEQA requires the cumulative impacts discussion to reflect the likelihood that the impacts would occur and their severity if they did occur, but allows the discussion to contain less detail than must be provided for individual impacts. To comply with both NEPA and CEQA, a cumulative scenario has been developed that identifies and evaluates projects that are reasonably foreseeable or that are already existing within the cumulative study area or that would be constructed or commence operation during the timeframe of activity associated with the Proposed Project. According to federal requirements, an adequate cumulative impacts analysis must not only describe related projects but must enumerate the environmental effects of those projects. In addition, the analysis must consider the interactions among these multiple activities. To comply with NEPA, an analysis of the aggregation of impacts of existing and reasonably foreseeable future projects in combination with the Proposed Action is provided.

Cumulative Projects

The projects that make up the cumulative scenario are located in close proximity to the Proposed Project within the cumulative study area and are either completed, or reasonably foreseeable based on existing decisions, funding, or formal proposals. A project is included in this cumulative analysis if information on the project was available in the BLM's database or identified during agency scoping or in another published cumulative analysis as of January 31, 2011.

Table 3.18-1 lists reasonably foreseeable future projects within or near the Proposed Project route, including project status, which are likely to contribute to a cumulative impact. These projects include renewable energy, transportation, infrastructure improvement, pipelines, and other projects on BLM land and under local jurisdiction. Table 3.18-2 includes existing projects along the Proposed Project that also could contribute to cumulative impacts Figures 3.18-1 through 3.18-9 show the locations of these projects.

Table 3.18-1 Reasonable and Foreseeable Projects with Potential Cumulative Impacts by Location

New Number	Location	Project Title	Project Description	Status
City of Colton				
2	Agua Mansa Road and Riverside Avenue	Agua Mansa Commerce Center/Tentative Tract Map 18250	13-lot subdivision on 94.18 acres.	EIR approved Planning Complete
City of Rialto				
3	503 East Santa Ana Avenue and Riverside Avenue	EnerTech's Regional Biosolids Processing Facility at City of Rialto Waste Water Treatment Plan	Biosolids processing facility (Waste-to-energy)	Phase 1 complete; Phase 2 on hold
1	Cactus Avenue and El Rivino Road	Rialto Commerce Center	3.4 million sq. ft. of industrial warehousing and distribution on a 159-acre site.	Under environmental review.
3	E. Santa Ana Avenue and Riverside Avenue	City of Rialto Waste Water Treatment Plant Master Plan / Expansion	Capacity of Plant 5 would be doubled by duplicating each major piece of equipment.	Phase I under construction. Phase II under environmental review. Phase I- Construction Complete
City of San Bernardino				
8	I-15 and Kenwood Avenue	Cajon Well Transmission Main Replacement Project	A new water pipeline connection between existing wells and the City water distribution system in Cajon Creek, and replacement of approximately 750 feet of water pipelines.	Approved Planning Complete
4	Institution Road and Cajon Blvd	Grade Separation	Grade separation and bridge to be constructed over railroad and Cajon Blvd.	Under review. Estimated construction to be completed within 3 years. Proposed Project
5	7250 North Cajon Blvd.	125-acre, three-building industrial complex	New FedEx Building.	Project/Construction Complete.
City of Victorville				
13	Innovation, Phantom, Perimeter Road	Construction of a High Pressure Natural Gas Pipeline at the Southern California Logistic Airport	High pressure natural gas pipeline to provide natural gas from the Kern River Gas Company to the Southern California Logistics Airport.	Pending city response

Table 3.18-1 Reasonable and Foreseeable Projects with Potential Cumulative Impacts by Location

New Number	Location	Project Title	Project Description	Status
9	State Route (SR)-18 and US 395	High Desert Corridor	Construct nineteen miles of four to six general purpose lanes for a new high capacity limited access facility (SR-18T, Post Mile 15.0/35.9) in the Victor Valley Area.	Under environmental review.
City of Adelanto				
14	Auburn Avenue and Jonathan Street	Adelanto Wastewater Treatment Plant Expansion	Expansion of existing wastewater treatment facility to increase plant capacity from 1.5 to 4.0 million gallons per day.	Approved Planning Complete
12	South side of industry way between Koala and Beaver	LDP 09-05	1.5 MW solar power generation	Conditional Use Permit (CUP) application filed July 27, 2010; Project approved but has been challenged and is in appeals process with the City Council
11	SW corner of Seneca and Richardson	LDP 10-04	20 MW Solar Farm	CUP application filed December 21, 2010
City of Barstow				
16	3401 Shoshone Dr.	PCUP 10-0011 Photovoltaic Farm	12 acres	Appeal filed – no building plans submitted
17	Barstow Sanitary Landfill. Highway 247 and landfill entrance road	Expansion of Barstow Sanitary Landfill	Expand the existing Barstow Sanitary Landfill by 284 acres.	Recirculated FEIR approved in 2009. Currently in 401 permit application process with CA Water Board Work projected to begin early 2013 and last 2-3 years.
Unincorporated Portions of San Bernardino County				
15	Hodge Road and I-15	Webber-Plyley - Drilling Mud Import and Recycling	Expansion of drilling mud import and recycling facilities.	NOD for ND issued 12/7/07. Planning Complete
20	T12N, R7E, Multiple Sections T12N, R8E, Mult. Sec. SBBM	Solenergis Soda Mountains Solar Farm EIS	Solar farm.	Awaiting Revised Plan of Development (POD) Approval.

Table 3.18-1 Reasonable and Foreseeable Projects with Potential Cumulative Impacts by Location

New Number	Location	Project Title	Project Description	Status
21	12 miles southwest of Primm, Nevada in California, south of Milepost 183	Iberdola Wind Project (Bureau of Land Management [BLM] ROW CACA 44988)	75 megawatts (MW) wind energy project on 2,330 acres Military: Red	ROW issued for 3 MET towers expires 12-31-2009. Cost recovery was finalized for the MET towers on August 12, 2008. The Categorical Exclusion was completed at the Needles Field Office.[1]
22	Mountain Pass	Kern River Mountain Pass Lateral Project	An approximately 8.6-mile, 8-inch-diameter pipeline extending from Kern River's mainline to the Molycorp Facility.[3]	Submitted Federal Energy Regulatory Commission (FERC) application in December 2010. FERC certificate anticipated by July 2011 and construction to begin in late 2011.[3]
18	Shadow Valley	Valley Wells Allotment	Grazing allotment relinquishment for habitat conservation.	Public Comment Period for Environmental Assessments (EA) is 07-18-08 to 08-18-08. May, 2009- BLM notified Congress that this land has been dedicated for wildlife use, and livestock grazing is not allowed.
24	Between Yates Well Road and Nipton Road, San Bernardino County	Joint Port of Entry (JPOE) (CA-690-EA06-01)	The Joint Port of Entry would include an Agricultural Inspection Facility and a Commercial Vehicle Enforcement Facility located on the north side of Interstate 15 between Nipton Road and Yates Well Road.	Caltrans submitted a Recreation and Public Purposes Act Lease application to the BLM for the JPOE facility. Construction is scheduled to begin in late 2011 and take approximately 19 months.[4,5]
25	Ivanpah Valley, California	BrightSource ISEGS Project (BLM ROW 048668, 049502, 049503, 049504, and 049508)	Ivanpah 2 Project (ISEGS); increased acreage 12/14/06; related files 049502, 049503. 049504; modified to 3,564 acres	The ISEGS project was approved by the California Energy Commission (CEC) and the BLM in September 2010, and construction began in October 2010 and is estimated to be completed in 2013.
26	5 miles southwest of Primm, Nevada in California	First Solar Stateline Photovoltaic Project (BLM ROW CACA 48669)	300 MW Photovoltaic 4,160 acres of land requested	Initiating EIS process. Scoping is anticipated in early 2011.

Table 3.18-1 Reasonable and Foreseeable Projects with Potential Cumulative Impacts by Location

New Number	Location	Project Title	Project Description	Status
Clark County, Nevada				
28	Along the I-15 Corridor near Primm, Nevada	Southern Nevada Supplemental Airport (SNSA) and SNSA Ivanpah Airport Environs Overlay	Site reserved for a new International Airport to supplement the McCarran International Airport in Las Vegas; 5,934-acre site; adjacent to desert tortoise relocation site; 17,000-acre total area for buffer zone	While the SNSA has not been approved or constructed, the South County Land Use Plan contains policies related to the SNSA, and the land is considered reserved for the future airport. The SNSA is currently on hold.
27	Approximately 2 miles east of Primm, Nevada; Ivanpah Valley	NextLight Silver State Solar Project (BLM NVN 085077)	Three photovoltaic power plants totaling 400 MW on 2,967 acres	Under construction.
29	1 – 3 miles south and east of Jean, Nevada; Ivanpah Valley	Cogentrix NVN-083083 and 083129	Solar thermal energy facility for approximately 9,760 acres (1,000 MW) and 19,840 acres (1,200 MW) respectively. Mining claims identified in the same area.	Applications for both ROWs were received 1/18/07; both projects pending. BLM made last contact with Cogentrix 8/27/2008 requesting revised new POD using the BLM template.[1,2,6]
Interstate				
23	Along the I-15 between Victorville and Las Vegas	DesertXpress	Installation of 180 miles of train tracks for a commercial high-speed electric train that would operate between Victorville, California and Las Vegas, Nevada.	FEIS published in 2011 by the FRA. Surface Transportation Board approved the project in 2011. ROW grant approval by BLM is expected by fall 2011.

[1] Meckfessel 2010

[2] BLM 2010a

[3] Kern River Gas Transmission Company 2011

[4] Bennecke 2010

[5] Watkins 2010

[6] U.S. Department of the Interior (DOI) 2010

7 U.S. Department of Transportation Federal Railroad Administration(USDOT FRA) 2009

Table 3.18-2 Existing Projects along the proposed Calnev Expansion Pipeline Project

NEW LETTER	Map ID Letter or #, Project Name[1], and Application Number (if applicable)	Location	Project Description	Status
A	CalNev Pipeline	Colton, California to Las Vegas, Nevada	• See Section 2. 8- and 14-inch product pipelines from Colton, California to Las Vegas, Nevada. Pump stations in Colton, Cajon Pass, Barstow, Baker, Valley Wells, Cima Road. Terminals at Colton, Southern California Logistics Airport, Barstow, McCarren Airport, and North Las Vegas.	See Section 2
B	Barstow Landfill Expansion		• Existing Barstow Sanitary Landfill expansion by additional 284 acres	• Approved by County, awaiting Habitat Conservation Plan before implementation.
C	Kern River Pipelines	Crossing at Milepost 97	• Natural gas transmission pipeline	• Existing
D	Molycorp[2] Mine	Mountain Pass, Sulphide Queen Property	• Open pit rare-earths mining operation.	• Existing operations since 1953 • Facility has undergone many changes since opening, including expansions, temporary shutdowns, and other modifications. • Facility currently undergoing expansion that will include connections to the Kern River natural gas pipeline, a natural gas-powered power plant, a water treatment operation, and additional waste rock and tailings disposal facilities.
E	I-15 ROW Corridor	California to Nevada	• Highway extends from California to Montana. In the Proposed Project area, it extends from the Cajon Pass to Las Vegas.	• Multiple improvement projects have occurred, and will continue to occur • Caltrans Temporary Batch plant is located at Yates Well Road intersection within I-15 ROW • Reconstruction of the Interstate 15/Interstate 215 interchange in Devore. Project is under review. Pending the availability of funds, construction could begin by late 2013; schedule is tentative and subject to change.

Table 3.18-2 Existing Projects along the proposed Calnev Expansion Pipeline Project

NEW LETTER	Map ID Letter or #, Project Name[1], and Application Number (if applicable)	Location	Project Description	Status
F	Ivanpah Dry Lake[3]	Ivanpah Dry Lake	• The area is managed by the BLM Needles Field Office and used by recreationists for non-motorized recreational activities including, archery, kite buggying, and land sailing.	• Approximately 200 casual use permits are issued for various non-motorized (land sailing) recreational activities. Annually there are approximately 5,000 users for various activities, most of which are nonmotorized.
G	Primm Valley Golf Course[3]	3 miles south of the CA/NV state line in California	• An approximately 22-parcel (456-acre) golf course located south of the CA/NV border along I-15.	• Existing. Mitigated Negative Declaration was adopted in 1995. It was constructed in 1996 and 1997.
H	Walter M. Higgins Electric Generating Station[3]	Primm, Nevada	• Operating 570 MW natural gas power plant; uses dry cooling system	• Existing. This facility was constructed in 2004.
I	SCE Eldorado-Ivanpah 115-kV Transmission Line	Existing route that will be replaced	• 115-kV single circuit transmission line	• Existing transmission line in use. This line will be replaced between 2011 and 2014.
J	Jean/Roach Dry Lake SRMA[4]	The Proposed Project would cross the Jean/Roach Dry Lake	• Jean/Roach Dry Lake provides opportunities for casual use and other types of recreation, including motorcycling, all-terrain vehicle and 4 x 4 driving, horseback riding, mountain biking, small-game hunting, and organized racing events.	• Existing.
K	Old Spanish National Historic Trail	Trail Crossing New Mexico, Colorado, Utah, Arizona, Nevada, and California	• The multi-state trail includes 2,700 miles along several historic routes.	• The Old Spanish Trail was added to the National Trails System in 2002. It was designated a national historic trail in 2010.

Sources/Notes:

[1] In the absence of a known project name, projects are named according to the owner/developer and the type of facility or structure proposed.

[2] Molycorp is a subsidiary of Chevron-Texaco Corporation.

[3] CEC and BLM 2009

[4] BLM 2007

Table 3.18-3 summarizes the length of construction for projects that would or could overlap with the Proposed Project's construction, including the size of the anticipated workforce during construction and operation. As discussed in previous sections, some identified impacts would occur only during construction and would only contribute to cumulatively considerable impacts if the Proposed Project was constructed concurrently with that project.

Table 3.18-3 Estimated Construction Periods and Workforce for Some Large Foreseeable Projects in the Cumulative Area

Project Name	Estimated Construction Period/Year(s) of Construction	Construction Overlap with Calnev	Workforce during Construction	Workforce during Operations
DesertXpress[1]	2 years / unknown	Yes	1,730–3,000 per year	700
Southern Nevada Supplemental Airport (SNSA)[2]	Unknown	No	12,000–13,000	4,000
ISEGS Solar Energy Project[3]	4 years / 2010–2013	Yes	474–959 peak daily	90
First Solar Stateline Project	Unknown/Unknown	Potentially	474–959 peak daily[4]	90[4]
Silver State Solar Project	4 years / late 2010–fall 2014	Yes	350 peak daily	15[5]
Joint Port of Entry (JPOE)[5]	19 months / Spring 2011–Fall 2012	Yes	Unknown	Unknown

Notes:
[1] USDOT FRA 2009
[2] Ricondo and Associates 2008
[3] CEC 2010a
[4] Based on workforce needed for ISEGS. Total numbers were quantified by multiplying ISEGS estimates by number of projects
[5] Bennecke 2010

The following subsections provide additional information about the past, present, and reasonably foreseeable future projects and their potential impacts. Section 3.18.4 provides an analysis of the cumulative impacts of these projects and the Proposed Project.

3.18.1 Affected Environment and Environmental Consequences

3.18.1.1 Past and Present Projects / Existing Cumulative Conditions

The Proposed Project would begin in Colton, CA and traverse north through the cities of Bloomington, Fontana, and Rialto. The Proposed Project would cross the Cajon Pass between the San Gabriel and San Bernardino Mountains, following the path of I-15. Then, it would traverse through populated areas of Victor Valley, passing the cities of Victorville and Adelanto. The Proposed Project would then pass through Barstow and continue to follow I-15 past Afton Canyon and into the East Mojave, following north of the northern boundary of the Mojave National Preserve. Close to Calico Ghost Town, the Proposed Project would begin to parallel Interstate 15 (I-15) past Baker and eventually into the Shadow Valley. From mileposts MP-139 to MP-186, the pipeline would be located on the north and west side of Interstate 15. The Proposed route would pass by Mountain Pass on the southern edge of the Molycorp Mine and drops into and crosses the Ivanpah Valley floor to the Nevada state line. The Proposed Project would continue to follow I-15 past Primm and Jean, Nevada up to Las Vegas.

Interstate 15. I-15 is an existing interstate highway that would generally parallel the Proposed Project for its entire distance from Colton to Las Vegas. I-15 begins in San Diego, and passes north through the eastern portion of the Los Angeles metropolitan area to the southern end of the Cajon Pass. After crossing through Cajon Pass, I-15 turns northeast towards Las Vegas. The highway passes through the developed area of Victorville on the northeast side of Cajon

Pass, and then enters the largely undeveloped Mojave Desert. Between Victorville and Las Vegas, the highway passes through the developed areas of Barstow, Baker, and Primm.

According to the Federal Transportation Improvement Program, 18 projects are scheduled along I-15 in San Bernardino County, CA. The improvements are primarily route widening, and off-ramp construction or maintenance. However, only three will affect sections of I-15 that overlap the Proposed Project route.

I-15 divides natural habitats north and south, and is a permanent feature. It facilitates commercial, recreational, and tourism travel but contributes to traffic, noise, and air pollution. It has also permanently altered drainage patterns in many of the undeveloped areas through which it passes.

Existing Calnev Pipelines (Cumulative Project A). The existing Calnev pipeline system begins in Colton, California and ends in Las Vegas, Nevada. The existing pipelines primarily traverse undeveloped lands administered by the Bureau of Land Management (BLM) in San Bernardino County, California and Clark County, Nevada. The existing system includes 8- and 14-inch subsurface pipes as well as one or two primary parallel access roads for maintenance of the lines, several pump stations (Colton, Cajon Pass, Barstow, Baker, Valley Wells, and Cima Road), terminals (Colton, Southern California Logistics Airport, Barstow, McCarren Airport, and North Las Vegas) and junctions (also please see Section 2, "Project Description").

The Primm Valley Golf Course (Cumulative Project G) was built over a former landfill in the late 1990s and opened in 1997 with additions in 1998. It includes an 18-hole desert course, an 18-hole lake course, practice facilities, a full-service restaurant and lounge, and a clubhouse (PrimmNevada.net 2010a). As the only permanent green feature, the Primm Valley Golf Course contrasts with the neutral tones of the remainder of the valley. The facility's long-term need for water has altered the hydrology of the valley and permanently altered drainage patterns on the valley floor. While the facility has provided a recreational opportunity in the Ivanpah Valley, the former landfill, and now the golf course, also have displaced wildlife and vegetation habitat that once existed there.

Ivanpah Dry Lake (Cumulative Project F) extends southwest from Primm, Nevada, and covers almost 13 square miles in California. The dry lake bed is managed by the BLM and is popular for land sailing and kite buggying (PrimmNevada.net 2010b) but is closed to motorized vehicles. The site is used for commercial purposes and organized events. The Ivanpah Desert Wildlife Management Area (DWMA), an overlay to Ivanpah Dry Lake, is south of Primm and east of I-15. Some areas allow camping, but land sailing is not permitted in the southern half of the dry lake, which is primarily used for very low-level, widely dispersed motorized recreational activities (BLM 2002). Although Ivanpah Dry Lake is not developed, and therefore natural habitat is still present, the presence of recreationists has probably altered how wildlife use the area.

Much of the land in the Ivanpah Valley is managed by the BLM in accordance with the CDCA Plan. Some of the lands have special designations, three wilderness areas (Wee Thump, Joshua Tree, and South McCullough), and Areas of Critical Environmental Concern (ACECs; see Section 3.11, Special Management Areas).

The Molycorp Mine and landfill (Cumulative Project D) are located in Mountain Pass, California, in the mountains above the Ivanpah Valley. It is an active lanthanide mining and milling operation. The mine formerly operated a waste effluent pipeline that extended from the mine, traversing east for 10 miles along Nipton Road and then turning north and traversing 3 more miles into Ivanpah Dry Lake. Between 1980 and 1998, the pipeline discharged wastewater to two evaporation ponds located on Nipton Road and in the Ivanpah Dry Lake (Molycorp Mine Evaporation Pond). The pipeline is currently being removed, along with any residual soil contamination, in a project that is expected to be completed by January 2012. An agreement with the Regional Water Quality Control Board (RWQCB) requires cleanup and abatement of contaminated groundwater that developed below the two evaporation ponds (CADSTC 2009, Cass 2010, and Hunter 2010). The drum yard at the mine facility was used to store and stage drummed lead containing filter cake waste generated on site. The concrete casting and staging area was used in a pilot test in the early 1990s to stabilize the lead containing filter cake in concrete. Under a 1994 settlement, Molycorp agreed to close the drum yard and casting and staging areas, removing all drummed wastes and closing all lead waste impacted areas. By the end of 2003, the California Department of Toxic Substances Control's (CADTSC's) Geology, Permitting, and Corrective Action Branch accepted the closure certification of these units and released Molycorp from financial responsibility for further closures (CADTSC 2010). The facility is still operating and contributes to air emissions in the area (U. S. Environmental Protection Agency [EPA] 2010). It uses, stores, and discharges waters, and thus it has altered the hydrology of the area. It has also altered the terrain on which it sits, and thus the majority of the facility is unsuitable habitat for wildlife. Portions of the facility are visible from I-15 and have therefore altered the natural landscape. The Proposed Project route would cross the mine and follow the route of the former wastewater discharge pipeline down Wheaton Wash to Nipton Road.

Kern River Natural Gas Pipeline (Cumulative Project D). The Kern River Gas Transmission Company's (Kern River's) natural gas pipeline system crosses portions of the Ivanpah Valley in Clark County, Nevada and San Bernardino County, California (see Figure 5-1). The Kern River system extends nearly 900 miles from supply interconnects near Opal Wyoming, crossing portions of Utah, Nevada, and California to the Bakersfield area. The original 36- and 42-inch pipeline transmission system began operations in 1992. Kern River expanded its system in 2003 FERC Docket No. CP01-31 and in 2003 under FERC Docket No. CP01-422-000). The 2003 Expansion Project involved constructing a new 36-inch-diameter pipeline loop in the project area with modifications to the existing Goodsprings compressor station in Cark County, Nevada. The pipeline loop and the existing mainline are generally located in a 75-foot-wide common ROW. Currently, there are two 36-inch natural gas pipelines within the ROW in the Ivanpah Valley area.

In 2010, Kern River also received authorization under FERC Docket No. CP08-429-000 to increase the maximum allowable operating pressure up to 1,333 pounds per square inch-gauge (psig), resulting in a current natural gas transmission capacity of 1,876,126 dekatherms per day, or about 1.82 billion cubic feet per day of natural gas.

The Walter M. Higgins Electric Generating Station is approximately 1 mile northeast of the center of Primm (Cumulative Project H) consists of two 159-MW natural gas turbines, each equipped with a natural gas duct burner that operates at 650 million British thermal units per hour (MMBtu/hr), a 40-MMBtu/hr natural gas auxiliary boiler, and a 500-horsepower diesel emergency generator. The presence of this facility has facilitated the growth of Primm, contributed to emissions and noise in the area, and removed natural habitat. The facility also likely draws on the local aquifer. The Walter M. Higgins Electric Generating Station has a Title V operating permit, and the maximum potential emissions for the facility in tons per year are 114.91 of PM_{10}, 157.91 of NO_X, 194.07 of CO, 10.52 of SO_2, 43.51 of VOC, 10.31 of HAP, and 230.30 of NH_3.

The Jean/Roach Lake Special Recreation Management Area (SRMA; Cumulative Project J) encompasses the Ivanpah Valley in Nevada; the towns of Jean, Primm, and Goodsprings; and both the Jean and Roach Dry Lakes. The Jean/Roach Dry Lake SRMA is managed by BLM to provide recreational opportunities, including motorcycling, off-highway vehicle (OHV) and 4 x 4 driving, horseback riding, mountain biking, small-game hunting, and organized racing events (BLM 2007).

Pursuant to P.L. 85-339, a large area surrounding the Eldorado Substation in the Eldorado Valley was patented to the Colorado River Commission of the State of Nevada. This land was subsequently transferred to the City of Boulder City and Clark County for the purposes of habitat conservation for desert tortoise. The area is now known as the Boulder City Conservation Easement (BCCE) and is managed under the Clark County Multiple Species Habitat Conservation Plan (MSHCP). The primary purpose of the BCCE is to preserve and protect the property as partial mitigation for the incidental take of desert tortoise and disturbance of tortoise habitat in other portions of Clark County. The MSHCP prohibits any development within the BCCE without written approval from Boulder City and Clark County.

3.18.1.2 Reasonably Foreseeable Future Projects

Proposed Renewable Projects

Table 3.18-1 lists the renewable projects that have been proposed in the cumulative study area. It is not anticipated that all of these projects will be approved or constructed; however, given the number of projects proposed and the political will to construct new renewable energy generation, it is reasonable to assume that some of these renewable projects will be constructed.

Multiple ROW applications are on file with the BLM for wind monitoring sites. In practice, only a small portion of these wind monitoring sites are ever developed as wind power sites. Therefore, these wind monitoring sites are not considered as reasonably foreseeable projects until BLM receives an actual development proposal. Wind projects discussed in Table 3.18-1 are those for which BLM has received an application for a wind energy project, as opposed to a wind testing project.

The following section supplements the information provided in Table 3.18-1, providing a general discussion of the potential impacts of wind and solar projects in order to give context for the cumulative analysis in this Chapter. Specific projects in the cumulative study area are in various phases of planning and permitting; therefore, as of January 31, 2011, specific information about potential environmental impacts was not available for all of them. Key projects that have filed PODs with the BLM and/or have published environmental planning documentation are described in more detail.

Wind Projects

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. During construction, installation of these types of facilities could:

- 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;
- Affects military use of airspace;
- creates accessibility to previously inaccessible areas; and
- Influences drainage patterns.

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.

For most of the proposed wind projects in the cumulative study area, little site-specific information is available because EIRs or EISs are not yet completed. Therefore, the discussion of potential contributions to cumulative impacts from these projects is qualitative rather than quantitative and is based on the impacts of similar projects.

Solar Projects

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).

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.

Both PV and CSP projects are proposed in the Ivanpah and Eldorado valleys. Some of these projects do not have detailed project descriptions available or have not undergone formal impact assessment. Both PV and CSP technologies have similar impacts, although CSP can have a requirement for water for cleaning and cooling, which increases impacts. 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;
- Temporary water use associated with construction, and permanent water use associated with washing of mirrors and panels;
- Possible loss of cultural or historic resources; and

- Temporary disruption of local traffic patterns, road use, and access to recreational areas.

Most of the construction impacts can be mitigated through site-specific best management practices and other mitigation measures. Because solar projects may result in a single use for a large area (between 2,000 to 7,000 acres), several permanent impacts could occur as a result of operations, including:

- Permanent loss of wildlife habitat;
- Impact to wildlife migration corridors and fragmentation of habitat;
- Loss of access to existing recreational activities;
- Permanent loss or change to existing public access routes;
- Modification of existing drainage patterns;
- Increase in impermeable surfaces that could lead to increased magnitude or frequency of flooding events; and
- Permanent alteration of visual or aesthetic characteristics.

Limited site-specific information is available for most of the proposed solar projects in the cumulative study area because their EIRs or EISs are not complete. Therefore, the discussion of these projects' potential contributions to cumulative impacts is qualitative rather than quantitative and is based on the impacts of similar projects. As indicated in Table 3.18-1, environmental documents are not available for the First Solar Development (Cumulative Project 26) proposed in California, or Cogentrix Solar Services (Cumulative Project 29).

Ivanpah Solar Electric Generating System Project (Cumulative Project 25). The ISEGS project was approved by the CEC and the BLM in September 2010, and construction began in October 2010 and is estimated to be completed in 2013. The ISEGS project will consist of a solar-concentrating thermal power plant and related facilities constructed by BrightSource Energy, Inc. in the Ivanpah Valley area in San Bernardino County, California. The proposed ISEGS site is 6.1 miles west of the California/Nevada border. The total project footprint is estimated to be 4,073 acres.

The proposed ISEGS solar thermal power plant will comprise fields of heliostat mirrors that will transfer solar energy into boilers located on centralized power towers. Each mirror will track the sun throughout the day and reflect the solar energy to several receiver boilers. Steam turbine generators will receive steam from the receiver boilers to produce electricity. The solar field and power generation equipment will operate each morning after sunrise and shut down in the evening when the amount of solar insolation drops.

The ISEGS project will be constructed in three separate phases or units to generate 370 MW of solar thermal power. Each of the proposed ISEGS power plants will consist of three major components: heliostats mirrors, solar power towers, and power blocks. Related facilities and utilities for the solar power plant will include a natural gas pipeline, water supply and discharge, air pollution control and fire protection, and access and maintenance roads. Power will be delivered from three individual sites via three separate 115-kV transmission generation tie lines to the proposed Ivanpah Substation.

Silver State Solar Project (Cumulative Project 27). The Silver State Solar Project, approved in 2010 for development near Primm, Nevada, along the California/Nevada border, would intersect the Calnev ROW near milepost (MP) 197. The project will ultimately generate 400 MW of electricity on approximately 3,000 acres of BLM-administered lands. The Silver State Solar Project will use fixed tilt mounting structures with cadmium telluride thin-film solar modules. Water for construction and operational panel cleaning will be supplied by onsite wells under a long-term contract from the Las Vegas Valley Water District. Peak water use would be during construction for dust suppression (up to 600 acre-feet total, with no more than 200 acre-feet during any one year). O&M water requirements would be 21 acre-feet per annum (AFA) for the life of the project.

The Record of Decision was issued on October 13, 2010 by the Secretary of the Interior on October 12, 2010, and authorizes only Phase 1 of the project (60 MW)—Phase 2 and Phase 3 are still pending (BLM 2010b). Construction began in July 2011 and will continue through November 2014 if all phases are approved. Potential impacts of the Silver State Solar Project that may contribute to cumulative impacts include air quality and noise impacts during construction, reduction of groundwater volume, vegetation and habitat loss and fragmentation, impacts to desert tortoise population, alteration of OHV routes on BLM land, degradation of the visual character of Ivanpah Valley, and adverse impact to traffic load and LOS on I-15 on Fridays (BLM 2010b).

Proposed Residential and Commercial Development

Many residential and commercial developments are planned are proposed in the cities and regions that would be traversed by the Proposed Project. The following table provides the approximate number of proposed developments and their acreage.

Type	Number	Approximate combined acreage
Residential	10	4901
Commercial	21	274.6
Industrial	9	605.7

Depending on their distance from the proposed route, these type of projects could contribute to cumulative short-term noise, air quality, and traffic impacts in conjunction with the Proposed Project if their construction occurred concurrently.

Highway Projects from San Bernardino Associated Governments: All federally funded projects, and regionally significant projects (regardless of funding), must be listed in a Federal Transportation Improvement Program per federal law. A project is not eligible to be programmed in the FTIP until it is programmed in the State Transportation Improvement Program or in the State Highway Operations and Protection Program. Other types of funding (Federal Demonstration, Congestion Mitigation and Air Quality, Transportation Enhancement Activities, or Surface Transportation Program) must be officially approved before the projects can be included in the Federally Transportation Improvement Program.

The 2011 Federally Transportation Improvement Program includes 57 highway project throughout San Bernardino County. 44 of the projects are short-term widening or maintenance projects. Of the 57 projects listed, 7 began construction in 2010 or earlier.
Included in the program list is the construction in two phases of the High Desert Corridor, a 4-6 lane highway that will cross the Proposed Project route.

3.18.1.3 Other Projects

Other large projects that are proposed in the area include the SNSA, Calnev Pipeline Expansion Project, Molycorp Mine, and DesertXpress High-Speed Rail Project. Additional information about these projects is given below.

Southern Nevada Supplemental Airport (Cumulative Project 28). The Clark County Department of Aviation (CCDOA) proposes to construct the SNSA on 5,934 acres in the Ivanpah Valley in Nevada between Jean and Primm. The new airport would provide additional capacity to serve visitors to the metropolitan Las Vegas area and residents of greater Clark County, Nevada. In the Draft Alternatives Working Paper, a number of project alternatives were considered to determine whether they would meet the purpose and need of the project, including using other modes of transportation and placing the airport at another site nearer to Las Vegas. The Proposed Project route would pass through the proposed airport site. While the SNSA is considered a foreseeable future project, it is currently on hold.

Surrounding the proposed SNSA would be the Ivanpah Airport Environs Overlay (see Figure 5-1 or Figure 3.9-1 in Section 3.9, "Land Use"). The overlay would be 17,000 acres and would serve as a Noise Compatibility Area for the airport.

Potential impacts of the SNSA that may contribute to cumulative impacts include noise during operation, air quality impacts to the Ivanpah Valley, and traffic impacts along the I-15 corridor. Since the EIS for the SNSA has not been published, this project's contributions to cumulative impacts can only be evaluated qualitatively, based on similar projects.

DesertXpress High-Speed Rail Line (Cumulative Project 23). DesertXpress Enterprises, LLC, proposes to construct and operate a privately financed interstate high-speed passenger train, with a top speed of approximately 150 miles per hour, between Victorville, California, and Las Vegas, Nevada. The approximately 60-foot-wide, 200-mile-long corridor would be a fully grade-separated, dedicated, double-track, passenger-only railroad roughly following I-15 and existing railroad corridors/ROWs. The project would also include construction of a passenger station in Victorville, California; a passenger station in Las Vegas, Nevada; a maintenance and operation facility in Victorville; an overnight maintenance and storage facility in the Las Vegas area; and associated ancillary facilities needed to maintain and operate the proposed rail line. Operation is estimated to start in 2012 (USDOT FRA 2009). Possible impacts of the DesertXpress project that may contribute to cumulative impacts include collisions with local animals (including representatives of sensitive species such as the desert tortoise), water use associated with construction, public safety impacts, surface hydrology impacts, and possible air quality impacts, during both the construction and operation phases.

Joint Port of Entry Project (Cumulative Project 24). The State of California, acting through the California Department of Transportation (Caltrans), filed an application for the JPOE project, which would be on 133 acres of public lands. The proposed JPOE inspection facility would be comprised of a commercial vehicle enforcement facility and an agricultural inspection facility between Nipton Road and Yates Well Road on southbound I-15. Upon completion of the project, all traffic entering California on southbound I-15 would be diverted through the JPOE. A Notice of Realty Action for the JPOE project was published on February 10, 2010. This project may contribute to cumulative impacts to aesthetics and visual resources, air quality (short-term), cultural, geology, noise, and transportation and traffic.

3.18.1.4 Cumulative Impact Analysis

This section analyzes cumulative impacts that could result from the proposed Calnev Pipeline Expansion Project when considered with the other projects. Geographic areas for cumulative impacts vary by resource and are described within each resource subsection (i.e., the resource-specific "cumulative impact area"). The geographic extent and timeframe of the cumulative impact analysis, the past and present projects and their impacts, and the reasonably foreseeable future projects are described for each resource area. To assess the cumulative impact, this analysis first assesses whether the cumulative projects would result in a cumulatively considerable impact and then, if a cumulatively considerable impact is determined to result, assesses the Proposed Project's contribution to that impact. Resources that have been determined to have no direct or indirect impacts from the Calnev proposed project or its alternatives will not be analyzed for cumulative effects. In general, each cumulative impact discussion provides an overview of the potential impacts, followed by specific analysis of the Proposed Project's cumulative impacts.

3.18.2 Topography, Geology, and Geologic Hazards

3.18.2.1 Geographic and Temporal Extent

The geographic scope for considering cumulative impacts on geologic resources is the Proposed Project ROW, alternatives, and substation sites. Impacts on these resources would be limited to those that would be affected by project construction. The timeframe for the cumulative analysis is the operational lifetime, because the Proposed Project could have impacts for as long as it is present. However, most impacts would occur during construction.

3.18.2.2 Past and Present Project Impacts / Existing Cumulative Conditions

The Proposed Project ROW traverses varied and complex geologic terrain from the existing North Colton terminal in the City of Colton to Bracken Junction in Las Vegas, and generally parallels the existing Calnev system. As described in Section 3.2.1, this area includes many potential geologic hazards. The Proposed pipeline would cross the San Andreas Fault Zone, an extremely seismically active region in Southern California, specifically the complex neotectonic structure of the active San Andreas Fault System between Colton and the Cajon Pass region. These hazards present a threat not just to the Proposed pipeline, but to infrastructure and hazardous materials associated with all other urban, commercial, and industrial development projects in the area, including the existing Calnev 6-inch and 14-inch pipelines. The existing pipelines cross and/or traverse parallel to several potentially active faults, and have the potential for releases of petroleum product if damaged by a seismic event.

3.18.2.3 Reasonably Foreseeable Future Projects

Reasonably foreseeable projects in the Cajon Pass are the only ones likely to contribute to cumulative impacts in conjunction with the Proposed Projects. These include highway improvement projects, commercial development, and the Cajon Well Transmission Main Replacement Project. For the complete listing of relevant cumulative projects see Table 3.18-1.

3.18.2.4 Cumulative Impact Analysis

Proposed Project

The analysis of the Proposed Project in Section 3.2.3 identified the following potential impacts associated with topography and geologic hazards:

- Impact GEO-1: Severe damage to the pipeline from unstable soils or a geologic event; and
- Impact GEO-2: Impact to adjacent facilities or resources through blasting vibrations.

For both potential impacts, the analysis determined that direct, adverse impacts under NEPA could occur in the event of a geologic event, and that these impacts could be significant under CEQA. The duration of these impacts could range from temporary and short-term to permanent, depending on the scope of the event. Although mitigation that could completely eliminate potential impacts was not identified, Section 3.2.3 identified the following mitigation measures that would reduce the impacts:

- MM GEO-1a: Complete geotechnical studies.
- MM GEO-1b: Design pipeline for ground shaking.
- MM GEO-1c: Shutoff valves.
- MM GEO-1d: Follow design and operational procedures
- MM GEO-1e: Strengthen the buried pipeline.
- MM GEO-1f: Maximize distance from deformation zone.
- MM GEO-1g: Space around buried pipeline
- MM GEO-1h: Avoid soils susceptible to movement.
- MM GEO-2: Implement Blasting Plan.

Should severe geologic events occur, they would likely cause damage to existing infrastructure and hazardous materials, including the existing Calnev pipelines, in addition to the Proposed pipeline. Therefore, the impacts of such an event could be cumulatively considerable, especially in areas of the Proposed Project where the pipeline occurs in close proximity to the existing Calnev pipelines, other structures, or other potential sources of potential hazardous materials releases. Although the proposed mitigation measures would not fully alleviate the potential for a contribution to cumulative impacts by the Proposed Project, such mitigation would minimize the potential and reduce the magnitude of the impacts, and would therefore reduce the contribution of the Proposed Project to any cumulative impacts associated with topographic and geologic hazards.

Alternative 2

The analysis of Alternative 2 in Section 3.2.3 determined that, for most of the components of the Alternative route, impacts associated with topographic and geologic hazards would be the same as those identified for the Proposed Project. The primary difference would be a reduction in the potential for liquefaction associated with the unnamed riparian area near the Wagon Train Road horizontal directional drilling (HDD) location. Because Alternative 2 would have a slightly reduced potential for damage by geologic hazards along its route, its potential contribution to cumulative impacts would also be lower than those of the Proposed Project.

Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. Although these mitigation measures would not fully alleviate the potential for a contribution to cumulative impacts by Alternative 2, such mitigation would be necessary to minimize the potential and reduce the magnitude of the impacts, and would therefore reduce the contribution of Alternative 2 to any cumulative impacts associated with topographic and geologic hazards.

Alternative 3

The analysis of Alternative 3 in Section 3.2.3 determined that, for most of the components of the Alternative route, impacts associated with topographic and geologic hazards would be the same as those identified for the Proposed Project. The primary difference would be a reduction in the potential for liquefaction associated with the unnamed riparian area near the Wagon Train Road HDD location. Because Alternative 3 would have a slightly reduced potential for damage by geologic hazards along its route, its potential contribution to cumulative impacts would also be lower than those of the Proposed Project.

Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 3. Although these mitigation measures would not fully alleviate the potential for a contribution to cumulative impacts by Alternative 3, such mitigation would be necessary to minimize the potential and reduce the magnitude of the impacts, and would therefore reduce the contribution of Alternative 3 to any cumulative impacts associated with topographic and geologic hazards.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, the existing projects within the region, including the existing Calnev 8-inch and 14-inch pipelines, would continue to have the potential to release petroleum products and hazardous materials if damaged by seismic events. The potential for these existing facilities to release hazardous materials would be the same under all four Alternatives, including the Proposed Action and the No Action Alternative. In addition, if the No Action Alternative were implemented, deliveries of fuel by truck and/or rail could increase. If this occurred, these activities would likely require construction of loading and unloading areas in undetermined locations. Because these locations are unknown, the potential cumulative impacts associated with topographic and geologic hazards at these locations cannot be determined.

3.18.3 Soils

3.18.3.1 Geographic and Temporal Extent

The geographic scope for considering cumulative impacts on soils is the Proposed Project ROW, alternatives, and substation sites. Impacts on these resources would be limited to those that would be affected by project construction. The timeframe for the cumulative analysis is the operational lifetime, because the Proposed Project could have impacts for as long as it is present. However, most impacts would occur during construction.

3.18.3.2 Past and Present Project Impacts / Existing Cumulative Conditions

Past and present projects have likely contributed to soil impacts within the region. These projects, including urban, commercial, and industrial development, as well as agriculture, have resulted in soil erosion, removal of topsoil, and disturbance of desert pavement. In addition, existing infrastructure and facilities that handle hazardous materials may be located on unstable soils.

3.18.3.3 Reasonably Foreseeable Future Projects

Reasonably foreseeable future large scale projects in the cumulative impact area for soils would include any project that would have concurrent construction that is in relative close proximity to the Proposed Project's ROW. These could include the Cajon Well Transmission Main Replacement Project, the High Desert Corridor, the Barstow Area Quarry, the Eldorado-Ivanpah Transmission Project, ISEGS, First Solar, Silver State, SNSA, and DesertXpress. For the complete listing of relevant cumulative projects see Table 3.18-1.

3.18.3.4 Cumulative Impact Analysis

Proposed Project

The analysis of the Proposed Project in Section 3.2.3 identified the following potential impacts associated with soil resources:

- Impact SOIL-1: Soil Removal and Loss of Topsoil; and
- Impact SOIL-2: Potential Impacts from Unstable Soils.

For both potential impacts, the analysis determined that direct, adverse impacts under NEPA could occur as a result of the Proposed Project, and that these impacts could be significant under CEQA. The duration of these impacts could range from temporary and short-term to permanent, depending on the scope of any event related to unstable soils, and the length of time required for revegetation. These impacts would be avoided or reduced through implementation of the following mitigation measures:

- MM SOIL-1a: Use of Erosion Control Devices and Topsoil Best Management Practices
- MM SOIL-1b: Storm Water Pollution Prevention Plan
- MM SOIL-1c: Blasting Plan
- MM SOIL-1d: Suspend Heavy Equipment Use in Saturated Conditions.
- MM GEO-1h: Avoid soils susceptible to movement

Implementation of these mitigation measures would reduce these impacts to less than significant under CEQA.

The Proposed Project would require temporary disturbance of approximately 2,840 acres of soil during construction. Most of this disturbance would be co-located with the existing Calnev pipelines, along roads in urban areas, or within the Interstate 15 corridor, and therefore impacts to soil resources associated with the Proposed Project would primarily occur in an area which has already been disturbed. The areas in which soil disturbance would occur conjunction with that of present and future projects is as follows:

- From MP-0 to MP-10, the Proposed Project would be constructed in an urban area in which original soils are disturbed over hundreds of square miles. The Proposed Project in this area would occur entirely within or adjacent to roadways, occurring in soil that has already been disturbed.

- From MP-10 to MP-13.5, the Proposed Project would occur in an area which has not been previously disturbed. This disturbance would total approximately 47 acres.

- From MP-13.5 to MP-28, the Proposed Project would be constructed along existing railroads or roads, including Interstate 15. Within this area, the width of previously disturbed soil can be roughly estimated as 1,000 feet. Therefore, the amount of previous disturbance would be in the range of 1,900 acres. The amount of disturbance associated with the Proposed Project, which would be almost entirely within the previously disturbed area, would be approximately 100 feet in width, or 190 acres.

- From MP-28 to MP-31.5, the Proposed Project would occur in an area adjacent to the existing Calnev pipelines. The soil disturbance associated with the Proposed Project in this area would be approximately 42 acres. Because the existing pipelines would have impacted a similar width, the soil disturbance associated with those pipelines would also have been approximately 42 acres each. However, these areas are expected to have substantial overlap, with the Proposed Project being constructed within the areas of previous disturbance.
- From MP-31.5 to MP-53, the Proposed Project would be constructed along existing roads. Within this area, the width of previously disturbed soil can be roughly estimated as 100 feet. Therefore, the amount of previous disturbance would be in the range of 261 acres. The amount of disturbance associated with the Proposed Project, which would be almost entirely within area previously disturbed by the roads, would also be approximately 100 feet in width, or 261 acres.
- From MP-53 to MP-93, the Proposed Project would occur in an area adjacent to the existing Calnev pipelines. The soil disturbance associated with the Proposed Project in this area would be approximately 485 acres. Because the existing pipelines would have impacted a similar width, the soil disturbance associated with those pipelines would also have been approximately 485 acres each. However, these areas are expected to have substantial overlap, with the Proposed Project being constructed within the areas of previous disturbance.
- From MP-93 to MP-141, the Proposed Project would occur in an area adjacent to the existing Calnev pipelines. Also, the Proposed Project would either be adjacent to Interstate 15, or within a short distance (less than 0.5 mi) of Interstate 15 in this area. Within this area, the width of previously disturbed soil can be roughly estimated as 1,000 feet. Therefore, the amount of previous disturbance would be in the range of 5,800 acres. The amount of disturbance associated with the Proposed Project, which would be almost entirely within the previously disturbed area, would be approximately 100 feet in width, or 580 acres.
- From MP-141 to MP-158, the Proposed Project would be constructed in a previously undisturbed area, but within a short distance (less than 1 mile) of Interstate 15. Within this area, the width of previously disturbed soil can be roughly estimated as 1,000 feet. Therefore, the amount of previous disturbance would be in the range of 2,060 acres. The amount of disturbance associated with the Proposed Project, which would constitute new disturbance, would be approximately 100 feet in width, or 206 acres.
- From MP-158 to MP-223, the Proposed Project would occur in an area adjacent to the existing Calnev pipelines. Also, the Proposed Project would either be adjacent to Interstate 15, or within a short distance (less than 1 mi) of Interstate 15 in this area. Within this area, the width of previously disturbed soil can be roughly estimated as 1,000 feet. Therefore, the amount of previous disturbance would be in the range of 7,900 acres. The amount of disturbance associated with the Proposed Project, which would be almost entirely within the previously disturbed area, would be approximately 100 feet in width, or 790 acres.

- From MP-158 to MP-233, the Proposed Project would be constructed in an urban area in which original soils are disturbed over hundreds of square miles. The Proposed Project in this area would occur entirely within or adjacent to roadways, occurring in soil that has already been disturbed.

Any impacts associated with Impact SOIL-2, impacts from unstable soils, would likely be localized, affecting only the Proposed Project area and not the areas for any existing or reasonably foreseeable future projects.

Alternative 2

The analysis of Alternative 2 in Section 3.3.3 determined that this Alternative would have a slightly reduced level of impacts as compared to the Proposed Project. The primary difference would be a reduction of potential soil erosion impacts (SOIL-1) and avoidance of the placement of the pipeline within saturated soils (SOIL-2) by using the Wagon Train Road HDD. Because the Proposed Project is not expected to contribute to adverse cumulative impacts, Alternative 2 also would not contribute to such impacts.

Alternative 3

The analysis of Alternative 3 in Section 3.3.3 determined that this Alternative would have a slightly reduced level of impacts as compared to the Proposed Project. The primary difference would be a reduction of potential soil erosion impacts (SOIL-1) and avoidance of the placement of the pipeline within saturated soils (SOIL-2) by using the Wagon Train Road HDD. Because the Proposed Project is not expected to contribute to adverse cumulative impacts, Alternative 3 also would not contribute to such impacts.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, the existing projects within the region, including the existing Calnev 8-inch and 14-inch pipelines, would continue to have the same potential for impacts associated with soil resources as they do now. Ultimately, fuel delivery capacity associated with the current delivery systems would be reached, and deliveries of fuel by truck and/or rail would likely increase. These activities would likely require construction of loading and unloading areas in undetermined locations. Because these locations are unknown, the potential cumulative impacts associated with soil resources at these locations cannot be determined.

3.18.4 Energy and Minerals

The analysis of the Proposed Project and Alternatives in Section 3.4.3 determined that there would be no adverse impacts under NEPA, and impacts would not be significant under CEQA. No mitigation measures were proposed to address potential impacts.

Because adverse impacts to energy and mineral resources associated with the Proposed Project and Alternatives would not occur, and would be less than significant under CEQA, the Proposed Project and Alternatives would not contribute to cumulative impacts associated with energy and mineral resources.

3.18.5 Water Resources/Hydrology and Water Quality

3.18.5.1 Geographic and Temporal Extent

The Proposed Project would require the crossing of water bodies and dry washes. The Proposed Project would also require the use of water from both surface water and groundwater sources for dust suppression during construction, and for water for hydrostatic testing. The geographic extent of potential surface water or groundwater contamination impacts due to releases from the pipeline includes the entire 234 mile length of the pipeline. Groundwater use impacts could only occur in close proximity (within a few miles) to the groundwater sources which are accessed for the project, including the West San Bernardino Valley Water District, the Baker Community Services District, and the Molycorp well fields. Water use impacts, and potential impacts to surface water bodies associated with disturbance and releases during construction, would only have the potential to occur during the year-long construction phase. Potential impacts to surface water and groundwater due to accidental releases from the pipeline would be present throughout the operational life of the pipeline.

3.18.5.2 Past and Present Project Impacts / Existing Cumulative Conditions

Past and present projects have contributed to a reduction in water availability and water quality throughout the region. These projects, including urban, commercial, and industrial development, as well as agricultural development, have resulted in lowering of groundwater tables and availability of groundwater, and have also impacted both groundwater and surface water quality through the release of hazardous and non-hazardous contaminants. Table 3.18-1 identifies past and present cumulative impact conditions that could affect water resources.

3.18.5.3 Reasonably Foreseeable Future Projects

Figure 3.18-1 identifies future projects that could cumulatively affect water resources.

3.18.5.4 Cumulative Impact Analysis

Proposed Project

The analysis of the Proposed Project in Section 3.5.3 identified the following potential impacts associated with water resources:

- Impact WR-1: Introduce hazardous contamination into surface and groundwater resources such that water quality is degraded and water quality standards are exceeded.
- Impact WR-2: Introduce non-hazardous, non-beneficial discharges into surface water and groundwater resources such that water quality is degraded and water quality standards are exceeded
- Impact WR-3: Substantially deplete groundwater supply and/or interfere with sufficient groundwater recharge
- Impact WR-4: Impact floodplain integrity and alter existing drainage patterns such that flood flows will be impeded or re-directed, the risk of flooding are substantially increased, and stormwater drainage capacity is exceeded
- Impact WR-5: Reduce stream flow quantity or impact riparian vegetation such that significant damage occurs to beneficial uses or aquatic life

- Impact WR-7: Increase of risk to people or structures due to placement of structures within a floodplain.

The withdrawal of large volumes of groundwater for use in construction could deplete groundwater supplies in the surrounding vicinity if the withdrawal exceeds basin capacity or duration needed for recharge. This impact could be intense, short-term, and affect large areas outside the point of withdrawal. This impact could contribute to well-documented cumulative impacts to the availability of groundwater supplies within the Proposed Project area.

Of the five proposed water sources for the project, two (the Mojave Water Agency and the Las Vegas Valley Water District), representing 50 percent of the water supply for the proposed project, obtain their supply from surface water sources. These two sources have a supply capacity of 1,436 and 2,726 ac-ft per day, respectively. The largest water use from any proposed source would be that from the Mojave Water Agency, which would total 56.2 ac-ft through the duration of the project. This total water usage over the course of the project represents less than 4 percent of the daily supply capacity for this water source. Even if the Mojave Water Agency were to supply 100 percent of the water for the year-long proposed project, the total of 153.27 ac-ft represents only 10 percent of the daily supply capacity of this one system. Therefore, no water supply impacts or groundwater depletion would occur at either of these sources. Because no depletion would occur, and the use of water from these systems would be temporary (less than one year), this use of water would not contribute to adverse cumulative impacts to water availability from these systems.

Groundwater would be the source of supply for water from the West Valley, Baker, and Molycorp systems. These sources would account for approximately 70 ac-ft of total water supply, or approximately 50 percent of the water used by the proposed project. As shown in Table 3.5-7, two of the groundwater-supplied systems (Baker and Molycorp) are relatively small, with capacities of 4.4 and 7 ac-ft per day, respectively. Based on a maximum water need of 0.8 ac-ft per day, and an estimated duration of construction requiring these sources of 80 construction days, use of these water systems could use as much as 18 percent of the daily supply volume from these systems for a period of several months. For the Molycorp system, located in Ivanpah Valley, the groundwater use would occur in close proximity to groundwater use for several other purposes, including water supply to the Primm Golf Course, Primm Casinos, Molycorp Mine, Ivanpah SEGS construction project, and Silver State Solar construction project. Depending on the timing of construction, the water use could also coincide with the construction of the DesertXpress train, Stateline Solar facility, Joint Port of Entry, and/or Southern Nevada Supplemental Airport. Therefore, the potential exists for the multiple users in Ivanpah Valley to contribute to groundwater depletion.

The total amount of water proposed to be used from the Molycorp well system is 31 ac-ft. The groundwater source for the Molycorp supply system includes wells within both the Upper Kingston and Ivanpah Valley Groundwater Basins. The specific source which would be used for the proposed project cannot be identified at this time. If the source should be the Ivanpah Valley, numerous studies have evaluated the volume of groundwater resources in that area, and the annual recharge is estimated to range from 5200 to more than 6500 ac-ft per year, exceeding estimated future water production by 94 to 1410 ac-ft per year (BLM 2010a). Because the water use from Ivanpah Valley would be temporary (lasting less than two months), it is unlikely that the Proposed Project would be a substantial contributor to any cumulative impacts in this area.

Overall, the amount of groundwater use (a total of 70 ac-ft from three separate systems) is small, compared to available water supplies throughout the proposed project area. In addition, this water use would be temporary, lasting only during the 12 months of construction, and water use would cease after the pipeline becomes operational. Finally, the potential suppliers would only provide the water for the project if supplies were readily available at the time of construction. The Applicant has investigated other potential supply scenarios, and if water is not available from the Molycorp and Baker systems, water would be accessed from the laFrger West Valley, Mojave, and Las Vegas systems.

Because adverse impacts to water resources could occur, and adverse impacts have also been known to occur as a result of existing projects, the Proposed Project could contribute to adverse cumulative impacts to water resources. These impacts could be cumulatively considerable under CEQA. However, implementation of the mitigation measures, as well as the Applicant-Proposed Minimization Measures (discussed in Section 3.5.3), would either avoid, or reduce the magnitude, of these impacts.

Alternative 2

Overall, Alternative 2 would have a reduced level of impacts to water resources, as compared to the Proposed Project. The primary difference would be a reduction of impacts associated with WR-5 due to the avoidance of the unnamed riparian area by using the Wagon Train Road HDD. Because Alternative 2 would have a reduced potential for impacts to water resources, its potential contribution to cumulative impacts would also be lower than those of the Proposed Project. Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2.

Alternative 3

Alternative 3 would also have a reduced level of impacts to water resources, as compared to the Proposed Project. The primary difference would be a reduction of impacts associated with WR-5 due to the avoidance of the unnamed riparian area by using the Wagon Train Road HDD. Because Alternative 3 would have a reduced potential for impacts to water resources, its potential contribution to cumulative impacts would also be lower than those of the Proposed Project. Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 3.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, the existing projects within the region, including the existing Calnev 8-inch and 14-inch pipelines, would continue to have the same potential for impacts associated with water resources as they do now. Impacts from current operations include any potential leaks and/or spills from the pipeline or truck and train delivery systems. However, current maintenance activities on the existing Calnev Pipeline System involve visual and SCADA directed pipeline integrity checks twice per week, and a spill response plan is in place for all delivery systems. This operation and maintenance regime would not change under the No Action Alternative; therefore, water resource impacts from these activities would remain unchanged.

Ultimately, fuel delivery capacity associated with the current delivery systems would be reached, and deliveries of fuel by truck and/or rail could increase. If future supplies were to be provided by increased truck and rail deliveries, these activities would likely require construction of loading and unloading areas in undetermined locations. Because these locations are unknown, their potential contribution to cumulative impacts associated with water resources cannot be determined. The increased use of truck and rail transport of fuels would also result in an increased potential for the release of hazardous materials to water bodies and groundwater.

3.18.6 Air Quality and Greenhouse Gases

3.18.6.1 Geographic Extent and Timeframe

The Project would be located within the Mojave Desert Air Basin (MDAB) and South Coast Air Basin (SCAB) in California. Local air quality in these areas is administered by the Mojave Desert Air Quality Management District (MDAQMD) and the South Coast Air Quality Management District (SCAQMD). The Project would also be located in Clark County, Nevada. Local air quality in Clark County is administered by the Clark County Department of Air Quality and Environment Management (DAQEM). Because air quality impacts resulting from the Proposed Project could occur over the entire route, it would contribute air emissions within two air basins, two counties, and three local air quality jurisdictions. Although construction impacts associated with the Proposed Project would be localized, air quality within the entire region is affected by urbanization, traffic, and development throughout southern California and the Las Vegas area. These general (not project-specific) contributions to air quality have resulted in adverse cumulative impacts, as documented by the designations of non-attainment, as discussed below.

Since the Proposed Project has negligible direct operating emissions, this cumulative impact discussion focuses on construction impacts. Therefore, the timeframe for this analysis is the approximate 12 to 18 months of construction. Only other projects with construction scheduled concurrently in the same area as the Proposed Project are considered as possible contributors to cumulative impacts.

3.18.6.2 Past and Present Project Impacts / Existing Cumulative Conditions

As discussed previously, construction of most of the Proposed Project would take place primarily in desert, rural areas where population is sparse. However, portions of the pipeline would be constructed in urban areas including approximately 11 miles in the Colton/Rialto area of the SCAB and approximately 10 miles in the Las Vegas metropolitan area. Air quality is discussed in Section 3.6.1.2, “Existing Ambient Air Quality;” therefore, this discussion focuses on present conditions and the potential contribution of reasonably foreseeable future projects.

Existing air emission sources in the Proposed Project area include a diverse range of stationary sources, mobile sources, and smaller sources that are distributed area-wide. Rural and undeveloped areas may experience air pollutants from natural sources such as windstorms or wildfires. Mobile sources are commonplace throughout the developed areas, including on-highway motor vehicles, heavy mobile equipment used for off-road purposes (e.g., construction equipment), aircraft, and railroad locomotives.

Compliance with Federal Standards

For purposes of classification of National Ambient Air Quality Standards (NAAQS) attainment status, the Proposed Project area includes three separate areas: the SCAB, the MDAB, and Clark County.

The SCAB extends from the coast to the mountains. During the summer months, it can experience temperature inversions which, in combination with poor dispersion and sunshine, results in photochemical smog. Santa Ana winds that occur during the fall and winter seasons help to disperse air contaminants. With respect to NAAQS, the SCAB is designated attainment/unclassified for carbon monoxide (CO), lead, nitrogen dioxide (NO_2), and sulfur dioxide (SO_2), severe non-attainment for ozone, serious non-attainment for particulate matter with diameters less than or equal to 10 microns (PM_{10}), and non-attainment for particulate matter with diameters less than or equal to 2.5 microns ($PM_{2.5}$). The basin is also classified as a CO and NO_2 maintenance area due to previous nonattainment designations.

The MDAB is considered attainment/unclassified for all air pollutants, except PM_{10} and ozone. The portion of western San Bernardino County within the Western Mojave Desert Ozone Non-attainment Area is designated as moderate nonattainment for the ozone NAAQS (all other portions of the basin are considered unclassified/attainment for the ozone NAAQS). All parts of San Bernardino County in the MDAB are also designated moderate nonattainment for the PM_{10} NAAQS.

Clark County is designated attainment/unclassified for CO, lead, NO_2, $PM_{2.5}$, and SO_2. The entire county is designated as non-attainment for ozone. The Las Vegas Valley portion of Clark County is also designated as a serious non-attainment for PM_{10}. All other parts of Clark County are designated as attainment for PM_{10}. Las Vegas Valley was redesignated as a CO attainment area in 2010 and is now classified as a CO maintenance area. The primary contributor of PM_{10} throughout Las Vegas Valley is fugitive dust, both human caused and naturally occurring in the desert environment. The major sources of PM_{10} emissions in the valley are paved and unpaved roads, construction activities; industrial and commercial facilities, motor vehicle exhaust, and disturbed vacant land.

Compliance with State Standards

With respect to California Ambient Air Quality Standards (CAAQS), the SCAB is designated as attainment/unclassified for CO, hydrogen sulfide (H_2S), lead, SO_2, sulfate, and visibility reducing particles, and nonattainment for NO_2, ozone, PM_{10}, and $PM_{2.5}$.

With respect to CAAQS, the MDAB is considered attainment/unclassified for CO, H_2S, lead, NO_2, SO_2, sulfate, and visibility reducing particles. All parts of San Bernardino County within the MDAB are designated nonattainment for the ozone and PM_{10} CAAQS. The southwestern portion of San Bernardino County in the Western Mojave Desert Ozone Non-attainment Area is also designated as nonattainment for the $PM_{2.5}$ CAAQS. All other portions of the basin are considered unclassified/attainment for the $PM_{2.5}$ CAAQS.

3.18.6.3 Reasonably Foreseeable Future Projects and Changes

Only the projects listed in Tables 3.18-1 and 3.18-2 and shown in Figures 3.18-1 through 3.18-9 are considered potential contributors to cumulative impacts. Only those projects that have concurrent construction and are located within 1 mile of the Proposed Project would contribute to cumulative emissions. However, as indicated in Table 3.18-3, the construction schedule of many of these projects is uncertain, so the construction periods of several projects may not coincide with the Proposed Project.

Residential, commercial, and industrial development is expected in the Cities of Colton, San Bernardino, Victorville, Adelanto, Barstow, and Las Vegas, as well as in the unincorporated portion of San Bernardino and Clark Counties. Some of these projects include the proposed Enertech Regional Biosolids Processing in Rialto (combined with the expansion of the City of Rialto's wastewater treatment plant), the Rialto Commerce Center, and a 125- acre Federal

Express Building in the City of San Bernardino. The Barstow Landfill is also proposed to be expanded by 284 acres.

Both small and large road and highway projects are planned. The largest proposed highway project is the High Desert Corridor, a 19-mile 6-lane highway that would eventually link Victor and Antelope valleys.

In the Ivanpah Valley, the Proposed Project would traverse near the proposed locations of the ISEGS and First Solar projects, as well as Ivanpah Dry Lake, which is used for recreation in California. As the proposed pipeline crossed the California-Nevada border, it would be located within 1 mile of activities in Primm, including the existing rail line, the proposed location of the DesertXpress rail line, the SNSA, and the proposed location of NextLight's Silver State Solar Project. The Proposed Project would then run parallel I-15 to Las Vegas through the Jean/Roach Lake Recreation Area.

3.18.6.4 Cumulative Impact Analysis

Proposed Project

The potential for air quality impacts of the Proposed Project to combine with the effects of other projects within the geographic extent and timeframe of the cumulative analysis is described below. Since the Proposed Project would have negligible operating emissions, the cumulative impact analysis focuses on construction impacts, which would be localized and of short duration. As discussed above, only projects within one mile of the Proposed Project route, as well as projects that would generate emissions during construction of the Proposed Project, are considered for analysis of cumulative impacts. Additionally, only new projects with construction or operating emissions that would occur at the same time as the Proposed Project's construction are considered as part of this cumulative impact analysis; existing emission sources are considered part of the existing ambient background cumulative condition.

A cumulative impact analysis of greenhouse gas (GHG) emissions for the Proposed Project is provided in Section 3.6.3 "Impact AQ-3: Net Emission Increase of Greenhouse Gas Emissions during Construction and Operation of the Proposed Project. The analysis in this section considers the Proposed Project's contribution to global climate change, which was determined to be less than significant under CEQA. No further analysis of GHG emissions is included in this section.

<u>Construction Impacts on Air Quality</u>

This section discusses the combined effects on air quality during construction of the Proposed Project and other past, present, and reasonably foreseeable projects. The relevant impact of the Proposed Project is IMPACT AQ-1: Temporary Ambient Air Quality Impacts Caused by Construction Activities. Construction of the Proposed Project would generate air pollutant emissions, such as equipment and vehicle exhaust and fugitive dust. These emissions would include criteria pollutants and diesel PM. 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; these compounds are referred to as ozone precursors. Maximum daily and total air pollutant emissions were calculated for each construction pipeline spread and work crew. The emissions from these construction activities were separated into the different air basins: SCAB, MDAB, and Clark County, Nevada. A summary of the estimated maximum daily construction emissions is presented in Table 3.6-10.

Construction of the Proposed Project would take approximately 12 to 18 months. The estimated average daily emissions would exceed SCAQMD and MDAQMD daily construction emission significance thresholds for VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$. This threshold would not necessarily be exceeded daily, but it could be, if all components of the Proposed Project were to be constructed simultaneously. The emissions would be localized to those locations under construction. Facilities such as the Bighorn Electric Generating Station and other existing projects shown in Table 3.18-2 are currently generating emissions, and those emissions are factored into the evaluation of air impacts discussed in Section 3.6, "Air Quality."

Construction of the foreseeable projects within one mile of the Proposed Project would generate similar types of emissions and could contribute cumulatively to air quality impacts. Residential, commercial, and industrial development is planned in the cities along the Proposed route. If these developments were to occur concurrently with the Proposed Project, local air quality could be temporarily diminished. Individually, the large-scale foreseeable projects could exceed the daily construction emission thresholds for the same or different criteria pollutants as the Proposed Project. As indicated in Table 3.18-3 and Figures 3.18-1 through 3.18-9, some of the large-scale projects could have temporally and spatially overlapping construction.

The construction emissions estimates for the other solar projects proposed in the area, such as the First Solar project, are likely to be comparable to those for the ISEGS and Silver State projects. Given the daily emission estimates, and since the Proposed Project, EITP, ISEGS, and DesertXpress could occur concurrently, cumulative temporary air quality impacts could occur. These temporary cumulative increases in criteria pollutants could lead to or contribute to violations of ambient air quality standards. In addition, increases in PM_{10} and NO_x from these and other reasonably foreseeable future projects could contribute to a considerable net increase of criteria pollutants in a nonattainment area.

Table 3.6-19, "Mitigation Measures," lists the measures to be implemented to mitigate project construction emissions, including the use of low-emission equipment and enhanced fugitive dust controls. These mitigation measures are not expected to reduce emissions from construction activities to below the daily significance thresholds in California. Thus, under CEQA, the Proposed Project could have a potentially significant and unavoidable contribution to these cumulative impacts. However, the air quality analyses conducted for the Proposed Project indicate that CEQA-significant air quality impacts would occur only in very close proximity to construction activities, and would cease at the end of construction.

Alternative 2

Overall, Alternative 2 would have an increase in the level of impacts as compared to the Proposed Project. This is due to the longer route of the pipeline in Alternative 2 (3.6 miles longer), which would result in a higher level of emissions of hazardous pollutants and greenhouse gases. This increase would be small compared to the overall emissions associated with construction of the Proposed Project. Construction emissions would still be a direct, adverse impact under NEPA, and would be significant under CEQA, even after implementation of mitigation measures MM AQ-1a, AQ-1b, AQ-1c, and AQ-1d.

Because the cumulative impacts of the Proposed Project with concurrent residential and commercial development immediately adjacent to pipeline construction potentially would have significant adverse air quality impacts under CEQA, this same conclusion would apply to Alternative 2.

The increased emissions associated with the Alternative 2 routes would occur in different locations than the emissions associated with the Proposed Project. In two locations (Phelan Road/Baldy Mesa and Baker), the Alternative route be located further away from schools, thus reducing the potential for any adverse impacts to sensitive receptors at the schools (see Impact AQ-1e in Section 3.6). Therefore, although the Alternative 2 route would have a slightly higher level of emissions than the Proposed Project, it would reduce emissions in close proximity to the schools.

Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. These mitigation measures would reduce the level of impacts, but the level of emissions would still contribute to cumulatively considerable impacts under CEQA.

Alternative 3

Overall, Alternative 3 would have an increase in the level of impacts as compared to the Proposed Project. This is due to the longer route of the pipeline in Alternative 3 (4.1 miles longer), which would result in a higher level of emissions of hazardous pollutants and greenhouse gases. This increase would be small compared to the overall emissions associated with construction of the Proposed Project. Construction emissions would still be a direct, adverse impact under NEPA, and would be significant under CEQA, even after implementation of mitigation measures MM AQ-1a, AQ-1b, AQ-1c, and AQ-1d.

Because the cumulative impacts of the Proposed Project with concurrent residential and commercial development immediately adjacent to pipeline construction potentially would have significant adverse air quality impacts under CEQA, this same conclusion would apply to Alternative 3. Overall, the Alternative 3 route would have a slightly higher level of emissions than both Alternatives 1 and 2, and it would also still cause emissions in close proximity to two schools (see Impact AQ-1e in Section 3.6).

Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 3. These mitigation measures would reduce the level of impacts, but the level of emissions would still contribute to cumulatively considerable impacts under CEQA.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

The analysis of the No Action/No Project Alternative in Section 3.6.3 concluded that the No Action/No Project Alternative could potentially have greater impacts with respect to air quality and greenhouse gas emissions than Alternatives 1, 2, or 3, if increased future demand is met by an increase in truck and rail transport. This is because the increase in truck and rail traffic that could result under the No Action Alternative would result in an increase in emissions of both hazardous air pollutants and greenhouse gases. A summary of the potential daily emissions of criteria air pollutants for truck and rail transportation under the No Action Alternative is presented in Table 3.6-15. A summary of the estimated annual emissions of criteria air pollutants for truck and rail transportation under the no action alternative is presented in Table 3.6-16. A summary of the estimated annual GHG emissions for truck and rail transportation under the no action alternative is presented in Table 3.6-17. A detailed summary of operational emission estimates associated with the No Action Alternative is presented in Appendix C. The emission estimates in these tables do not account for the construction necessary for new loading facilities or rail terminals. It is assumed that there could be substantial emissions associated with the construction of these facilities.

These emissions would contribute to adverse cumulative impacts under NEPA, and would contribute to a cumulatively considerable impact under CEQA. Mitigation of these increased emissions would be outside of the jurisdiction of the agencies responsible for the EIS/EIR.

3.18.7 Biological Resources

3.18.7.1 Geographic and Temporal Extent

The Project would temporarily impact local plant and wildlife species within the Proposed Project area, which consist of a 100-foot side pipeline corridor 234.4 miles long; temporary and permanent access roads, staging areas, and HDD areas; the Proposed Silver Lake Pump Station; and, for maintenance and operations only, the route of the existing Calnev pipelines. The geographic range of any potential cumulative impact would vary by type of resource. Direct impacts to biological resources is only expected to occur within the active project area, but these impacts could have a wider geographic distribution if they impact resources that migrants or temporary residents in the Proposed Project area. The majority of the impacts would result from construction of the pipeline portion of the Project during a three-week construction window in any location. The Project would result a substantial adverse effect on special-status plant and wildlife species due to habitat loss and potential loss of individuals. Implementation of Applicant-proposed minimization measures and agency mitigation measures would avoid or reduce these impacts, and would reduce these impacts to less than significant levels under CEQA.

3.18.7.2 Past and Present Project Impacts / Existing Cumulative Conditions

Past and present projects have contributed to impacts to biological resources within the region. These projects, including urban, commercial, and industrial development, as well as agriculture, have resulted in disturbance of biological resources, including special status species and their habitats. Table 3.18-1 identifies past and present cumulative impact conditions that could affect biological resources.

3.18.7.3 Reasonably Foreseeable Future Projects

Figure 3.18-1 identifies future projects that could cumulatively affect biological resources.

3.18.7.4 Cumulative Impact Analysis

Proposed Project

The analysis of the Proposed Project in Section 3.7.3 identified the following potential impacts associated with biological resources:

- Impact BIO-1: Impact to vegetation communities.
- Impact BIO-2: Impact to special status plants.
- Impact BIO-3: Impact to Wildlife.
- Impact BIO-4: Impact to special status terrestrial wildlife species.
- Impact BIO-5: Impact to bird species.
- Impact BIO-6: Introduction of invasive, non-native plants.
- Impact BIO-7: Impact to Federally protected wetlands.
- Impact BIO-8: Impacts to wildlife linkages, corridors, wintering areas, and big game species ranges would be indirect, temporary, and minor.
- Impact BIO-9: Conflict with Policies, Ordinances, or Habitat Conservation Plans.

For these impacts, the analysis determined that direct and indirect, adverse impacts under NEPA could occur as a result of the Proposed Project. The effects of these impacts occurring during construction would likely not be permanent; however impacts would be long-term in nature. Ground-disturbing activities associated with installation of the 16-inch pipeline, above-ground facilities, new maintenance roads, and pipeline markers would disrupt both plant and wildlife communities. Also, due to the length of time required for revegetation efforts to be successful, impacts along the pipeline ROW could be long-term. These impacts would be avoided or reduced through implementation of the following mitigation measures:

- MM BIO-01: Staking and flagging.
- MM BIO-02: Avoid Sensitive plant species.
- MM BIO-03: White-margined beardtongue mitigation.
- MM BIO-04: Specific Contents of Restoration Plan
- MM BIO-05: WEAP
- MM BIO-06: Biological monitors.
- MM BIO-07: Biological monitors and clearing of sites accessed by heavy equipment.
- MM BIO-08: Equipment and desert tortoises.
- MM BIO-09: Water pooling.
- MM BIO-10: Trash abatement.
- MM BIO-11: Delhi sands flower-loving fly construction timing.
- MM BIO-12: Delhi sands flower-loving fly construction access.
- MM BIO-13: Directional lighting for San Bernardino kangaroo rat.
- MM BIO-14: Directional lighting for Los Angeles pocket mouse.
- MM BIO-15: Construction Area and Trench Management
- MM BIO-16: Movement of Wildlife
- MM BIO-17: Pre-Construction Surveys for Arroyo Toad.
- MM BIO-18: Collapsing of Tortoise Burrows
- MM BIO-19: Habitat Acquisition for Desert Tortoise

- MM BIO-20: Raptor nest surveys.
- MM BIO-21: Raptor nests in buffer area.
- MM BIO-22: Burrowing owl surveys.
- MM BIO-23: Vegetation Removal.
- MM BIO-24: Least Bells Vireo Habitat and Nests
- MM BIO-25:Southwestern Willow Flycatcher Habitat and Nests
- MM BIO-26: Coastal California Gnatcatcher Habitat and Nests
- MM BIO-27: Pre-Construction Surveys

Implementation of these mitigation measures would reduce these impacts to less than significant under CEQA.

The Proposed Project and alternatives would adversely affect several plant and animal species along the ROW (see Section 3.7.3). While the analysis indicates that potential direct and indirect impacts would be largely mitigated, there would be incremental losses in native habitat when combined with other activities in the region.

Vegetation

Based on the results of biological surveys, applicant-proposed minimization measures, and agency required mitigation measures, no impacts to special-status plant species are expected from the Proposed Project.

The table below identifies the types of native vegetation directly affected by the Proposed Project. In general, the other activities included in the cumulative projects list are located in similar habitats and would, therefore, combine to cause a cumulative impact to these resources. There are no data that describe known precisely how many acres of each type of habitat would be affected from these other projects.

Table 3.18-4 Impacts on Native Vegetation Within the Proposed Project

Vegetation Type	Acreage of Impacts[1]
Riversidean Sage Scrub	4
Riversidean Alluvial Fan Sage Scrub	42
Disturbed Riversidean Alluvial Fan Sage Scrub	15
Chaparral	61
Mojave Creosote Bush Scrub	1,188
Disturbed Mojave Creosote Bush Scrub	274
Desert Saltbush Scrub	55
Disturbed Desert Saltbush Scrub	52
Mojave Wash Scrub	43
Joshua Tree Woodland	31
Disturbed Joshua Tree Woodland	19
Total	1,784

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[1] Temporary and long-term acreage. Some acreage would be reclaimed after construction reducing the long-term impact to vegetation.

Cumulative impacts to special status species could also occur as direct and indirect impacts could combine to significantly affect their habitats, either temporarily or permanently by construction and operation of the Proposed Project. Special status terrestrial and avian species could also be affected by the cumulative effects of noise or vibration during construction or long-term operation of the Proposed Project when combined with other activities within a particular area. It is not known whether any of these impacts would cause a species to permanently vacate these areas or cause its extirpation. Most species, however, do reoccupy disturbed areas after construction.

Wildlife

Insects

Delhi Sands Flower-loving Fly. Based on information submitted, adverse impacts to Delhi sands flower-loving fly (DSFLF) would be limited to within the construction footprint of the new transmission line required to connect the Colton Terminal to the existing Southern California Edison transmission line located approximately 150 ft east of the North Colton Terminal fence line. Given the impacts to the DSFLF are within Colton, other urban and industrial activities would affect the species in this area. It is not known how much suitable habitat in the area is at risk by other projects. However, construction of the transmission line and the associated three power poles at the northeast corner of the Colton Terminal would result in approximately 0.92 acres of temporary impacts, but only approximately 85 square feet (0.002 acre) of permanent impacts on likely occupied Delhi sands flower-loving fly habitat.

Fish

Santa Ana Speckled Dace. Based on the applicant's proposal to directionally drill the Cajon Wash, impacts to the Santa Ana Speckled Dace will be minimized. However, some impacts to Santa Ana speckled dace or its habitat within the Cajon Wash could occur in the vicinity MP 25 in conjunction with the HDD drilling under the Cajon Wash. Potential impacts are possible in the event of a frac-out during the HDD. Drilling lubricant (typically bentonite clay) could enter speckled dace habitat when a frac-out occurs, negatively affecting the water quality or result in the direct loss of individuals. If a frac-out occurs, impacts would be localized to extensive depending on the magnitude of the frac-out. Impacts would be short-term in nature.

Impacts from other activities in the Cajon Wash could combine with the impacts of the Proposed Project to cause a short-term cumulative impact, but given the temporary nature of these impacts, it is not expect to result in a long-term loss of this species.

Amphibians

Arroyo Toad. While no individual Arroyo toads were found during site surveys, suitable habitat does exist between MP 17.5 to MP 23 of the Proposed Project ROW. There is a low likelihood that individuals could be killed while crossing roads in this area.

Reptiles

Based on existing data, there are nine species of special status reptile species identified as occurring or having a high potential to occur within the Proposed Project: the banded Gila monster, chuckwalla, coast horned lizard, coastal rosy boa, coastal whiptail, collared lizard, desert tortoise, southwestern pond turtle, and southwestern speckled rattlesnake.

Direct impacts to reptiles as a result of the Proposed Project could include excavation and movement of large equipment, and trapping individuals in open trenches, or from increased vehicle use on the site during operation and maintenance activities. The Proposed Project would result in loss of suitable habitat with the majority of habitat loss would be temporary and would occur within the construction ROW. Compaction of soils and introduction of exotic plant species due to grading and removal of vegetation during construction, operation, and maintenance activities could result in indirect adverse habitat loss over time. Similar reduction of habitat has occurred from other past and present projects, and would also occur as reasonably foreseeable future projects are developed.

The implementation of temporary fencing surrounding construction zones and Biological Monitors will reduce the potential for impacts to these species from construction. To further reduce the potential impacts to special status lizard species to less than significant under CEQA, the listed mitigation measure will need to be implemented. Additional assessments are provided for those special-status reptile species that require species-specific minimization and mitigation measures to lessen the potential impacts resulting from the Proposed Project.

Desert Tortoise. The Proposed Project may affect, and would likely adversely affect desert tortoise. A cumulative impact to this species is possible given the numbers of projects, including this one, in the tortoises' habitat in California and Nevada. Table 3.18-1 and Figure 3.18-1 identify other past, present and reasonably foreseeable projects along the Proposed Project's ROW corridor. Many of these, primarily outside of the urban areas, have suitable Desert tortoise habitat.

Construction of the proposed pipeline alignment would result in approximately 1,497.7 acres of temporary impacts to suitable desert tortoise habitat, including 1,042.2 acres of Mojave creosote bush scrub, 222.8 acres of Mojave creosote bush scrub, 32.8 acres of desert saltbush scrub, 24.3 of desert saltbush scrub, 73.1 acres of blackbush scrub, 28.6 acres of Joshua tree woodland, 18.8 acres of Joshua tree woodland, 35.2 acres of Mojave wash scrub, 13.8 acres of open channel, 4.8 acres of mixed Mojave woody scrub, and 1.3 acres of Mojave mixed steppe. The Proposed alignment would result in impacts of approximately 390.4 acres of temporary impacts on suitable desert tortoise habitat.

Other projects within the cumulative effects study area would result in the potential loss of thousands of additional acres of suitable tortoise habitat and affect numerous individuals. While all of these projects would be subject to strict mitigation measures, including translocation, ultimately there would likely be a cumulative impact to the species.

Southwestern Pond Turtle. As noted in Section 3.7.3, impacts to southwestern pond turtle could occur within the vicinity of MP 54 where there is suitable habitat for this species; however this species was not detected during the field surveys. The area would not be directly disturbed by the Proposed Project, as the Applicant has committed to using a HDD to install the pipeline under the Mojave River.

Given the Proposed Project's engineering design to use an HDD in the area suitable for the Southwestern Pond Turtle, it is not expected that there would be cumulative impacts to this species.

Mammals

There were nine species of special status mammal species identified as occurring or having a high potential to occur within the Proposed Project; Los Angeles pocket mouse, Mohave ground squirrel, mountain lion, San Bernardino kangaroo rat, San Diego black-tailed jackrabbit, San Diego desert woodrat, southern mule deer, Townsend's big-eared bat, and western mastiff bat. The Proposed Project would result in loss of suitable habitat with the majority of habitat loss would be both short-term and long-term in duration within the construction ROW. Compaction of soils and introduction of exotic plant species due to grading and removal of vegetation during construction, operation, and maintenance activities could result in indirect adverse habitat loss over time. Additional disturbance due to increased noise, light, and vibration during construction could result in the temporary displacement of individuals. Impacts would be minor and would be short-term in nature due to the temporary loss of suitable habitat. Impacts would be localized and limited to the construction footprint.

Mohave Ground Squirrel. No Mohave ground squirrels (MGS) were detected during the visual surveys of suitable habitat along the Proposed pipeline route. It is possible that MGS could be present, which the Proposed Project could adversely affect. However, as noted in Section 3.7.3, this impact would be mitigated through minimization and mitigation measures and would result in less than significant impacts (under CEQA) to the species.

San Bernardino Kangaroo Rat. The San Bernardino kangaroo rat was not detected during the visual surveys of suitable habitat along the proposed pipeline route. It is possible that Kangaroo rat could be present, which the Proposed Project could adversely affect. However, as noted in Section 3.7.3, this impact would be mitigated through minimization and mitigation measures and would result in less than significant impacts (under CEQA) to the species.

Los Angeles Pocket Mouse. The Los Angeles pocket mouse was not detected during the visual surveys of suitable habitat along the proposed pipeline route. The extent of suitable Los Angeles pocket mouse habitat overlaps the extent of the identified San Bernardino kangaroo rat habitat. Unlike the San Bernardino kangaroo rat there is no DCH designated for the Los Angeles pocket mouse because this species is not a federal-listed species. Due to similarity in the biological and ecological characteristics of the Los Angeles pocket mouse and the San Bernardino kangaroo rat, impacts to the Los Angeles pocket mouse resulting from the construction, operation, and maintenance of the Proposed Project would be similar in nature to those impacts describe for the San Bernardino kangaroo rat.

Mountain Lion. Although no individual mountain lions were observed during the biological surveys, mountain lion tracks were observed within Crowder Canyon, near MP 24.4. Based on the observation of tracks and the presence of suitable habitat to support mountain lions, the project has the potential to impact this species. Potential impacts to mountain lions would include temporary loss of foraging habitat during construction activities and temporary displacement of individuals during construction and maintenance activities. However, large areas of suitable habitat exist immediately adjacent to the proposed impact area, and all potential impacts would be short-term and minor and would be localized to specific areas of construction or maintenance activities. Given the low potential for direct or indirect impacts, it is not expected that the Proposed Project would cause a cumulative impact to this species.

Southern Mule Deer. As noted in Section 3.7.1, no southern mule deer was observed during the biological surveys, southern mule deer tracks and scat were observed along the portion of the Proposed Project that passes through Cajon Pass. Based on the observation of southern mule deer sign and the presence of suitable habitat to support the deer, the project has the potential to impact this species. Given the low potential for direct or indirect impacts, it is not expected that the Proposed Project would cause a cumulative impact to this species.

Riparian Special-Status Bird Species

The following 14 species were either observed in the Proposed Project, determined to have a high potential of occurrence, or were identified by the agencies as species that need to be addressed; bald eagle, common yellowthroat, Cooper's hawk, least Bell's vireo, least bittern, Nutall's woodpecker, southwestern willow flycatcher, summer tanager, warbling vireo, western yellow-billed cuckoo, Wilson's warbler, yellow-breasted chat, and yellow warbler. Potential impacts to these species include all of the impacts listed above for all protected bird species.

Least Bell's Vireo. Two least Bell's vireo nesting territories were detected approximately 300 ft from the proposed centerline just south of MP 54 at the Mojave River crossing. Additional USFS modeled habitat occurs in the vicinity of MP 16 through 22.5 within the Cajon Pass area (USFS 2008). Although the results of the 2008 field surveys did not identify the presence of any nesting least Bell's vireos within the Cajon Pass area, there is the potential that least Bell's vireo could be nesting within the suitable habitat along this portion of the Proposed Project. Historic CNDDB and USFWS records of least Bell's vireo occur near MPs 21 and 23, respectively. A transient least Bell's vireo was detected on April 23, 2008 near MP 10.7.

Impacts to suitable least Bell's vireo habitat would occur during the HDD operations near MP 24.5 and 25.5 inch Cajon Pass and at Mojave River near MP 54. The HDD operations at these areas along the Proposed Project would result in the clearing and grading of the vegetation for the establishment of required temporary workspaces for HDD operations. Near MP 24.5 and 25.5, the creation of HDD workspaces would result in loss of approximately 3.5 acres of riparian scrub habitat. At MP 54, an approximately 25-ft wide swath of riparian habitat would be cleared across the Mojave River in preparation for the HDD operation. At MP 54, the creation of the HDD workspaces would resulting a loss of approximately 0.4 acres of least Bell's vireo habitat, include including 0.1 acres of southern willow scrub, 0.1 acres of riparian forest, and 0.2 acres of riparian woodland. The impacts to suitable least Bell's vireo habitat could be either short-term or long-term depending on the effectiveness of revegetation efforts to re-establish preconstruction conditions.

The direct loss of suitable habitat would combine with losses of similar habitats from other projects in the region. It is not known, however, how many acres of suitable least Bell's Vireo habitat would be affected by these other projects. It is also not known how many acres of lost habitat would result in significant (under CEQA) cumulative impact to the species.

Southwestern Willow Flycatcher. There were no southwestern willow flycatchers detected during the 2008 field surveys, however suitable habitat does occur within the Proposed Project, along Cajon Wash (near MP 23) and at the Mojave River crossing (MP 54). USFS modeled habitat for southwestern willow flycatcher occurs near MP 14 through 29 (USFS 2001). Due to the presence of suitable habitat, there is the potential that this species to occur within the Proposed Project; therefore construction activities could result in impacts to the southwestern willow flycatcher and/or southwestern willow flycatcher habitat.

The creation of HDD workspaces would result in loss of approximately 3.5 acres of riparian scrub habitat. At MP 54, the creation of the HDD workspaces would resulting a loss of approximately 0.4 acres of southwestern willow flycatcher habitat, include including 0.1 acres of southern willow scrub, 0.1 acres of riparian forest, and 0.2 acres of riparian woodland. The impacts to suitable southwestern willow flycatcher habitat would be short-term or long-term depending on the effectiveness to revegetate the ROW to match the habitat characteristics preferred by the southwestern willow flycatcher.

The direct loss of suitable habitat would combine with losses of similar habitats from other projects in the region. It is not known, however, how many acres of suitable southwestern willow flycatcher habitat would be affected by these other projects. It is also not known how many acres of lost habitat would result in significant cumulative impact to the species under CEQA.

Western Yellow-Billed Cuckoo. No western yellow-billed cuckoos were detected during the 2008 surveys, although suitable habitat exists at the Mojave River survey location near MP 54. Contiguous riparian habitat following the course of the Mojave River extends well beyond the Proposed Project, with a large patch in the Proposed Project vicinity extending beyond 670 acres. Within the Proposed Project, the habitat is relatively constrained in the Proposed Project, with a minimum width of 450 feet, and maximum width of approximately 1,500 feet. Due to the presence of suitable habitat and historic occurrence of the species along the Mojave River, there is the potential that this species may now occur within the Proposed Project, therefore construction activities could result in impacts to the western yellow-billed cuckoo. Impacts to suitable western yellow-billed cuckoo habitat would occur during the HDD operations near MP 54. At MP 54, the creation of the HDD workspaces would resulting a loss of approximately 0.4 acres of western yellow-billed cuckoo, include including 0.1 acres of southern willow scrub, 0.1 acres of riparian forest, and 0.2 acres of riparian woodland. The impacts to suitable western yellow-billed cuckoo habitat would be short-term or long-term depending on the effectiveness to re-vegetate the ROW to match the habitat characteristics preferred by the western yellow-billed cuckoo.

The direct loss of suitable habitat would combine with losses of similar habitats from other projects in the region. It is not known, however, how many acres of suitable western yellow-billed cuckoo habitat would be affected by these other projects. It is also not known how many acres of lost habitat would result in significant cumulative impact to the species under CEQA.

Non-Riparian Bird Species

Eighteen species of non-riparian were either observed in the Proposed Project, determined to have a high potential of occurrence, or were identified by the agencies as species that need to be addressed; band-tailed pigeon, Bendire's thrasher, burrowing owl, calliope hummingbird, coastal California gnatcatcher, common nighthawk, golden eagle, Lawrence's goldfinch, Le Conte's thrasher, loggerhead shrike, long-eared owl, mountain quail, oak titmouse, prairie falcon, song sparrow, Swainson's hawk, Swainson's thrush, and tree swallow. Potential impacts to these species include all of the impacts listed above for all protected bird species.

Burrowing Owl. No burrowing owls were observed during the focused surveys, but suitable burrowing owl habitat is present along portions of the Proposed Project. During the focused surveys, 11 potential, inactive burrowing owl burrows were detected. No suitable habitat was identified on USFS lands. Two burrowing owls were observed outside of the focused surveys; one owl at MP 79.5 and one owl near the Colton Terminal.

No designated critical burrowing owl habitat was identified in the biological surveys prepared for this EIS/EIR. Burrowing owls usually occupy abandoned mammal burrows, which are often found in disturbed areas. As such, burrowing mammals would be likely to re-colonize Proposed Project, providing new burrows for potential owl nests. Pre-construction and pre-maintenance surveys, as required by mitigation measures, would avoid the potential for project-related impacts to burrowing owls. Given the lack of potential impacts to individuals or habitat within the ROW, it is not expected that the Proposed Project would cumulatively impact this species.

Coastal California Gnatcatcher. The coastal California gnatcatcher was not detected during protocol-level surveys in 2008; however there is the potential for impacts to this species because suitable habitat exists within the Proposed Project. Potential habitat for this species exists at the southern end of the alignment (about MP 10.5 to 24), and historical locations are known near MP 14 (California Department of Fish and Game [CDFG] 2008). Construction and maintenance activities would result in a temporary disturbance. The majority of construction activities would occur within existing developed areas (*e.g.,* Institution Road, Cajon Boulevard), or disturbed areas (*e.g.,* dirt roads south of Institution Road) resulting in little impact to suitable coastal California gnatcatcher habitat. Pipeline construction would result in impacts to approximately 18.4 acres of suitable coastal California gnatcatcher habitat. The temporal impacts to suitable coastal California gnatcatcher habitat would depend on the effectiveness of revegetation efforts to reestablish preconstruction conditions.

The direct loss of 18.4 acres of suitable habitat would combine with losses of similar habitats from other projects in the region. It is not known, however, how many acres of suitable coastal California gnatcatcher habitat would be affected by these other projects. It is also not known how many acres of lost habitat would result in significant cumulative impact to the species under CEQA.

Alternative 2

Section 3.7.3 concluded that Alternative 2 would have a similar level of biological resources impacts as compared to the Proposed Project. With the Wagon Train Alternative, Alternative 2 would have a reduced potential for biological impacts to the arroyo toad, least Bells vireo, and Southwestern Willow Flycatcher by using an HDD to divert the pipeline under Interstate 15, thereby avoiding the Cajon Wash riparian area. Under the Baker Alternative, impacts to biological resources would be reduced by placing the pipeline within the Interstate 15 corridor for 2.5 miles and then routing it through the developed town of Baker for 1 mile. This alternative route would avoid approximately 50 acres of disturbance and substantial construction and maintenance traffic that would be associated with the Proposed Project route in this area. However, the Zzyzx and Silver Lake Pump Station Alternatives would result in greater impacts to biological resources by increasing construction and maintenance traffic in previously undisturbed areas, including desert tortoise habitat. The Zzyzx and Silver Lake Alternatives would disturb approximately 18 and 3 acres, respectively, of previous undisturbed area while the Proposed Project route would use either existing ROW corridor or already developed area. Therefore, the Alternative 2 route at Wagon Train and Baker would have fewer biological resource impacts overall than the Proposed Project; however, the Proposed Project would have fewer adverse impacts than Alternative 2 at Zzyzx and Silver Lake.

Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. These mitigation measures would reduce the level of impacts under CEQA to less than significant. Therefore, Alternative 2 would not contribute to a cumulatively considerable impact under CEQA.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. With respect to biological resources, Alternative 3 would incorporate the reduced impacts associated with avoidance of the Cajon Wash riparian area at the Wagon Train Road HDD area, and would also avoid disturbing 18 acres of previously undisturbed habitat at the Zzyzx Alternative location. Similar to Alternative 2, Alternative 3 would result in permanent impacts to the same 3 acres of previously undisturbed area that the Proposed Project would avoid under the Silver Lake Pump Station Alternative. Alternative 3 would not incorporate the reduced biological resource impacts associated with the Baker Alternative route. All other biological resource impacts under both NEPA and CEQA would remain the same as Alternatives 1 and 2. Therefore, Alternative 3 would not contribute to a cumulatively considerable impact under CEQA.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, the existing projects within the region, including the existing Calnev 8-inch and 14-inch pipelines, would continue to have the same potential for impacts to biological resources as they do now. Ultimately, fuel delivery capacity associated with the current delivery systems would be reached, and deliveries of fuel by truck and/or rail would likely increase. These activities would likely require construction of loading and unloading areas in undetermined locations. Because the locations are undetermined, the biological impacts associated with these facilities cannot be predicted. However, it is likely that these facilities would be located in urban and developed areas, and therefore, impacts to biological resources are unlikely. Therefore, the No Action Alternative would not contribute to cumulative impacts to biological resources.

3.18.8 Cultural Resources

3.18.8.1 Geographic and Temporal Extent

The geographic extent considered in the cumulative effects analysis includes projects that have the ability to affect cultural resources within the Area of Potential Effect (APE) for the Proposed Project, as defined in Section 3.8.1.2. The horizontal extent of the direct APE, as defined in Section 3.8.1.2, consisted of a 250-foot-wide area centered on the pipeline (i.e., 125 feet on either side of the proposed centerline of the pipeline); for access roads, the APE consists of the access roads and a surrounding 50-foot buffer; and for staging areas, the boundaries of the staging areas and a surrounding 100-foot buffer. The vertical extent of the direct APE is an area to a depth of at least 6 feet below ground surface for the majority of the Project. For HDD locations, the APE included the footprint temporary workspace areas. Additionally, in Nevada, the APE includes four aboveground facilities (WSA 2009b). The APE for indirect effects also included additional areas where historic properties may be impacted by visual, atmospheric, and audible effects and changes to historic integrity aspects of setting, feeling, and association (URS Corporation 2009b).

The temporal scope for the cumulative effects analysis varies depending in the type of effect. For direct effects to resources, the temporal scope could be permanent, if the projects were to cause damage or irreveraible looss of specific resources. For indirect effects due to air emissions, noise, or visual impacts, the temporal scope would be temporary, occurring only during construction.

3.18.8.2 Past and Present Project Impacts / Existing Cumulative Conditions

Past and present projects have contributed to impacts to cultural resources within the region. These projects, including urban, commercial, and industrial development, as well as agriculture, have resulted in disturbance of archaeological, architectural, and historic resources. Table 3.18-1 identifies past and present cumulative impact conditions that could affect cultural resources.

3.18.8.3 Reasonably Foreseeable Future Projects

Figure 3.18-1 identifies future projects that could cumulatively affect cultural resources.

3.18.8.4 Cumulative Impact Analysis

Construction of the Proposed Project would involve ground disturbance along the Area of Potential Effects (APE), which would disturb or could destroy subsurface cultural resources, resulting in a significant impact under CEQA. This significant impact would be reduced to a less than significant (under CEQA) level by implementation of MMs found in Section 3.8, Cultural Resources. After mitigation, the Proposed Project would not impact the long-term productivity of cultural resources within the APE.

It is possible that impacts to cultural and historic resources from the Proposed Project could combine with impacts to similar resources from other regional projects to cause cumulative impacts. It is more likely, however, that stringent mitigation measures that strive to avoid impacts to cultural resources would avoid or eliminate the potential for direct and indirect impacts and potential cumulative impacts.

Proposed Project

The analysis of the Proposed Project in Section 3.8.3 identified the following potential impacts associated with cultural resources:

- Impact Cult-1: Adverse impact to an historic property or historical or archaeological resource.

For Impact Cult-1, the analysis determined that direct, adverse impacts under NEPA could occur as a result of the Proposed Project, and that these impacts could be significant under CEQA. These impacts would occur during construction, and if they occurred, they would likely be permanent. These impacts would be avoided or reduced through implementation of the following mitigation measures:

- MM CULT-1a: Avoidance
- MM CULT-1b: Designation of Environmentally Sensitive Areas (ESAs).
- MM CULT- 1c: Data Recovery
- MM CULT-1d: Historic Properties Treatment Plan (HPTP)
- MM CULT-1e: Monitoring
- MM CULT-1f: Unanticipated Discoveries Plan
- MM CULT-1g: Pre-Construction Surveys (for the Phelan Road/Baldy Mesa and Sunset Lateral Alternatives only).

Implementation of these mitigation measures would reduce these impacts to less than significant under CEQA.

Most of the Proposed pipeline route would be co-located with the existing Calnev pipelines or within the Interstate 15 corridor, and therefore impacts to cultural resources associated with the Proposed Project would occur in an area which has already been disturbed. It is possible that impacts to cultural resources from the Proposed Project could combine with impacts to similar resources from other regional projects to cause cumulative impacts. It is more likely, however, that stringent mitigation measures that strive to avoid impacts to cultural resources would substantially reduce the potential for direct and indirect impacts and potential cumulative impacts. Because no cultural resource impacts would be associated with the Proposed Project, the Proposed Project would not contribute to cumulative impacts associated with cultural resources.

Alternative 2

Overall, Alternative 2 would have a slightly increased level of impacts as compared to the Proposed Project. In some areas (such as the Zzyzx route), Alternative 2 would have an increased potential for impacting previously unidentified, buried archaeological resources because the Alternative route would pass through an active wash, as opposed to a bedrock-based location. Similarly, use of the Phelan Road/Baldy Mesa Alternative and Sunset Lateral routes could have an increased risk of impacts because surveys have not been completed in these areas. Use of the Silver Lake Pump Station Alternative location may have an increased risk of disturbance of previously unidentified resources because it is in an undeveloped area, while the Proposed location is situated in a developed area adjacent to the SCE substation and the Baker Elementary and High School.

The only portion of the Alternative route that would have a lower potential for impacts to cultural resources would be the Baker Alternative route. This is because the Baker Alternative route would avoid the disturbance of approximately 50 acres of previously undisturbed desert by routing the pipeline through the developed town of Baker.

Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. In addition, mitigation measure MM CULT-1g would require pre-construction surveys of the Phelan Road/Baldy Mesa and Sunset Lateral Alternative routes, should those routes be selected. These mitigation measures would reduce the level of impacts under CEQA to less than significant.

Because the Proposed Project is not expected to contribute to adverse cumulative impacts, and this Alternative would have a reduced potential for impacts, Alternative 2 also would not contribute to adverse cumulative impacts.

Alternative 3

With respect to cultural resources, Alternative 3 would have a lower potential for impacts than Alternative 2, because of the reduced potential for impacts along the Baker Alternative route. While Alternative 2 would avoid disturbance of approximately 50 acres of previous undisturbed desert, Alternative 3 would not avoid that disturbance. In the Baker area, Alternative 3 would have the same potential cultural resources impacts as the Proposed Project, and these would be greater than the impacts associated with Alternative 2. However, because the Proposed Project is not expected to contribute to adverse cumulative impacts, Alternative 3 also would not contribute to such impacts.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, the existing projects within the region, including the existing Calnev 8-inch and 14-inch pipelines, would continue to have the same potential for impacts associated with cultural resources as they do now. Ultimately, fuel delivery capacity associated with the current delivery systems would be reached, and future demand could be met by increased truck and/or rail deliveries. These activities would likely require construction of loading and unloading areas in undetermined locations. Because these locations are unknown, the potential cumulative impacts associated with cultural resources at these locations cannot be determined.

3.18.9 Paleontological Resources

Although the analysis of the Proposed Project and Alternatives in Section 3.9.3 identified potential impacts that could occur to paleontological resources, these potential impacts were expected to be completely avoided and/or minimized through the implementation of mitigation measures. Because paleontological resource impacts associated with the Proposed Project and Alternatives would not occur, they would not contribute to adverse cumulative impacts associated with paleontological resources.

3.18.10 Lands and Realty

3.18.10.1 Geographic and Temporal Extent

Direct and indirect impacts to these activities would be limited to loss of current or future lands actions as a result of the Proposed Project or alternatives. While there are other permitted land use authorizations and easements along the ROW corridor, none would be permanently closed by the Proposed Project.

3.18.10.2 Past and Present Project Impacts / Existing Cumulative Conditions

Past and present projects have contributed to impacts to land use within the region. These projects, including urban, commercial, and industrial development, agriculture, and environmental protections have resulted in limiting the availability of land for other land uses. Section 3.10.1 identifies all currently permitted land use authorizations along the ROW.

3.18.10.3 Reasonably Foreseeable Future Projects

Figure 3.18-1 identifies other projects within the geographic extent of the Proposed Project and the estimated timeframes for construction and operation.

3.18.10.4 Cumulative Impact Analysis

Proposed Project

The analysis of the Proposed Project and Alternatives in Section 3.10.3 determined that temporary disturbance to residents would be a direct, adverse impact under NEPA. This impact would occur during construction, and if it occurred, the effects would be temporary. The impact would be avoided or reduced through implementation of the following mitigation measures:

- MM LU-3a: Restore Property
- MM LU-3b: Secure Trench Area
- MM LU-3c: Maintain Access

Because land use impacts associated with the Proposed Project and Alternatives would be temporary during construction, and would be reduced or avoided through mitigation, they would not contribute to cumulative impacts associated with land use.

3.18.11 Special Management Areas

The Special Management Areas (SMAs) traversed by the Proposed Project, and therefore potentially subject to impacts, include the San Bernardino National Forest, the California Desert Conservation Area, the Mojave Monkeyflower and Cronese Basin ACECs, and the Shadow Valley and Ivanpah Desert Wildlife Management Areas (DWMAs). In addition, the Proposed Project would border several SMAs, including the Mojave fringe-toed lizard, Calico Early Man Site, Parish's Phacelia, and Manix ACECs, as well as the Mojave National Preserve. The geographic extent of any impacts to SMAs would depend on the type of resource being protected by the management objectives for the area. It is possible that activities on the Proposed Project route could impact resources within a bordering SMA if those activities were visible from within the SMA, or were to release pollutants or hazardous materials into an SMA. The potential for these resource-specific impacts is addressed in those specific resource sections.

Although the analysis of the Proposed Project and Alternatives in Section 3.11.3 identified potential impacts that could occur to Special Management Areas, these potential impacts were expected to be completely avoided and/or minimized through the implementation of mitigation measures. Because Special Management Areas impacts associated with the Proposed Project and Alternatives would not occur, they would not contribute to adverse cumulative impacts to Special Management Areas.

3.18.12 Visual/Aesthetic Resources

3.18.12.1 Geographic Extent and Timeframe

The geographic scope for the analysis of cumulative impacts on visual resources includes all projects within the same viewshed as the Proposed Project. Because the Proposed Project is linear the cumulative analysis considers all planned residential, commercial, infrastructure, and renewable energy development in those valley regions that would be visible from the viewpoints identified in Section 3.12.3.3 Methodology. Additional detail about the determination of the geographic extent is provided below. Cumulative impacts to visual resources could occur during the construction or operation phases of the Proposed Project.

3.18.12.2 Past and Present Project Impacts

__Developed or Built Landscape__

Developed lands in the Proposed Project area include residential, rural residential, industrial, and commercial lands in the municipalities and populated places crossed by the Proposed Project. South of the San Bernardino National Forest (SBNF), the pipeline would cross the cities of Colton, Bloomington, and Rialto. These cities are characterized by residential, commercial, and industrial development. North of the SBNF, the pipeline would cross the cities of Victorville, Adelanto, and Barstow. The portions of these cities crossed by the Proposed Project are characterized by lower density development and can be largely classified as rural residential. The pipeline crosses undeveloped land in Nevada until its terminus in the Paradise/Winchester Community Planning Area in Clark County. Development in this area is characterized by industrial and residential development.

Of the 234 miles of pipeline that would be constructed, approximately 150 miles would be constructed adjacent to the existing Calnev ROW. In rural areas, the existing pipeline is permanently visible where revegetation efforts were incomplete; additionally, the access road paralleling the entirety of the existing Calnev system and the Calnev pipeline hats, or markers, along the pipeline route are evident.

Undeveloped or Natural Landscape

After leaving Rialto, the pipeline would cross the SBNF parallel to Interstate 15 (I-15) within an established utility corridor. Views within the SBNF along the Proposed Project route are characterized by cismontane vegetative cover and mountainous backdrop.

Beyond the SBNF, the pipeline would cross lands almost entirely in the Mojave Desert. This area is generally characterized as open, desert habitat. Terrain features include dry lakebeds, rolling hills, bajada slopes, broad flat plains, and jagged mountains.

Terrain in the Nevada portion of the Proposed Project is similar to that in California. It is largely flat with dry lake beds.

3.18.12.3 Reasonably Foreseeable Future Projects

Reasonably foreseeable projects that might contribute to cumulative impacts to visual resources are those that might be constructed simultaneously within the same viewshed of the Proposed Project. Projects that meet these criteria include the DesertXpress, the ISEGS Solar Energy Project, and the Silver State Solar Project. The DesertXpress is a proposed high-speed rail between Victorville, California and Las Vegas, Nevada, adjacent to I-15. The ISEGS Solar Energy Project and the Silver State Solar Energy Project will be constructed in the Ivanpah Valley on the border between California and Nevada.

3.18.12.4 Cumulative Impact Analysis

Proposed Project

The analysis of the Proposed Project in Section 3.12.3 identified the following potential impacts associated with aesthetics and visual resources:

- Impact VIS-1: Impacts on KOPs
- Impact VIS-2: Adverse Effect on a Scenic Vista
- Impact VIS-3: Damage to Scenic Resources within a State Scenic Highway
- Impact VIS-4: Degradation of Existing Visual Character
- Impact VIS-5: New Source of Substantial Light or Glare Affecting Daytime or Nighttime Views

For these impacts, the analysis determined that direct and indirect, adverse impacts under NEPA could occur as a result of the Proposed Project. The effects of these impacts occurring during construction would likely be temporary. However, the visual nature of above-ground facilities, new maintenance roads, and pipeline markers would be permanent. Also, due to the length of time required for revegetation efforts to be successful, impacts along the pipeline ROW could be long-term. These impacts would be avoided or reduced through implementation of the following mitigation measures:

- MM VIS-1a: Reclamation Plan
- MM VIS-1b: Consult with jurisdictional agencies to appropriately install barriers
- MM VIS-1c: Minimize contrast introduced by the construction of the Silver Lake Pump Station
- MM VIS-5: Control pump station lighting by shielding and downcasting lights.

Implementation of these mitigation measures would reduce these impacts to less than significant under CEQA.

Potential cumulative visual impacts would vary depending on the level of contrast with the surrounding area. The majority of the Proposed Project would pass through undeveloped desert areas, where the contrast with the existing landscape would be high. However, the Proposed Project would also pass through many developed cities and communities. In these areas, there would be more potential viewers, however due to the existence of buildings and other structures there would be fewer potential views than in open areas. Therefore the level of contrast would be lower.

Although the Proposed Project would have temporary impacts on Eligible State Scenic Highway I-15 between Barstow, California and Baker, California, as well as on Historic Highway 66, there are no reasonably foreseeable projects that would contribute to cumulative impacts; therefore the Proposed Project's impact would only be a direct impact.

The Proposed Project would have potential impacts from the creation of new light sources at the Silver Lake Pump Station. With the implementation of MM VIS-1c and MM VIS-5, the visual impact of light and glare would be less than significant under CEQA. The pump station would be located in a developed area where there is already existing lighting associated with commercial and residential development, and there are no reasonably foreseeable projects in the viewshed of the Silver Lake Pump Station. Therefore, the contribution of new light sources associated with the Proposed Project toward a cumulative impact would be less than significant under CEQA.

Construction of the Proposed Project would temporarily degrade the existing visual character by cluttering viewsheds with construction equipment and signage and damaging the landscape through open cutting, grading, soil piling, and other construction related activities. Impacts would be greatest in undeveloped areas. Construction activities in these areas would temporarily diminish the existing visual character. The majority of the Proposed Project would be constructed in undeveloped areas, where the potential degradation of existing visual character or quality would be highest. However, construction would only occur on small segments of the Proposed Project route, relative to the size of the viewshed in undeveloped areas. In addition the number of viewers in these areas would be low.

Revegetation measures to restore the ROW to its preexisting condition are described in Section 2. Due to the difficulty of revegetation in arid climates, mitigation measures MM VIS-1a and MM VIS-1b have been identified to reduce the permanent impact of the Proposed Project on the existing visual character to less than significant under CEQA.

The DesertXpress high-speed rail is a reasonably foreseeable project that would be constructed in the same viewshed of the Proposed Project, and could be constructed concurrently. The DesertXpress would be a linear project and, like the Proposed Project, follow the route of I-15 east of Barstow, CA (USDOT FRA 2010). Since they are both linear projects, there is a possibility that construction of the two projects could be concurrent and contiguous, which would result in a greater visual impact due to the multiple pieces of equipment and different groups of construction personnel in the same viewshed over the distance of the projects. The main viewer group under evaluation in this area would be travelers on I-15, a major interstate highway with a speed limit of 70 mph. Travelers on I-15 would only be subject to the cluttered viewsheds due to construction for a very short period. Therefore, there would not be a cumulative impact on visual resources.

Other reasonably foreseeable projects that would occur in the viewshed of the Proposed Project and could be constructed concurrently are the ISEGS Solar Energy Project and the Silver State Solar Project, in the Ivanpah Valley. If the Proposed Project and either the ISEGS Solar Energy Project or the Silver State Solar Project, or both, had overlapping construction schedules, there would be a cumulative impact to visual resources in the Ivanpah Valley. However, the total project area of ISEGS is 3,564 acres, including several 400-foot tall "power towers"; the total project area of the Silver State Solar Project is 2,967 acres. Both of these projects would have much greater visual impacts than the Proposed Project. Furthermore, the contribution of the Proposed Project, an underground pipeline, to the overall cumulative impact would be limited to the construction phase, which, because it is a linear project, would constitute only a short time period in one place. Therefore the contribution of the Proposed Project to the overall cumulative impact would less be than significant under CEQA.

The Silver Lake Pump Station would be located north of Baker, CA, adjacent to Highway 247. The pump station would be the only component of the Proposed Project that would remain above ground, so it has the greatest long-term visual impact. However, the pump station is sited in an area with other development, so it would not alter the character the surrounding area. With the implementation of MM VIS-1c, the impact of the Silver Lake Pump Station would result in a less than significant cumulative impact under CEQA.

The majority (150 miles) of the Proposed Project would be adjacent to the existing Calnev pipeline. Therefore, in the areas where the Proposed Project and the existing pipeline would be adjacent, the Proposed Project would not alter the visual character of the area, since the ROW already exists.

The Proposed Project would cross the San Bernardino National Forest, a mainly undeveloped area. However, the Proposed Project would follow an existing transmission ROW, and therefore would not alter the existing visual character in that undeveloped area.

Visual impacts associated with the Proposed Project construction would include the removal of existing vegetation and the exposure of bare soils within construction workspaces, as well as earthwork and grading, open cutting, potential blasting, rock formation alteration or removal, and equipment storage. These construction impacts are considered temporary for underground pipeline once the land has reverted to its original uses, as outlined in the Calnev Reclamation Plan.

Despite reclamation, the pipeline ROW would be visible permanently, particularly in areas of low rainfall where reseeding efforts may be ineffective and in areas where the ROW is permanently cleared of trees or larger vegetation. Additionally, the permanently clear ROW may increase access in undeveloped areas to OHV enthusiasts and other unapproved uses, reducing the effectiveness of revegetation plans. Longer-term visual impacts would also result from the removal or alteration of vegetation that may currently provide a visual barrier or the introduction of landform changes that introduce contrasts in visual scale, special characteristics, form, line, color, or texture.

Because implementation of the mitigation measures would reduce impacts to less than significant under CEQA, the Proposed Project would not contribute to a cumulatively considerable impact under CEQA.

Alternative 2

Section 3.12.3 concluded that Alternative 2 would have a reduced level of aesthetic and visual resources impacts as compared to the Proposed Project. In the Zzyzx area, Alternative 2 would have a reduced potential for visual impacts by routing the pipeline further from the highway, and by eliminating the need for an additional maintenance road. Similarly, the location of the Silver Lake Pump Station in Alternative 2 would reduce the visibility of the facility to local residents and visitors using SF 127 to access Death Valley. In the Wagon Train area, the placement of the route on the side of Interstate 15 that has already been developed would reduce the length of new maintenance road required on the undeveloped side, and would therefore reduce potential visual impacts in this area. Therefore, the Alternative 2 route at Zzyzx, the Silver Lake Pump Station, and Wagon Train would be have a reduced level of visual resource impacts than the Proposed Project.

Mitigation measures proposed to reduce impacts for the Proposed Project would also be implemented for Alternative 2. These mitigation measures would reduce the level of impacts under CEQA to less than significant. Therefore, Alternative 2 would not contribute to a cumulatively considerable impact under CEQA.

Alternative 3

Alternative 3 would include selection of the Rialto, Wagon Train Road, Zzyzx, Silver Lake Pump Station Alternative, and Sunset Lateral portions of Alternative 2. In the areas of the Bloomington, Phelan Road/Baldy Mesa, and Baker Alternatives, the Proposed Project route would be followed. With respect to aesthetics and visual resources, Alternative 3 would incorporate the reduced impacts associated with Zzyzx Alternative route, the Silver Lake Pump Station Alternative location, and the Wagon Train Road HDD. All other visual resource impacts under both NEPA and CEQA would remain the same as Alternatives 1 and 2. Therefore, Alternative 3 would not contribute to a cumulatively considerable impact under CEQA.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, the existing projects within the region, including the existing Calnev 8-inch and 14-inch pipelines, would continue to have the same potential for impacts to aesthetics and visual resources as they do now. Ultimately, fuel delivery capacity associated with the current delivery systems would be reached, and future demand could be met by increased truck and/or rail deliveries. These activities would likely require construction of loading and unloading areas in undetermined locations. Because the locations are undetermined, the visual impacts associated with these facilities cannot be predicted. However, it is likely that these facilities would be located in urban and developed areas, and therefore impacts to visual resources are unlikely. Therefore, the No Action Alternative would not contribute to cumulative impacts to visual resources.

3.18.13 Noise

3.18.13.1 Geographic Extent and Timeframe

The geographic scope of noise impacts is limited to locations along the Proposed Route where there are receptors, which includes the urban areas in both San Bernardino and Clark Counties, and the populated areas in Adelanto, Victorville, Barstow, Baker, Primm, and Jean. In the EPA's "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety", an L_{dn} of 55 dBA outdoors and 45 dBA indoors were identified as noise thresholds that would prevent activity interference or annoyance. The analysis of direct and indirect noise impacts from the Proposed Project in Section 3.13 determined that these noise levels would only be potentially exceeded within 1,000 feet of the Propsoed Project. Therefore, the Proposed Project would only have the potential to contribute to cumulative noise impacts within 1,000 feet of the construction zone. Noise impacts in any given area would only occur during construction hours (during the day), and would only occur until the construction zone had proceeded past any given receptor location.

3.18.13.2 Past and Present Project Impacts/Existing Cumulative Conditions

Noise, in general, reflects the current noise generated, rather than noise from past projects; therefore this cumulative analysis will focus on present conditions and the potential contribution of reasonably foreseeable future projects.

Ambient noise levels reflect current land uses and development. Ambient noise levels at certain locations along the project route are provided in Section 3.13.1, "Existing Noise Sources and Noise Sensitive Areas Near the Proposed Project." The character of the area along the project route varies from desert open space to rural to urbanized. Existing noise sources include roads, freeways, highways, railroads, and airports.

Areas where increases in noise levels are most noticeable are locations such as residences, schools, hospitals, motels, and churches. Table 3.13-5 "Schools, Churches, and Hospitals within 1 Mile of the ROW" enumerates the number of these noise sensitive land uses near the proposed ROW. Approximately, 21 schools, 51 churches, and two hospitals are located within 1 mile of the center of the ROW (Table 3.13-5). In addition, 15 recreational and special interest areas would be crossed by the Proposed Project.

3.18.13.3 Reasonably Foreseeable Future Projects

Noise levels in San Bernardino and Clark counties reflect an increasing number of sources of noise due to increased highway traffic, air traffic, construction projects, and expanded development. Approved, pending, and reasonably foreseeable projects would add to the future expected noise levels throughout the geographic area. However, various noise levels will continue to be experienced in the area regardless of projects, depending on the proximity to human activity. Open space and rural communities will remain the quietest.

Ongoing and anticipated development from Colton to Barstow includes residential, commercial, and industrial development as well as highway improvement projects. Large-scale energy development projects are planned for the Ivanpah Valley, specifically EITP, ISEGS, the First Solar Photovoltaic Project, and Silver State (see Table 5-1 and Figure 5-1). This trend will continue for reasonably foreseeable future projects forecasted throughout the project area. The potential for future projects to contribute to cumulative noise impacts would depend on their distance from the noise receptors as well as the potential for overlapping construction schedules. Approved, pending, and reasonably foreseeable future projects identified in this document would not increase the number of noise-sensitive uses in the area.

3.18.13.4 Cumulative Impact Analysis

Proposed Project

The analysis of the Proposed Project in Section 3.13.3 identified the following potential impacts associated with noise:

- Impact NOI-1: Temporary increase in ambient noise and vibration levels during construction
- Impact NOI-2: Increase in ambient noise levels at new project stationary facilities and during ROW operation and maintenance activities
- Impact NOI-3: Exposure to ground-borne vibration

For these potential impacts, the analysis determined that direct, adverse impacts under NEPA could occur as a result of the Proposed Project, and that these impacts could be significant under CEQA. These impacts would occur during construction, and if they occurred, they would be temporary. These impacts would be avoided or reduced through implementation of the following mitigation measures:

- MM NOI-1a: Noise Mitigation Plan
- MM NOI-1b: Notification Prior to Construction
- MM NOI-1c: Noise Complaint Documentation and Resolution
- MM NOI-2. Noise Mitigation and Monitoring Plan

Implementation of these mitigation measures would reduce these impacts to less than significant under CEQA.

Construction activities could last from one week to 30 days at a given location. Because the construction moves through an area relatively quickly, noise impacts would typically be localized, intermittent, and short-term. Construction of the pipeline and aboveground facilities would take approximately 12 to 18 months to complete. Noise generated from construction equipment, drilling, and blasting would all contribute, temporarily, to unwanted noise. Blasting and horizontal directional drilling (HDD) would have noise levels of about 79 and 94 dBA at a distance of 50 feet. In addition, a temporary increase in local traffic noise would occur as a result of construction workers and equipment traveling to and from the sites. Some of this noise would be mitigated through the implementation of MM NOI-1a: Noise Mitigation Plan; however, there would still be residual noise that could contribute to cumulative impacts where there are other existing and foreseeable noise sources in close proximity.

The construction schedule of many of the reasonably foreseeable projects is not known. However, it is likely that Proposed Project's construction schedule would overlap with some of the large scale solar projects in the Ivanpah Valley, such as ISEGS and Silver State. There are few noise receptors in this area, but residences near the Primm Valley Golf Course and in Primm, Nevada could experience the cumulative effects of construction noise from multiple projects. However, since the Proposed Project's construction activities in any one area would be for a maximum of 30-days, the Proposed Project's contribution to the cumulative impact would be minor.

Operational noise from the existing pump stations cannot exceed local noise thresholds. The Proposed Silver Lake Pump Station would be located near Baker, California (MP 146.3). The noise associated with the electrically driven pump stations would be limited to the vicinity of the facilities. The terminals and junctions would be located in areas that currently contain multiple petroleum products pipelines. The noise level associated with project stationary facilities is anticipated to be similar to existing levels and would comply with San Bernardino County noise thresholds. There is a house within 1,300 feet of the facility. There are no known other sensitive noise receptors at this location. To comply with San Bernardino County code, the facility would have to meet a residential noise threshold within 600 feet of the facility. The other primary noise source within 1 mile of this location is I-15. There are no known foreseeable projects in this area. Given that the substation would be more than 0.8 miles from I-15 and the closest residence to the substation is more than 0.65 miles from I-15, this resident should not experience a cumulative noise impact from the two noise sources.

Alternative 2

Overall, Alternative 2 would have a reduced level of noise impacts than the Proposed Project. Because the Proposed Project's contribution to the cumulative impact would be minor, the contribution from Alternative 2 would also be minor. These impacts would be reduced, but not eliminated, through implementation of mitigation measures MM NOI-1a, NOI-1b, and NOI-1c.

Alternative 3

Overall, Alternative 3 would have a reduced level of noise impacts than the Proposed Project. Because the Proposed Project's contribution to the cumulative impact would be minor, the contribution from Alternative 3 would also be minor. These impacts would be reduced, but not eliminated, through implementation of mitigation measures MM NOI-1a, NOI-1b, and NOI-1c.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, the anticipated fuel demand in Las Vegas, Nevada and the California High Desert resulting from population growth and/or tourism would exceed the capacity of the existing Calnev Pipeline System. A portion of the demand could be met in ways identified in a report prepared by a Clark County Blue Ribbon Commission (BRC) to improve reliability of southern Nevada's fuel supply. Two alternative methods of fuel transportation were examined in the BRC report: delivery by rail or truck. The BRC also indicates that either of these options would require construction of new loading/off-loading facilities and/or new rail terminals.

The Proposed Project would increase system capacity up to approximately 44,000 barrels per day. The BRC estimated that 50 truck loads per day would be needed to transport 10,476 barrels per day. The BRC also estimated it would take three trains per week (with 85 cars per train) to transport 29,922 barrels per day. In order to meet the equivalent of the Proposed Project, it is assumed that 210 truck loads per day or four trains per week would be need to transport 44,000 barrels per day.

If future demand were met by an increase in the use of truck and rail traffic, the No Action Alternative could result in increases in noise impacts at loading facilities, along highways and rail systems, and at offloading facilities. These impacts would be direct, adverse impacts that would be permanent. Because they would be a permanent addition to ambient noise levels, these impacts contribute to a cumulatively considerable impact under CEQA. Mitigation of these noise impacts would be outside of the jurisdiction of the agencies involved in the development of this EIS/EIR.

3.18.14 Recreation

3.18.14.1 Geographic Extent and Timeframe

Recreational impacts caused by the Calnev pipeline expansion project would be limited to recreational areas crossed by the proposed project route; the Stoddard Valley OHV Area; Ivanpah Dry Lake; and Jean Lake/Roach Lake SRMA. Potential cumulative impacts would only occur until the construction zone had proceeded past any given recreation area, which would be expected to be less than one month.

3.18.14.2 Past and Present Project Impacts

Eighty percent of the land in San Bernardino County is managed by federal agencies, including the Bureau of Land Management, U.S. Forest Service, and National Park Service. San Bernardino County strives to maintain balance in its land use planning by conserving 14.5 acres of undeveloped land and 2.5 acres of developed regional park land per 1,000 people.

Recreational opportunities in San Bernardino County include hiking, camping, OHV use, fishing, horseback riding, star-gazing, winter sports, youth athletics, performing arts, and other entertainment. Recreation facilities in San Bernardino County are managed by the Regional Parks Department, which maintains nine recreation areas encompassing approximately 9,200 acres for activities including fishing, swimming, camping, hiking, field sports, horseback riding, golf, shooting, OHV activities, and boating (County of San Bernardino 2007).

The Stoddard Valley OHV Area is a 53,000-acre are managed by BLM south of Barstow, CA between I-15 and State Route 247, and is utilized by recreationists riding motorcycles, all-terrain vehicles (ATVs) or four-wheel drive vehicles. The area is used for competitive racing events by permit. Other activities in the Stoddard Valley OHV area include hiking, rock scrambling, and plant, bird and wildlife watching (BLM 2010a).

The Cities of Colton, Bloomington, Rialto, Victorville, and Adelanto maintain parks within their jurisdiction, managed under each city's respective General Plan. City parks provide valuable open space areas otherwise characterized by increasing residential and commercial development.

The expansion of the I-15 corridor and the construction of the Buffalo Bills Hotel and Casino have resulted in beneficial impacts on recreation in the Ivanpah Valley by allowing greater accessibility to the recreational areas.

The Ivanpah Dry Lake is managed by the BLM and is popular for land sailing and kite buggying (PrimmNevada.net 2010b) but is closed to motorized vehicles. Free permits are required to access the site for recreation, and commercial or organized events require special recreation permits (BLM 2010a). The Ivanpah DWMA, an overlay to Ivanpah Dry Lake, is east of the Proposed Project, bounded on the south by the Mojave National Preserve and on the east by the California-Nevada border. Some areas allow camping, but land sailing is not permitted in the southern half of the dry lake, which is primarily used for very low-level, widely dispersed motorized recreational activities (BLM 2002).

The Jean/Roach Dry Lake SRMA provides opportunities for recreation, including motorcycling, OHV and 4 x 4 driving, horseback riding, mountain biking, small-game hunting, and organized racing events (BLM 2007).

The Las Vegas Valley provides a variety of outdoor recreational opportunities, including hiking trails and golf courses, as well as city and community parks throughout the incorporated and unincorporated areas south of Las Vegas, Nevada.

3.18.14.3 Reasonably Foreseeable Future Projects

Reasonably foreseeable projects that might contribute to cumulative impacts to recreation areas are those that might be constructed simultaneously or that would temporarily limit or restrict access to a recreational area sequentially. The following table identifies the reasonably foreseeable projects that could impact recreation areas.

Table 3.18-5 Reasonably Foreseeable Projects that could Impact Recreation Areas

Recreation Area	Cumulative Projects
Ivanpah Dry Lake	First Solar PV Project
	Southern California Edison Eldorado Ivanpah Transmission Line upgrade
	Desert Xpress
	ISEGS
Jean Lake/Roach Lake Special Resource Management Area (SRMA)	Southern California Edison Eldorado Ivanpah Transmission Line upgrade
	Nextlight Silver State Solar Project
	Desert Xpress
	ISEGS

3.18.14.4 Cumulative Impact Analysis

Proposed Project

The analysis of the Proposed Project in Section 3.14.3 identified the following potential impacts associated with recreation:

- Impact REC-1: Disrupt Recreation Activities in Designated Recreation Areas
- Impact REC-2: Increase Access to Previously Undisturbed Areas (Back Country)

For these potential impacts, the analysis determined that direct, adverse impacts under NEPA could occur as a result of the Proposed Project. These impacts would occur during construction, and if they occurred, they would be temporary. These impacts would be avoided or reduced through implementation of the following mitigation measures:

- MM REC-1a: Limit Construction Workspace in Recreation Areas.
- MM REC-1b: Construction Scheduling
- MM REC-1c: Restoration of Ivanpah Dry Lake
- MM REC-1d: Restoration of Jean Lake/Roach Lake Special Recreation Management Area
- MM REC-1e: Reduction of Fugitive Dust
- MM REC-1f: Reroute Existing Trails to Maintain Access
- MM REC-1g: Maintain Access to Recreation Areas
- MM REC-1h: Restoration of Road and Trail Crossings
- MM REC-1i: Restrict Construction Dates at Pacific Crest Trail
- MM REC-2a: Deter OHV Use During Reclamation Activities.
- MM REC-2b: Deter OHV Use After Reclamation Activities

With respect to impact REC-1, the Proposed Project would have temporary impacts on the Stoddard Valley OHV Area by disrupting access patterns, resulting in the use of other access points. The Proposed Project would impact 121 acres of the OHV area during construction. The Proposed Project would also have temporary impacts on recreation resources in the Ivanpah Valley, including Ivanpah Dry Lake and Jean Lake/Roach Lake SRMA, by restricting access to the areas. The Proposed Project would temporarily disrupt 72.73 acres of Ivanpah Dry Lake, and 169.7 acres of Jean Lake/Roach Lake during the three-week construction period.

The First Solar PV Project, the Desert Xpress High-Speed Rail Project, and ISEGS would cross, or be located within or adjacent to Ivanpah Dry Lake. The Eldorado Ivanpah Transmission Line upgrade would cross the southern part of Ivanpah Dry Lake. If the Calnev pipeline expansion project and the First Solar PV Project, the Desert Xpress High-Speed Rail Project, and ISEGS had overlapping construction schedules, there could be a considerable short-term cumulative impact because each would temporarily restrict access to Ivanpah Dry Lake. Based on the assumption that there would be overlapping construction schedules and duration of construction in the area of Ivanpah Dry Lake crossed by the Calnev pipeline expansion project, the project would have a minor short-term contribution or less than significant contribution under CEQA with mitigation to cumulative impacts on recreation in Ivanpah Dry Lake.

The Desert Xpress High-Speed Rail Project, ISEGS, the Eldorado Ivanpah Transmission Line upgrade, the Nextlight Silver State Solar Project, and the Cogentrix solar projects would all cross or be located within the Jean Lake/Roach Lake SRMA. If these projects and the Calnev pipeline expansion project had overlapping construction schedules, there could be a considerable short-term cumulative impact because each would temporarily restrict access to Jean Lake/Roach Lake. Based on the assumption that there would be overlapping construction schedules and duration of construction in the area of Jean Lake/Roach Lake crossed by the Calnev pipeline expansion project, the project would have a minor short-term contribution or less than significant contribution under CEQA with mitigation to cumulative impacts on recreation in the Jean Lake/Roach Lake SRMA.

Impacts associated with Impact REC-2 could contribute to a permanent cumulative impact, if not mitigated. Compliance with mitigation measures MM REC-2a and REC-2b would reduce the potential for the Proposed Project to increase access to previously undisturbed area for unauthorized users.

Alternative 2

Overall, Alternative 2 would have a reduced level of impacts as compared to the Proposed Project. With respect to Impact REC-1, adoption of the Rialto Alternative route would avoid potential access restrictions to Jerry Eaves and Birdsall Parks. Adoption of the Wagon Train HDD and Baker Alternative routes would reduce the potential for increasing access to undeveloped areas for unauthorized users. Adoption of the Sunset Lateral Alternative route could potentially interfere with access to the All American Sports Park. This impact, although direct and adverse, would be temporary, and would be mitigated through mitigation measures MM REC-1a, REC-1b, REC-1e, REC-1f, REC-1h, and REC-1i.

Impacts associated with Impact REC-2 could contribute to a permanent cumulative impact, if not mitigated. Compliance with mitigation measures MM REC-2a and REC-2b would reduce the potential for Alternative 2 to increase access to previously undisturbed area for unauthorized users. There would be no difference between the Proposed Project and Alternative 2 with respect to Impact REC-2.

Alternative 3

Overall, Alternative 3 would have a reduced level of impacts as compared to the Proposed Project. With respect to Impact REC-1, adoption of the Rialto Alternative route would avoid potential access restrictions to Jerry Eaves and Birdsall Parks. Adoption of the Wagon Train HDD would reduce the potential for increasing access to undeveloped areas for unauthorized users. Adoption of the Sunset Lateral Alternative route could potentially interfere with access to the All American Sports Park. This impact, although direct and adverse, would be temporary, and would be mitigated through mitigation measures MM REC-1a, REC-1b, REC-1e, REC-1f, REC-1h, and REC-1i.

Impacts associated with Impact REC-2 could contribute to a permanent cumulative impact, if not mitigated. Because Alternative 3 would not adopt the Baker Alternative route, project activities in this area could increase the potential for access to undisturbed areas. Compliance with mitigation measures MM REC-2a and REC-2b would reduce the potential for Alternative 3 to increase access to previously undisturbed area for unauthorized users.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, the existing projects within the region, including the existing Calnev 8-inch and 14-inch pipelines, would continue to have the same potential for impacts to recreation as they do now. Ultimately, fuel delivery capacity associated with the current delivery systems would be reached, and future demand could be met by increased truck and/or rail deliveries. These activities would likely require construction of loading and unloading areas in undetermined locations. However, placement of these facilities within recreation areas, or in areas that could impact recreation, is unlikely. Therefore, the No Action Alternative would not have any impacts to recreation.

3.18.15 Social and Economic Conditions

3.18.15.1 Geographic and Temporal Extent

For the purposes of this analysis, the geographic and temporal extent includes all projects identified on Table 3.18-1 and Figure 3.18-1.

3.18.15.2 Past and Present Project Impacts / Existing Cumulative Conditions

Table 3.18-1 identifies past and present cumulative impact conditions that could affect socioeconomic resources.

3.18.15.3 Reasonably Foreseeable Future Projects

Figure 3.18-1 identifies future projects that could cumulatively affect socioeconomic resources.

3.18.15.4 Cumulative Impact Analysis

Proposed Project

The analysis of the Proposed Project in Section 3.15.3 did not identify any adverse impacts to socioeconomics or environmental justice.

Construction of the Proposed Project would have a moderate beneficial short-term impact on the region's economy. As noted in Section 3.15, the estimated labor expenditures would be about $120 million with $60 million expected to be local. Non-pipe materials and consumables expenditures are estimated to be $20 million with $16 million in local spending. Pipe costs are estimated at $60 million and these expenditures have the potential to be procured from within the region. Pipe procurement would depend on which pipe manufacturer was selected. Potentially, up to $136 million in construction spending could be directly channeled into the region. The indirect and induced impacts to the regional economy could be an additional $41 million and $69 million, respectively. The total impact to the regional economy would be about $246 million.

Temporary increases in labor would contribute up to 650 jobs for the region, with up to 293 being jobs for the local labor pool. This would place a demand on temporary housing in the region, which may a sizeable, short-term impact on some rural communities.

The Proposed Project would add about $1.6 million in ad valorem taxes to local governments, not including franchise fees.

Overall, these increases in economic activity, labor and taxes receipts would provide a socioeconomic benefit to the local and regional economies. Other activities identified in Table 3.18-1 would to a greater or lesser degree contribute positive impacts to local and regional economies.

Adverse cumulative impacts would be confined to an overheating of local economies, straining local services, increasing adverse social conditions or placing a burden on housing. Given that the work force for the Proposed Project (650 persons maximum) would be relatively small in comparison to the overall labor pool (934,000 total, with 84,000 currently unemployed) for San Bernardino, California and Clark County, Nevada, it is unlikely that there would a measurable impact on the work force. Similarly, the need for temporary housing would be very small even if all of the reasonably future projects were to occur concurrently with the Proposed Project.

Alternative 2

Like the Proposed Project, Alternative 2 would not have adverse impacts to socioeconomics and environmental justice. Although the costs of the two alternatives would vary slightly, this difference would not substantially change the level of any adverse or beneficial impacts associated with the Proposed Project. Therefore, Alternative 2 would not contribute to adverse cumulative impacts associated with socioeconomics.

Alternative 3

Like the Proposed Project, Alternative 3 would not have adverse impacts to socioeconomics and environmental justice. Although the costs of the two alternatives would vary slightly, this difference would not substantially change the level of any adverse or beneficial impacts associated with the Proposed Project. Therefore, Alternative 3 would not contribute to adverse cumulative impacts associated with socioeconomics.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, delivery of refined petroleum products via the proposed pipeline would not occur. Impacts associated with meeting potential fuel demand via rail or truck delivery or some combination of substitute transport modes would arise. To meet projected demand, combined rail and truck options or an alternative pipeline route, largely outside of existing utility ROWs, might be necessary. Alternate delivery options would be somewhat more expensive and require additional support infrastructure and equipment (i.e., fleets of trucks, rail cars, and terminals)

The alternative fuel-delivery options would not be consistent with some of the growth management goals articulated by SCAG (Table 3.15-16). In particular, delivery options would not be consistent with SCAG Policy Number 3.05, "Encourage patterns of urban development and land use that reduce costs on infrastructure construction and make better use of existing facilities." Rail and truck options sufficient to move the incremental 44,000 barrels per day into Clark County would not be consistent with this policy. The Clark County Blue Ribbon Commission demonstrated that these options would only meet a portion of incremental forecasted demand (2006). The scale up of alternative fuel-delivery options required to meet forecasted demands would involve larger fleets of unit trains or trucks and impose greater costs (e.g., lifecycle capital and operational and maintenance costs) on existing rail and road networks. The Proposed Project would avoid these costs and be consistent with SCAG Policy Number 3.05. The Proposed Project would also parallel or operate mostly within existing ROWs and thereby reduce construction costs.

Additionally, the transport of bulk liquids via pipeline is generally accepted to be more efficient than via unit trains or trucks. Heavy commodities such as coal, grains, and bulk industrial materials can be moved at a lower cost via rail. However, when pipelines and existing ROWs can be used to move bulk liquids, less demand is placed on competing modes of bulk transport. The rail alternative for petroleum products, under the No Action Alternative, would compete with other bulk commodity movements (within the Inland Empire moving into Clark County) via the Union Pacific rail corridor. Truck options would impose additional lifecycle costs on existing road networks (i.e., increased highway and road segment wear and tear and maintenance, increased energy consumption, and increased emissions from truck fleets.

The No Action Alternative would also not be consistent with SCAG Policy 3.09, "Support local jurisdiction efforts to minimize the cost of infrastructure and public service delivery and efforts to seek new sources of funding for development and the provision of services." Delivery of the incremental volume of petroleum products using a fleet of trucks or unit cars would increase congestion on an already congested regional road and rail network. Levels of congestion are projected to increase during the next 25 years (USDOT FHA 2008, Freight and Congestion Chapter).

The No Action Alternative would not be expected to have any impact on local population levels. An increase in truck and rail traffic is unlikely to lead to substantial in-migration to the region. Impacts to housing would likewise be unaffected as no change in the area's population is anticipated.

Under the No Action Alternative, local government services may be impacted as the additional truck and rail traffic would stress existing infrastructure. Additional road and rail capacity may need to be added to maintain the current service level. The provision of emergency services may also be affected as the increase in truck and rail traffic could potentially lead to more emergency situations.

Environmental justice issues could become an issue under the No Action alternative. Typically roads and rail corridors are located in minority and lower income communities. Any expansion of the infrastructure could impact sensitive groups.

Finally, fiscal impacts to local governments could occur under the No Action alternative. As described above, additional infrastructure improvements may increase the need for infrastructure improvements and may increase the demand for certain community services. In addition, the No Action alternative is unlikely to generate additional revenues as there is unlikely to be an increase in the local tax base or in ad valorem tax receipts.

3.18.16 Transportation and Traffic

3.18.16.1 Geographic Extent and Timeframe

Traffic impacts of the Proposed Project would include local roads and regional freeways that comprise the transportation network during construction. The geographic scope of projects that could contribute to transportation impacts would include any projects which could increase traffic levels on the same roads as the Proposed Project, and would otherwise affect access to those roads. The timeframe for this cumulative analysis is the construction period because the impact evaluation in Section 3.16, "Traffic and Transportation," determined that there were no impacts to ground traffic and transportation during operations.

3.18.16.2 Past and Present Project Impacts/Existing Cumulative Conditions

As discussed in Section 3.16.1 Affected Environment, the pipeline ROW primarily traverses undeveloped lands administered by the BLM in San Bernardino County, California and Clark County, Nevada as well as other federally managed lands and lands under the jurisdiction of the State of California, the State of Nevada, San Bernardino County, and Clark County. It also crosses through the Cities of Colton, Rialto, Victorville, Adelanto, and Barstow in California and Henderson and Las Vegas in Nevada.

Table 3.16-1 provides the locations where the pipeline ROW traverses intersections and major transportation routes. Major transportation routes crosses Interstate highways I-10, I-210, I-40, I-15 and I-215 and State Routes 138, 395, 18, 604, and 160. Table 3.16-2 provides the traffic volumes for the locations where the pipeline would cross major transportation routes.

These projects have resulted in the current conditions. I-15 experiences an increase in traffic volume on northbound on Fridays and southbound on Sundays from Victorville to the Stateline that results in a decreased level of service or the inability for drivers to drive the speed limit. There are two areas of known congestion 1) at State Line where southbound I-15 decreases from three lanes in Nevada to two lanes in California; and second, at the Agricultural Inspection Station in Yermo where traffic is routinely slowed or stopped.

3.18.16.3 Reasonably Foreseeable Future Projects

Residential, commercial, and industrial development is expected in the Cities of Colton, San Bernardino, Victorville, Adelanto, and Barstow as well as in the unincorporated portion of San Bernardino County. Some of these projects include the proposed Enertech Regional Biosolids Processing in Rialto combined with the expansion of the City of Rialto's wastewater treatment plan, the Rialto Commerce Center, and a 125- acre Federal Express Building in the City of San Bernardino. Municipalities plan to upgrade or replace portions of their water systems or expand their landfills. Specifically, the Barstow Landfill is proposed to be expanded by 284 acres.

Both small and large road and highway projects are planned. The largest proposed highway project is the High Desert Corridor, a 19-mile 6-lane highway that would eventually link Victor and Antelope valleys.

Ongoing and foreseeable development throughout the cumulative impact area for traffic and transportation is dominated by proposed renewable energy projects. Renewable energy development is expected in cities of Adelanto and Barstow and in the Ivanpah Valley. The renewable projects that have the potential to affect traffic because of their proximity I-15 and their potentially overlapping construction schedules would be ISEGS, FirstSolar, and Nextlight Silver State. Other projects in the Ivanpah Valley in the vicinity of I-15 include the SNSA, the EITP project, and the DesertXpress High-Speed Rail.

The projected construction schedule of many of the residential, commercial, and industrial projects is not currently known. The projected construction schedule for the DesertXpress was between 2010 and 2012; however, the environmental documentation has not been completed. ISEGS is projected to be built between 2010 and 2013, while NextLight Silver State Solar Project is projected to be built from 2011 to 2014. The EITP would begin construction in 2011 and be completed during 2013.These projects are considered in this analysis (see Table 3.18-5).

3.18.16.4 Cumulative Impact Analysis

Proposed Project

The analysis of the Proposed Project in Section 3.16.3 identified the following potential impacts associated with traffic and transportation:

- Impact TRAN-1: Increase traffic or roadway hazards.
- Impact TRAN-2: Result in inadequate parking capacity
- Impact TRAN-3: Degrade the existing roadway conditions as a result of construction

For these potential impacts, the analysis determined that direct, adverse impacts under NEPA could occur as a result of the Proposed Project. In addition, Impact TRAN-1 could be significant under CEQA. The duration of these impacts would be temporary for Impact TRAN-1 and TRAN-2, but could be permanent for Impact TRAN-3 if the impact is not mitigated. These impacts would be avoided or reduced through implementation of the following mitigation measures:

- MM TRAN-1: Traffic Management Plan
- MM TRAN-3: Restoration of Roads

This section discusses the combined effects on traffic load, capacity, and level of service (LOS) standards of the Proposed Project and past, present, and reasonably foreseeable projects. The relevant impact is IMPACT TRANS-1: Increase traffic or roadway hazards.

The cumulative impact of increased traffic due to reasonably foreseeable projects in conjunction with the Proposed Project and the existing traffic would be most pronounced at those areas with heavy traffic. As discussed above, there is a marked increase in traffic on Friday and Sunday afternoons/evenings on I-15 because of motorists traveling to and from Los Angeles and Las Vegas. Locations where traffic increases, in particular, are I-15 southbound on Sundays at the stateline and at the Yermo agricultural station. Concurrent construction of the Proposed Project and any other large scale project could further increase traffic congestion for these time periods. There may be other locations where there is increased traffic at these times, but there are few traffic monitors from which to gather data.

The Proposed Project, EITP, ISEGS, the First Solar Project, the NextLight Silver State Solar Project, and the DesertXpress High-Speed Rail Project would be located near the I-15 corridor near the state line. It is likely that during certain periods, construction of these projects could have overlapping schedules (see Table 5-3). As would the Proposed Project, the large construction projects would have to obtain encroachment permits to minimize impacts to I-15. ISEGS would implement a Traffic Control Plan that contains a Traffic Management Plan; however, it could not be determined if the DesertXpress would have a comparable plan. First Solar and Silver State would likely also implement Traffic Management Plans.

With concurrent construction of the projects mentioned above, the number of vehicles using I-15 would increase and would adversely impact traffic load and LOS on I-15 principally on Fridays from noon to 10 p.m. and Sundays afternoon and evenings. However, the exact number of vehicles to be added cannot be determined with the available information. The Proposed Project would contribute vehicles to the traffic in these area for a limited period of time and would minimize impacts through use of a Traffic Management Plan; therefore, the contribution of the Proposed Project's impact on traffic and transportation would be minor. However, the Proposed Project could contribute incrementally to a cumulatively considerable impact. The following mitigation would reduce that impact.

MM-C-TRANS-1: I-15 Use Limits. MM-C-TRANS-1 will require the applicant to limit the use of I-15 on Fridays from noon to 10 p.m. and on Sunday afternoons and evenings. This will require using alternative routes or planning sufficiently such that vehicular use of I-15 would be limited to fewer than 15 vehicles every 15 minutes, resulting in a minor, short-term cumulative impact. Implementation of this mitigation measure would reduce the Proposed Project's incremental contribution to less than significant under CEQA, or minor.

Alternative 2

Overall, Alternative 2 would have greater impacts to traffic and transportation than the Proposed Project. The overall project length is 3.6 miles longer than the Proposed Project length, and much of this increase (2.7 miles in Rialto, 0.8 miles at Phelan Road/Baldy Mesa, and 1.4 miles at Sunset) would occur along heavily trafficked urban or residential roads. The selection of the Wagon Train Road HDD Alternative route would increase traffic impacts on a public street in that area, and the Baker Alternative route would eliminate construction in an undeveloped area in favor of construction directly through the town of Baker. Also, the Sunset Lateral Alternative, in addition to increasing the overall length of the pipeline in an urban area, would require construction along one mile of Las Vegas Boulevard, a major traffic route within Las Vegas.

Because the incremental effect of Alternative 2 would likely be larger than that of the Proposed Project, Alternative 2 could contribute incrementally to a cumulatively considerable impact. Therefore, mitigation through implementation of MM-C-TRANS-1 would be necessary. In addition, impacts would be reduced through the implementation of MM TRAN-1, and roadways would be restored, as required in MM TRAN-3.

Alternative 3

Overall, Alternative 3 would have greater impacts to traffic and transportation than the Proposed Project. The overall project length is 4.1 miles longer than the Proposed Project length, and much of this increase (2.7 miles in Rialto, and 1.4 miles at Sunset) would occur along heavily trafficked urban or residential roads. The selection of the Wagon Train Road HDD Alternative route would increase traffic impacts on a public street in that area. Alternative 3 would not adopt the greater level of traffic impacts within the town of Baker associated with the Baker Alternative, and would not adopt the increased impacts associated with the Phelan Road/Baldy Mesa Alternative route.

Because the incremental effect of Alternative 3 would likely be larger than that of the Proposed Project, Alternative 3 could contribute incrementally to a cumulatively considerable impact. Therefore, mitigation through implementation of MM-C-TRANS-1 would be necessary. In addition, impacts would be reduced through the implementation of MM TRAN-1, and roadways would be restored, as required in MM TRAN-3.

Water Source Alternative

As discussed in Section 3.16.3, the number of water truck miles on Interstate 15 and the number of trips at the Mojave Water Agency and Las Vegas Valley Water District would increase substantially if the Applicant accessed 100 percent of their project water from the West Valley Water District, Mojave Water Agency, and Las Vegas Valley Water District. Overall, total water truck miles would increase from 229,000 in the Proposed Project to 644,689 miles in the alternative water supply scenario, an increase of 180 percent in total truck miles. Almost all of this mileage increase would occur on Interstate 15. At the Mojave Water Agency location, the number of truck trips would increase from an average of 55 to 61 trips per day. At the Las Vegas Valley Water District, the number of truck trips would increase from 39 to 59 trips per day.

This increase in the number of miles and number of trips would contribute incrementally to the existing cumulatively considerable impact on Interstate 15 on Fridays from noon to 10 p.m. and Sundays afternoon and evenings. Therefore, mitigation as required by MM-C-TRANS-1 would be necessary. This mitigation measure would require the applicant to limit the use of I-15 on Fridays from noon to 10 p.m. and on Sundays afternoons and evenings.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, the anticipated fuel demand in Las Vegas, Nevada and the California high desert resulting from population growth and/or tourism would exceed the capacity of the existing Calnev Pipeline System. A portion of the demand could be met in ways identified in a report prepared by a Clark County BRC to improve reliability of southern Nevada's fuel supply. Two alternative methods of fuel transportation were examined in the BRC report: delivery by rail or truck. The BRC also indicates that either of these options would require construction of new loading/off-loading facilities and/or new rail terminals.

The Proposed Project would increase system capacity up to approximately 44,000 barrels per day. The BRC estimated that 50 truck loads per day would be needed to transport 10,476 barrels per day. The BRC also estimated it would take three trains per week (with 85 cars per train) to transport 29,922 barrels per day. In order to meet the equivalent of the Proposed Project, it is possible that 210 truck loads per day or four trains per week would be need to transport 44,000 barrels per day.

If increased truck and rail deliveries are sued to meet demand, this increase could result in increases in traffic levels at loading facilities, along highways and rail systems, and at offloading facilities. The contribution of this increase would be minor, but would be higher than that associated with the Proposed Project or Alternatives 2 or 3. In addition, the impacts would be permanent. This increase could contribute incrementally to a cumulatively considerable impact. However, mitigation of these traffic impacts would be outside of the jurisdiction of the agencies involved in the development of this EIS/EIR.

3.18.17 Public Safety/Hazardous Materials

3.18.17.1 Geographic Extent and Timeframe

Impacts resulting from hazards and hazardous materials would be limited to the Proposed Project site and directly adjacent land because impacts would likely result from incidents associated with hazardous materials during construction and maintenance activities. In addition, accidents could occur. Therefore, the geographic extent for the analysis of cumulative impacts related to public safety and potential environmental contamination is limited to the immediate vicinity surrounding the Proposed Project pipeline, substations, terminals, valves, and construction and staging area. These cumulative impacts with respect to hazardous materials could occur during construction and operation and would be limited to the areas of concurrent construction or maintenance. Incidents could occur during the 18-month construction period or during operations. Therefore, the timeframe for the cumulative impact analysis with respect to hazardous materials will extend from construction to the operational lifetime of the pipeline.

The geographic extent of the cumulative impacts analysis with respect to fire hazards follows the Proposed Project ROW because all construction and operation would take place within the ROW in the County of San Bernardino, California, and Clark County, Nevada. The timeframe for this cumulative impacts analysis with respect to fire hazards also extends from the construction period to the end of the operational lifetime of the pipeline.

3.18.17.2 Past and Present Project Impacts/Existing Cumulative Conditions

<u>**Hazardous Materials and Wastes**</u>

There are 51 Hazardous Waste and Substances Sites (Cortese) List sites in San Bernardino County. These are discussed in 3.17.1.1 Hazardous Wastes/Contaminated Soil and Groundwater and listed in Appendix B. Some of the larger contaminated sites that are within 1 mile of the Proposed Project ROW include the Marine Corps Logistics Base (MCLB) in Barstow, California, D&M Drum Company in Rialto, and the Molycorp Mine facility (California Department of Toxic Substances Control [CADTSC] 2009).

The MCLB is near but not crossed by the Proposed Project ROW between MP 83 and 91 (Figure 2-8). The MCLB has 38 contaminated sites. The base has landfills and surface impoundments. Spills and burning have occurred on-site and surface soils are contaminated. Volatile organic compounds including trichloroethylene have been detected in the groundwater at MCLB. Contaminants in soils include heavy metals, organic compounds, polychlorinated biphenyls, and trichloroethylene which can migrate to groundwater.

D&M Drum Company is located at 137 Lilac Avenue in Rialto, approximately 0.25 miles from the Proposed Project route between MP 5 and 6. D&M Drum Company recycled drums from 1980 to 1989. A remedial investigation will be conducted for soil contamination at this site (CADTSC 2009).

The Molycorp Mine was originally opened in the early 1950s near the town of Mountain Pass, California, and is an active lanthanide mining and milling operation. According to Envirostor, the Molycorp Mountain Pass Facility currently has a non-operating hazardous waste facility (CADTSC 2010). There is also groundwater contamination associated with the on-site evaporation pond (Cass 2010). The Molycorp wastewater pipeline which extended from the facility to the valley floor had a history of contamination. From the 1980s to 1990s, numerous large spills occurred due to ruptures and leaks along the pipeline route. A cleanup occurred in 1998. More than half of the wastes were radioactive. The wastewater pipeline discharged to two different sets evaporation ponds and contamination occurred at the pond sites.

Currently, Chevron Corporation owns the wastewater discharge pipeline and the evaporation ponds. Molycorp Minerals LLC owns and operates the mine. Chevron is in the process of removing the pipeline and removing residual contamination associated with the pipeline. It is also monitoring the groundwater at the evaporation ponds. Molycorp Minerals LLC is currently operating the mine but is not mining. It is processing stockpiled materials (Hunter 2010). Multiple other reasonably foreseeable projects would also be traversing or would be near to the Molycorp facility.

Most of the route is undeveloped open space. Within the undeveloped and open space land and residential areas there is little likelihood of soil or groundwater contamination, based on a lack of uses that would involve hazardous materials.

<u>Fire Hazards</u>

The Proposed Project pipeline would cross desert scrub, riparian woodland, and urban environments, each of which has an associated fire risk. Fire is natural part of the maintenance of some ecosystems; therefore, fires can be common in these areas. The highest fire hazard is between MPs 10 and 28, followed by the area between MPs 8 and 10 and the area between MPs 28 and 33. There is a moderate fire hazard between MP 33 and the Nevada border (Appendix B). These communities of Primm, Sloan, Arden, and Las Vegas in Nevada were assessed as being low hazard communities with low ignition risks. The areas between these communities were not assessed with respect to fire hazards (Resource Concepts, Inc. 2005).

3.18.17.3 Reasonably Foreseeable Future Projects

Reasonably foreseeable future projects identified for this analysis include Ivanpah SEGS, EITP, and Silver State Solar, and there is the potential for overlapping construction schedules (Table 3.18-3). Construction of these projects would require the use of fuels and hazardous materials. They would also use equipment that could act as an ignition source.

The analysis considers the location of known soil or groundwater contamination. Sites with known environmental contamination would be legally required to be investigated and remediated in accordance with regulatory agency standards prior to redevelopment. Although localized areas of soil contamination could be encountered by some of these projects, many are new developments in open areas where there has been no historical industrial use. Areas with previously unknown contamination will likely be discovered during planning, followed by the required reporting and cleanup.

3.18.17.4 Cumulative Impact Analysis

Proposed Project

The analysis of the Proposed Project in Section 3.17.3 identified the following potential impacts associated with public safety and hazardous materials:

- Impact Hazardous (HAZ)-2: Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Impact HAZ-3: Construction or operation of the pipeline would result in the exposure of the public or environment to existing contamination
- Impact HAZ-5: Increase the potential for wildland fires and risk of loss, injury, or death involving fires.

For these potential impacts, the analysis determined that direct, adverse impacts under NEPA could occur as a result of the Proposed Project, and these impacts could be significant under CEQA. The duration of these impacts would range from short-term to long-term, depending on the scope of any incident that involved release of hazardous materials. These impacts would be avoided or reduced through implementation of the following mitigation measures:

- MM HAZ-2a: Hazardous Materials Business Emergency/Contingency Plan
- MM HAZ-2b: Spill Prevention and Response Plans.
- MM HAZ-2c: Avoid placement of pipeline with 1,500 feet of school proposed in Renaissance Plan
- MM HAZ-3a: Additional Investigation of Known Contaminated Sites in the Pipeline ROW
- MM HAZ-3b: Contaminated Soil/Groundwater Contingency Plan
- MM HAZ-3c: Contaminated Site Surveys
- MM HAZ-5a: Fire Prevention Measures
- MM HAZ-5b: Blasting Fire Prevention Measures

Implementation of these mitigation measures would reduce these impacts to less than significant under CEQA.

The potential for public safety/hazardous materials impacts of the Proposed Project to combine with the effects of other projects within the cumulative impact area is described below.

Hazardous Materials, Spills, and Potential Exposures

This section discusses the combined effects on hazards and hazardous materials of the Proposed Project and past, present, and reasonably foreseeable future projects. As discussed above, potential cumulative effects of hazardous materials spills and potential exposures could only occur in the immediate vicinity of the Proposed Project area. Construction and operational activities associated with the Proposed Project could result in releases of hazardous materials in localized areas of the pipeline, terminals, and substations. However, all hazardous materials that would be used during construction or operations have to be containerized, handled, transported, and disposed of according to state and Federal regulations. The Applicant, or its contractor, would be required to maintain hazardous materials in proper storage containers and with sufficient secondary containment in accordance with Federal and State regulations. The applicant would be required to implement a Stormwater Pollution Prevention Plan (SWPPP) during construction and a Spill Prevention, Control, and Countermeasure (SPCC) plan during operations at substations. Typically spills occur during refueling, which typically takes place at construction yards. The Applicant would implement programs and measures to reduce the potential for a spill and to address ones that occur. These include MM HAZ-2a: Hazardous

Materials Business Emergency/Contingency Plan for construction and operations would contain emergency release response procedures. MM WR-1a, Hazardous Material Storage and Usage, and MM WR-1b, Management of Staging Areas to prevent the release of hazardous materials/wastes would minimize the chances of a release of hazardous materials/wastes. The measures described above would reduce the potential for spills of hazardous materials and ensure cleanup measures would be implemented if a spill occurred during construction and most operational situations.

Reasonably foreseeable future projects that would be crossed by the Proposed Project and could have concurrent construction schedules include Ivanpah SEGS, EITP, and Silver State Solar Project. These projects would implement measures to remediate spills as well as a SWPPP and SPCC Plan to prevent and address spills. However, other projects could commercial, residential, industrial, or highway projects could have concurrent construction schedules. Most projects would have to implement an SWPPP; therefore, they would have to implement spill prevention and control measures. Therefore, they would be unlikely employ measures to prevent and address spills. Therefore, it is unlikely that there would an incident where multiple projects would have a hazardous materials release in close proximity to each other such that could be cumulative effects. Any release of hazardous materials would have to be remediated according to state and federal regulations.

As discussed in Section 3.17: Public Safety/Hazardous Materials, contaminated soils or water could be encountered during construction of the Proposed Project route crosses multiple areas where contaminated soil or groundwater could be encountered. The applicant would conduct a more detailed investigation of known contaminated sites in the Pipeline ROW (MM HAZ-3a) before construction begins in order to avoid areas of potential contamination. Given that much of the Proposed Project would be installed in the existing Calnev pipeline ROW, some unearthed soil could be contaminated with petroleum products. Cumulative impacts could occur if multiple projects would be unearthing and exposing contamination in close proximity to each other. The Proposed Project would cross the EITP and Silver State construction corridors at discrete locations, although the potential for concurrent construction is unlikely. In case residual soil or groundwater contamination were found along the Proposed Project route, the applicant would implement a Contaminated Soil/Groundwater Contingency Plan (MM HAZ-3b) to guide the characterization and cleanup of contaminated the soils according to applicable regulations. Both EITP and Silver State have similar mitigation measures. In addition, in areas where the alignments diverged from existing ROWs, the Applicant would conduct additional surveys to identify potential areas of soil or groundwater contamination (MM HAZ-3c). Because any soil or groundwater contamination encountered would be removed and/or remediated prior to construction, impacts of the Proposed Project would not combine with impacts of other projects, and there would not be a considerable cumulative effect.

As discussed in Section 3.17, accidents associated with the operation of petroleum liquids pipelines are the potential release of petroleum products, fires, and explosions as well as potential contamination of soil, surface water, and/or groundwater. The Applicant is required to certify that the pipelines and aboveground facilities associated with the Proposed Project would be designed, constructed, operated, and maintained in accordance with or exceeding the DOT minimum federal safety standards contained in 49 CFR Part 195 – Transportation of hazardous liquids by pipeline. These regulations are intended to protect the public and prevent hazardous liquids pipeline facility accidents and failures. The Applicant has an Integrated Contingency Plan to address spill prevention, response, and cleanup for the existing Calnev Pipeline System in this area and it would have to be updated to evaluate the risks, worst case scenarios, response actions, etc., associated with the addition of the 16-inch pipeline. They also have an Emergency Plan that specifies measures to be taken in emergency scenarios.

The potential for cumulative effects as a result of accidental conditions from the Proposed Project would most likely occur in close proximity of the Proposed Project. As a result, the existing Calnev Pipeline would be a potential contributor to cumulative impact. If there was an accident on either the existing or the Proposed Project pipeline, such as a leak or a rupture, there would be direct effects resulting from the release. However, unless there was an explosion or fire, there would not necessarily be any contribution from the other pipeline. Explosion or fire conditions are discussed below. Therefore, there would not be cumulative considerable impacts from most accidents.

Fire Hazards

This section discusses the combined effects on fire hazards of the Proposed Project and past, present, and reasonably foreseeable projects. The relevant impact of the Proposed Project is Impact HAZ-5: Increase the potential for wildland fires and risk of loss, injury, or death involving fires. Wildfire risks of construction and operations are associated with combustion of native materials due to smoking, refueling, sparks from welding, and operating vehicles and other equipment off roadways. Brushing for vegetation control and removal during construction could result in fire. Welding and blasting also pose wildfire risks. These risks would be associated with construction of the Proposed Project and large foreseeable projects. The applicant would implement Fire Prevention Measures (MM HAZ-5a) that would establish standards and practices to minimize the risk of fire danger, and, in case of fire, provide for immediate suppression and notification. In addition, the Applicant or their contractor would implement Blasting Fire Prevention measures (MM HAZ-5b)

Climatic conditions as well as past and present projects have contributed to the existing fire hazard conditions. Installation of a pipeline through areas in California with fire hazards ranging from moderate to very high fire hazard (MP 8 to MP 34) severity zones represents a potentially moderate or major impact of short- or long-term duration. In Nevada, the fire risk outside of Primm is not known, although the city of Primm has a low fire risk. Concurrent construction of the foreseeable construction in California, such as the Federal Express building, the Cajon Valley Transmission Main Replacement could increase the fire risks. However, each project would likely implement its own fire management program to reduce the potential risk of fires. Therefore, there would not be a considerable cumulative impact.

During operations, the Applicant would have fire fighting and other emergency equipment at the pump stations, including carbon dioxide and/or Halon fire extinguishers, dry powder fire extinguishers, and fire suppressant foaming agents. Emergency call lists would be posted at all stations, in case of accident, fire, or explosion. However, pipeline accidents could occur and if there were a fire source could result in wildland fires if the accidents occurred in areas with moderate to very high fire hazards. Given that the Proposed Project would be near or in the same pipeline corridor ROW as the existing Calnev pipeline, an explosion or fire that occurred along the existing pipeline or the new pipeline could result in damage to the other pipelines and potential wildland fires; therefore, cumulatively considerable impacts could occur.

Alternative 2

Both the Proposed Project and Alternative 2 could have potential impacts to public safety and hazardous materials. Some of the route variations associated with Alternative 2, including the Rialto Alternative, Phelan Road/Baldy Mesa Alternative, Silver Lake Pump Station Alternative, and Sunset Lateral Alternative would result in a reduction of potential risks by locating the pipeline further away from persons or environmental resources that could be affected by a release of hazardous materials. Other variations, including the Rialto Alternative, Phelan Road/Baldy Mesa Alternative, Baker Alternative, and Sunset Lateral Alternative could present a slight increase in the probability of a release by adding 90 degree angles to the pipeline route, or by placing the pipeline within an area where damage is more likely. Finally, some variations would present similar risks to the Proposed Project either because risks on both the Proposed and Alternative segments are very low (Bloomington and Zzyzx Alternatives), or because both segments have an associated risk (Wagon Train HDD Alternative).

Like the Proposed Project, there would not be cumulative considerable impacts from most accidents. The potential for accidents would be slightly increased at some locations under Alternative 2, and slightly decreased at other locations.

Alternative 3

Both the Proposed Project and Alternative 3 could have potential impacts to public safety and hazardous materials. Like the Proposed Project, there would not be cumulative considerable impacts from most accidents. The potential for accidents would be slightly increased at some locations under Alternative 3, and slightly decreased at other locations.

No Action Alternative (NEPA)/No Project Alternative (CEQA)

Under the No Action Alternative, the anticipated fuel demand in Las Vegas, Nevada and the California high desert resulting from population growth and/or tourism would exceed the capacity of the existing Calnev Pipeline System. A portion of the demand could be met in ways identified in a report prepared by a Clark County BRC to improve reliability of southern Nevada's fuel supply. Two alternative methods of fuel transportation were examined in the BRC report: delivery by rail or truck. The BRC also indicates that either of these options would require construction of new loading/off-loading facilities and/or new rail terminals.

The Proposed Project would increase system capacity up to approximately 44,000 barrels per day. The BRC estimated that 50 truck loads per day would be needed to transport 10,476 barrels per day. The BRC also estimated it would take three trains per week (with 85 cars per train) to transport 29,922 barrels per day. In order to meet the equivalent of the Proposed Project, it is assumed that 210 truck loads per day or four trains per week would be need to transport 44,000 barrels per day.

If the future demand were to be met by an increase in truck or rail deliveries, the No Action Alternative could result in increasing the potential for accident or upset conditions. The potential for accidents would be greater under the No Action Alternative than it would be for the Proposed Project. Available data suggests that transport of petroleum products via highway has the potential for more potential accidents than via pipelines. Transport via rail may reduce the potential for accidents. However, accidents of varying magnitude occur on all mechanisms of travel. Accidents involving the potential release of petroleum products have the potential for major long-term impacts under NEPA and significant impact that would remain significant after mitigation under CEQA. Mitigation of these impacts would be outside of the jurisdiction of the agencies involved in the development of this EIS/EIR.

References

Bennecke, J. 2010. Personal communication Jason Bennecke (Joint Point of Entry Project Manager) to Travis Whitney. August 25.

Bureau of Land Management (BLM). 2002. Final Environmental Impact Statement – Final California Desert Conservation Area Plan Amendments for the Northern and Eastern Mojave Planning Area. BLM/CA/ES/2002/004+1790-1600. July.

Bureau of Land Management (BLM). 2007. Las Vegas Field Office Environmental Assessment NV-05302006-472, 43 CFR 3600 Mineral Material Sale N-82282, N-83570, N-83573, N-83574. June.

Bureau of Land Management (BLM). 2010a. California Desert Conservation Area Plan Amendment/Final Environmental Impact Statement for Ivanpah Solar Electric Generating Station FEIS-10-31. July.

Bureau of Land Management (BLM). 2010b. Silver State Solar Energy Project. Record of Decision. N-85077, N-85801. September.

California Department of Toxic Substances Control (CADTSC). 2009. D&M Drum (36500010). EnviroStor database. http://www.envirostor.dtsc.ca.gov/public/. Accessed December 7, 2010.

California Department of Toxic Substances Control (CADTSC). 2010. Chevron Mining Inc (80001637). EnviroStor database. http://www.envirostor.dtsc.ca.gov/public/. Accessed December 7, 2010.

California Department of Fish and Game (CDFG). 2008. California Natural Diversity Data Base *Special Animals List*. Sacramento, CA.

California Energy Commission (CEC). 2010a. Ivanpah Solar Electric Generating Station – Presiding Member's Proposed Decision. CEC-800-2010-004 PMPD. Docket Number 07-AFC-5.

California Energy Commission (CEC) and Bureau of Land Management (BLM). 2009. Preliminary Staff Assessment and Draft Environmental Impact Statement for Ivanpah Solar Electric Generating System.

Cass, J. 2010. Personal communication Jeheil Cass (Lahontan Regional Water Quality Control Board) to Louise Flynn. April 7.

County of San Bernardino. 2007. Regional Parks. http://www.cwcinlandempire.com/partners_San_Bernardino_County_Parks.html. Accessed February 11, 2011.

Hunter, C. 2010. Personal communication Christy Hunter (Lahontan Regional Water Quality Control Board) to Louise Flynn. April 7.

Kern River Gas Transmission Company. 2011. Expansion Projects. Mountain Pass Lateral. http://www.kernrivergas.com/InternetPortal/BackDesktop.aspx?TabID=162&TabParentID=142.

Meckfessel, G.R., G. Helseth, T. Williams, J. Ann, and D.E. Cooke. 2010. Personal Communication George Meckfessel (BLM), Greg Helseth (BLM), Teresa Williams (San Bernardino County), Jerry Ann (Boulder City) and Darin E. Cooke (Caltrans) to Emery McCaffery. March to April, 2010.

PrimmNevada.net. 2010a. Ivanpah Dry Lake. http://www.primmnevada.net/ivanpah-dry-lake.php.

PrimmNevada.net. 2010b. Primm Golf. http://www.primmnevada.net/primm-golf.php.

Resource Concepts, Inc. 2005. Nevada Community Wildfire Risk/Hazard Assessment Project. http://www.rci-nv.com/home/rci-reports/.

Ricondo and Associates. 2008. Final Environmental Assessment Proposed Southern Nevada Regional Heliport. December.

U.S. Department of the Interior (DOI) 2010. Bureau of Land Management Case Recordation (MASS) Serial Register Pages for NVN 083083 and 083129.

U.S. Department of Transportation Federal Highway Administration (USDOT FHA) 2008. 2008 Status of the Nation's Highways, Bridges, and Transit" Conditions and Performance. Chapter 13 Freight Transportation.

U.S. Department of Transportation Federal Railroad Administration (USDOT FRA). 2009. Draft Environmental Impact Statement and 4(f) Evaluation for the Proposed DesertXpress High-Speed Passenger Train - Victorville, California to Las Vegas, Nevada. Volume 1: Report. March.

U.S. Department of Transportation Federal Railroad Administration (USDOT FRA). 2010. Supplemental Draft Environmental Impact Statement and 4(f) Evaluation for the proposed DesertXpress High-Speed Passenger Train. Volume I: Report. August.

U.S. Environmental Protection Agency (EPA). 2010. Toxics Release Inventory Envirofacts Report, Molycorps Minerals LLC Mountain Pass Mine. http://iaspub.epa.gov/enviro/tris_control.tris_print?tris_id=92366MLYCRI15AN. Accessed January 25, 2011.

United States Forest Service (USFS). 2001. Modeled habitat GIS layers.

United States Forest Service (USFS). 2008. Wildlife Reference Maps from the *Ongoing Activities for Riparian Species Biological Assessment. Cajon and Devore, California,/ Quadrangles.* Prepared by USFS for consultations with USFWS.

Watkins. 2010. Personal communication Tim Watkins (Construction Liaison for Joint Point of Entry Project) to Travis Whitney. August 25.

Legend

- ⊙ Mileposts
- ▬ Proposed Alignment

Cumulative Project Locations#*

- 🟩 Existing Project
- ▲ Reasonably Foreseeable Project

\# Cumulative Project numbers called out in the figure correspond with numbers in the "Map ID No." column of Table 3.18-1

* Locations identified for cumulative projects are approximate

0 1 2 Miles

FIGURE 3.18-1
CUMULATIVE PROJECTS

SOURCES
Bing 2010; Kinder Morgan 2009

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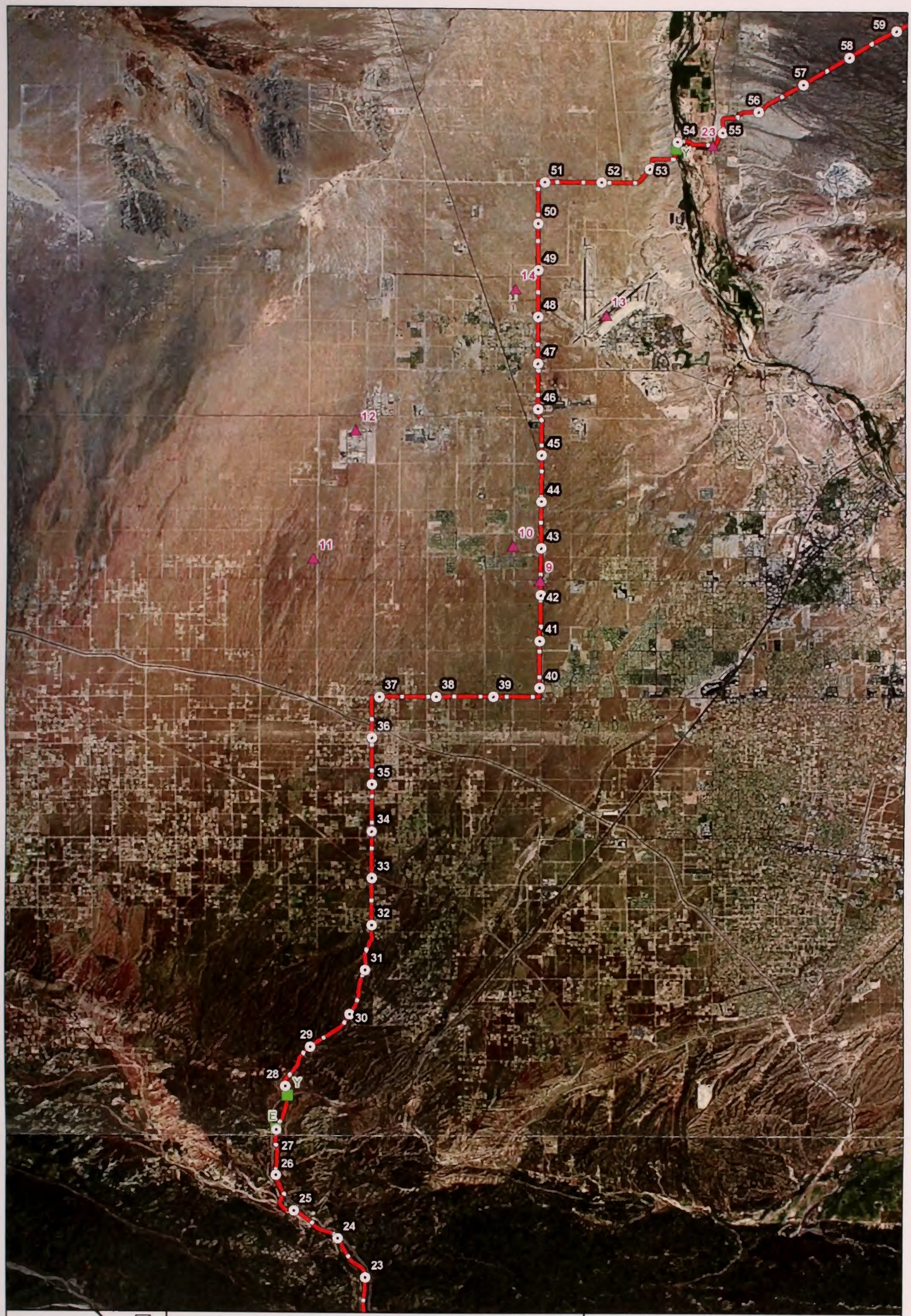

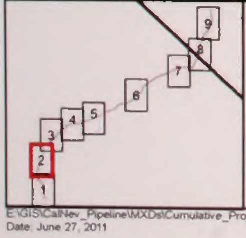

Legend

⊙ Mileposts

▬ Proposed Alignment

Cumulative Project Locations#*

🟩 Existing Project

▲ Reasonably Foreseeable Project

\# Cumulative Project numbers called out in the figure correspond with numbers in the "Map ID No." column of Table 3.18-1

* Locations identified for cumulative projects are approximate

FIGURE 3.18-2
CUMULATIVE PROJECTS

N

0 0.75 1.5 Miles

SOURCES:
Bing 2010; Kinder Morgan 2009

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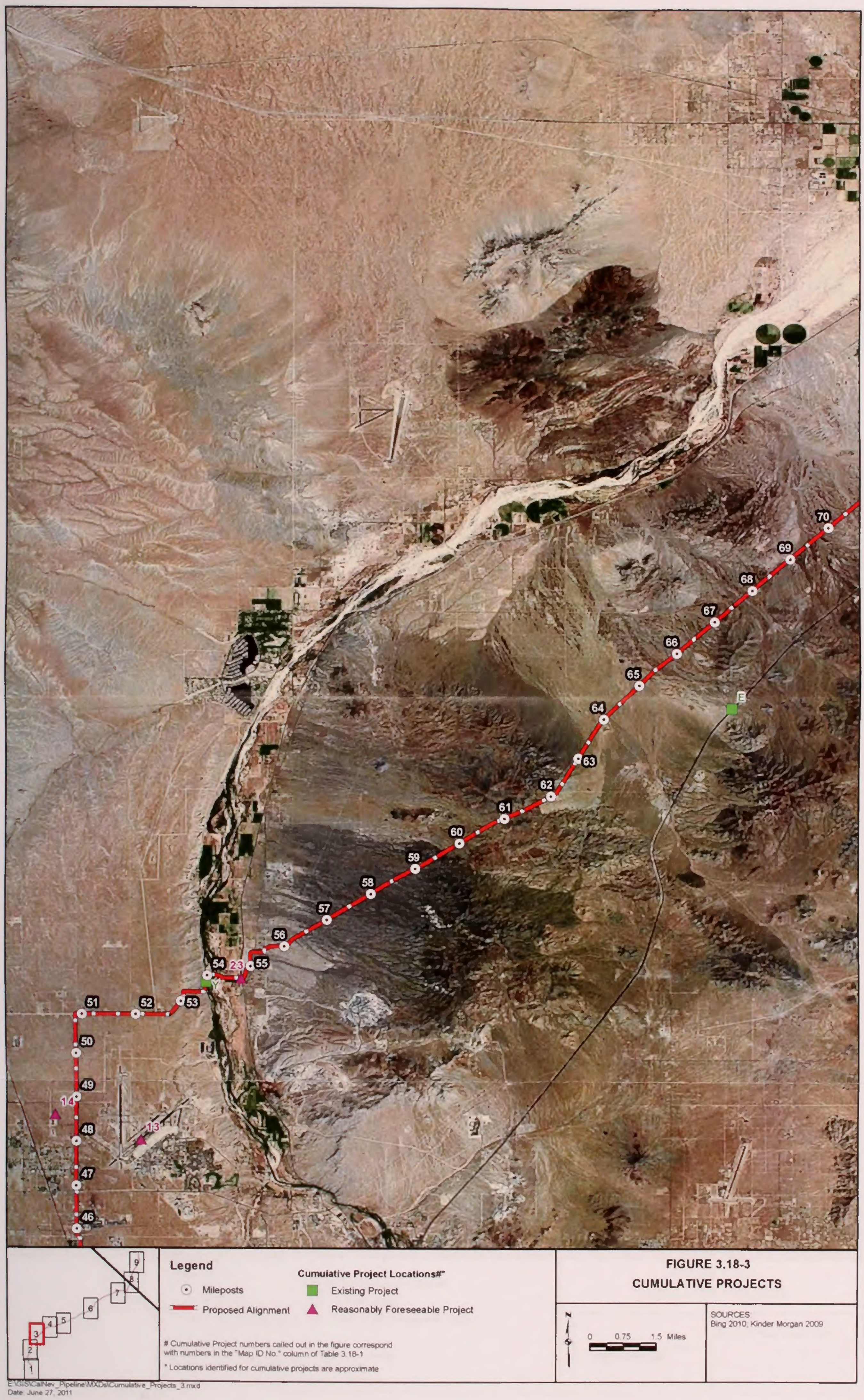

Legend

- Mileposts
- Proposed Alignment

Cumulative Project Locations#*

- 🟩 Existing Project
- ▲ Reasonably Foreseeable Project

\# Cumulative Project numbers called out in the figure correspond with numbers in the "Map ID No." column of Table 3.18-1

* Locations identified for cumulative projects are approximate

FIGURE 3.18-3
CUMULATIVE PROJECTS

N

0 0.75 1.5 Miles

SOURCES:
Bing 2010; Kinder Morgan 2009

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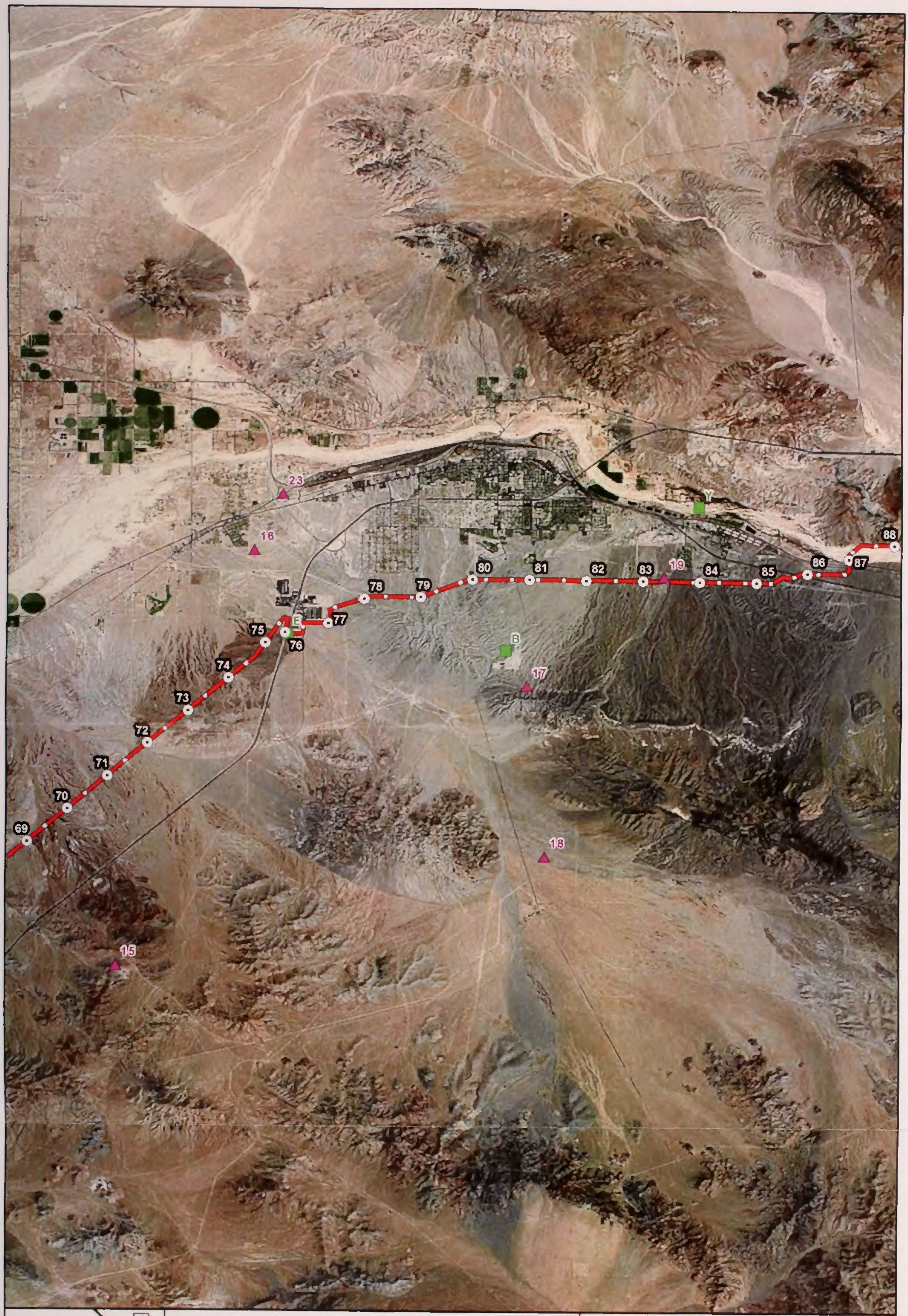

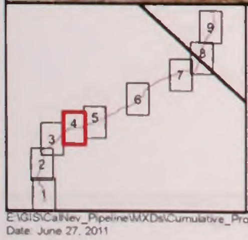

Legend

⊙ Mileposts

🟥 Proposed Alignment

Cumulative Project Locations#*

🟩 Existing Project

▲ Reasonably Foreseeable Project

Cumulative Project numbers called out in the figure correspond with numbers in the "Map ID No." column of Table 3.18-1

* Locations identified for cumulative projects are approximate

FIGURE 3.18-4
CUMULATIVE PROJECTS

N

0 0.75 1.5 Miles

SOURCES:
Bing 2010; Kinder Morgan 2009

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Date: June 27, 2011

Legend

- Mileposts
- Proposed Alignment

Cumulative Project Locations#*

- 🟩 Existing Project
- ▲ Reasonably Foreseeable Project

Cumulative Project numbers called out in the figure correspond with numbers in the "Map ID No." column of Table 3.18-1

* Locations identified for cumulative projects are approximate

FIGURE 3.18-5
CUMULATIVE PROJECTS

SOURCES:
Bing 2010, Kinder Morgan 2009

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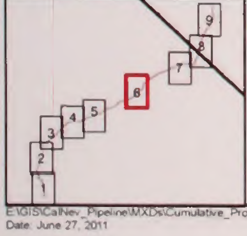

Legend

⊙ Mileposts

▬ Proposed Alignment

Cumulative Project Locations#*

🟩 Existing Project

▲ Reasonably Foreseeable Project

Cumulative Project numbers called out in the figure correspond with numbers in the "Map ID No." column of Table 3.18-1

* Locations identified for cumulative projects are approximate

FIGURE 3.18-6
CUMULATIVE PROJECTS

N

0 0.75 1.5 Miles

SOURCES:
Bing 2010; Kinder Morgan 2009

E:\GIS\CalNev_Pipeline\MXDs\Cumulative_Projects_6.mxd
Date: June 27, 2011

Cumulative Project numbers called out in the figure correspond with numbers in the "Map ID No." column of Table 3.18-1

* Locations identified for cumulative projects are approximate

FIGURE 3.18-7
CUMULATIVE PROJECTS

SOURCES:
Bing 2010; Kinder Morgan 2009

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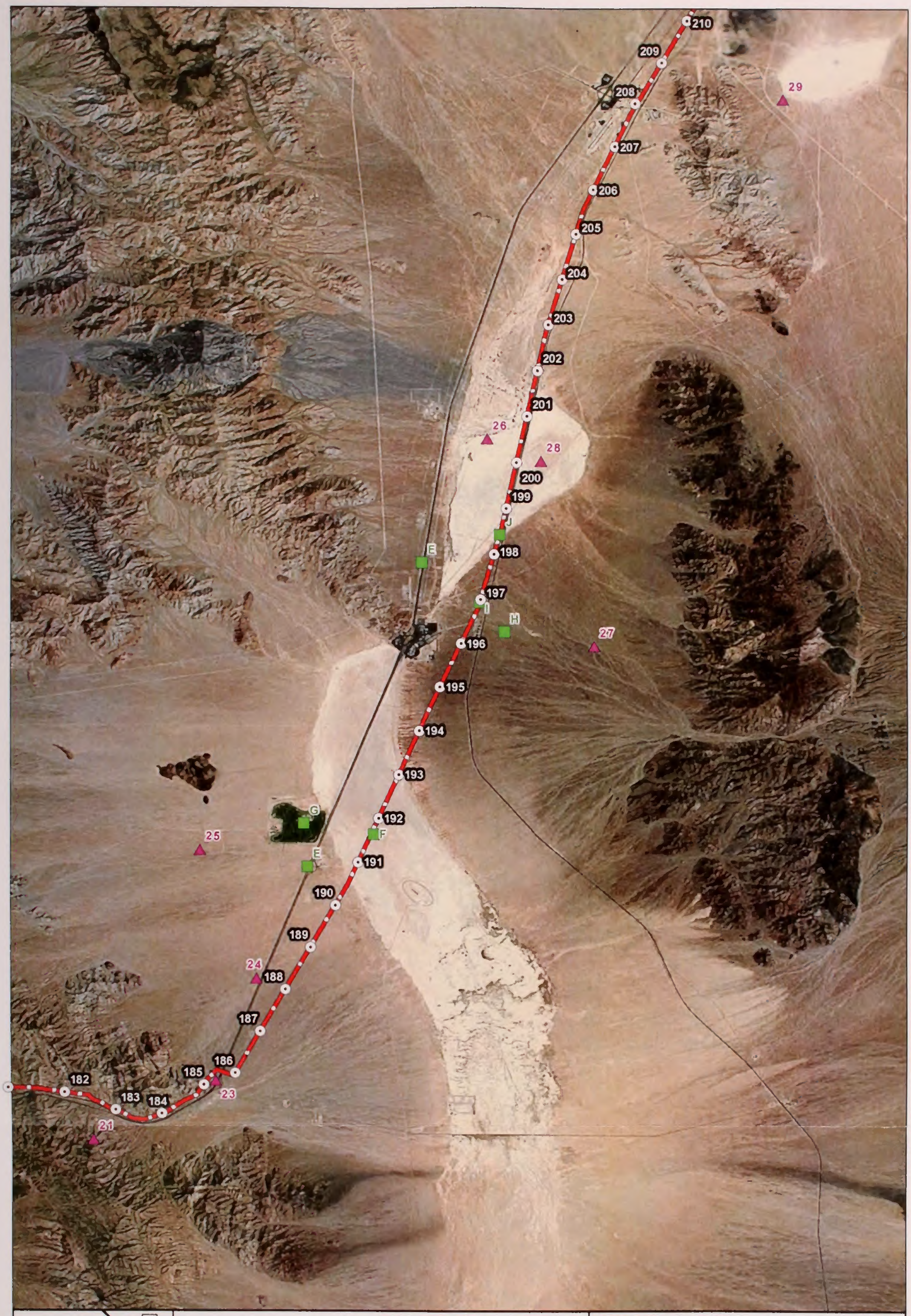

Legend

- ⊙ Mileposts
- Proposed Alignment

Cumulative Project Locations#*

- 🟩 Existing Project
- ▲ Reasonably Foreseeable Project

Cumulative Project numbers called out in the figure correspond with numbers in the "Map ID No." column of Table 3.18-1

* Locations identified for cumulative projects are approximate

FIGURE 3.18-8
CUMULATIVE PROJECTS

SOURCES:
Bing 2010; Kinder Morgan 2009

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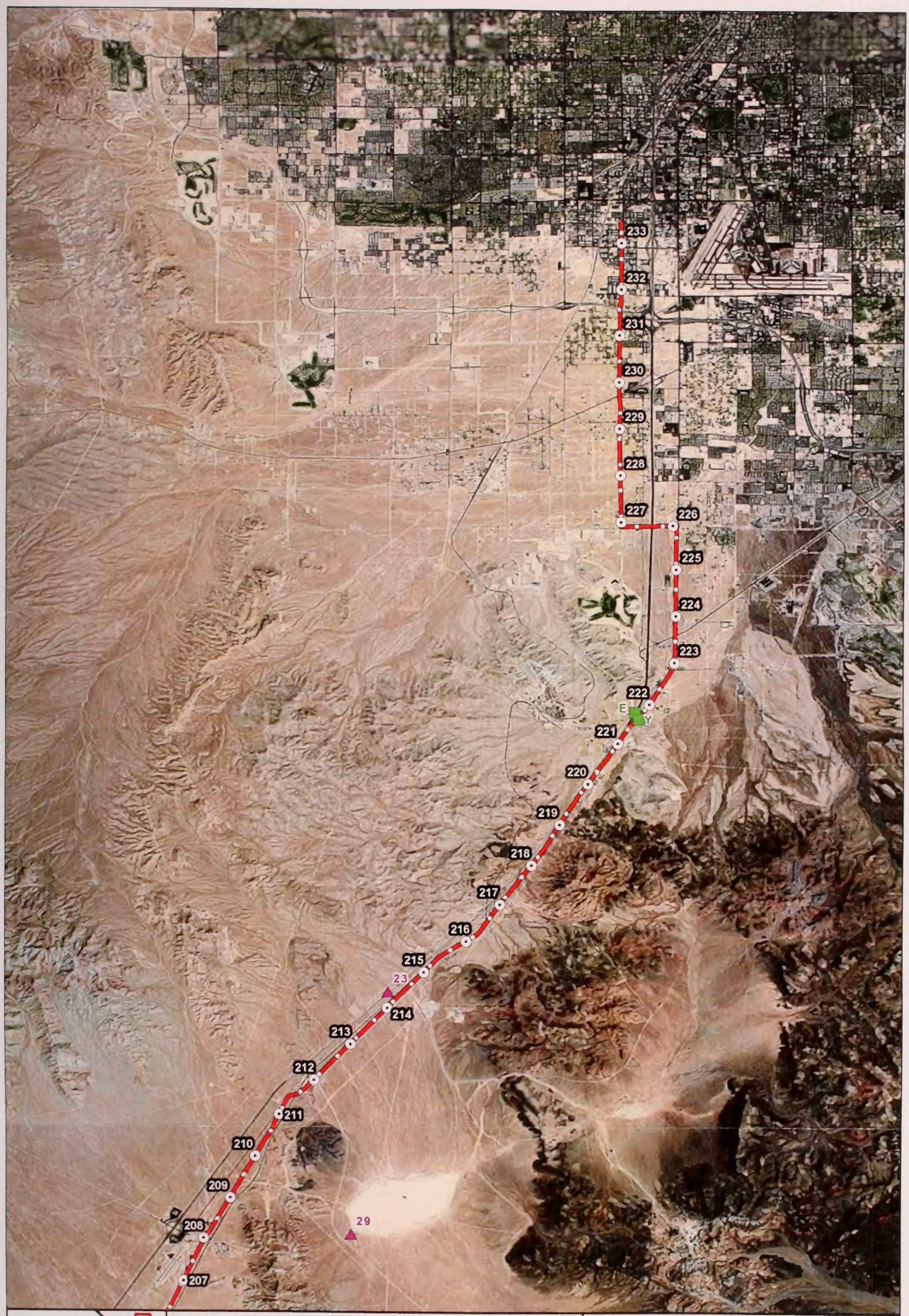

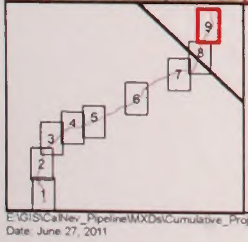

Legend

⊙	Mileposts
🟥	Proposed Alignment

Cumulative Project Locations#*

🟩	Existing Project
▲	Reasonably Foreseeable Project

\# Cumulative Project numbers called out in the figure correspond with numbers in the "Map ID No." column of Table 3.18-1

* Locations identified for cumulative projects are approximate

FIGURE 3.18-9
CUMULATIVE PROJECTS

N
0 1 2 Miles

SOURCES:
Bing 2010; Kinder Morgan 2009

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Date: June 27, 2011

3.19 Other NEPA and CEQA Requirements

3.19.1 Unavoidable Adverse Impacts and Irreversible and Irretrievable Commitments of Resources

3.19.1.1 Description

The Council on Environmental Quality (CEQ) regulations at 40 Code of Federal Regulations (CFR) 1502.16 and the Bureau of Land Management (BLM) National Environmental Policy Act (NEPA) Handbook (H-1790-1, Sec. 9.2.9) require a discussion of adverse impacts that would that would remain after all reasonable and effective mitigation is applied if the proposal is implemented. In addition, the CEQ regulations require disclosure of irreversible and irretrievable commitments of resources that would remain if the proposal is implemented. A resource commitment is considered irreversible when direct and indirect impacts from its use limit future use options. Irreversible commitments apply primarily to nonrenewable resources, such as cultural resources, and also to those resources that are renewable only over long periods of time, such as soil productivity or forest health. A resource commitment is considered irretrievable when the use or consumption of the resource is neither renewable nor recoverable for future use. Irretrievable commitments apply to loss of production, harvest, or use of natural resources.

Because most of the proposed construction would occur in an existing and previously disturbed portion of the right-of-way (ROW), many irreversible and irretrievable commitments of resources have already occurred. The following section describes additional irreversible and irretrievable commitments that would occur in areas not previously disturbed or to resources that may be affected as a result of new construction activities.

3.19.1.2 Topography, Geology, and Geologic Hazards

Construction of the Proposed Project would require blasting in and around unstable rock slopes that could result in slope failure, which if it occurred would be an unavoidable adverse impacts to topography. No other unavoidable impacts or irreversible or irretrievable commitments of resources would occur to topography or geology.

3.19.1.3 Soils

As discussed in Chapter 3, the only reasonably expected impacts in the Proposed Project area would be due to erosion and the loss of topsoil. The construction and maintenance activities outlined in Sections 2.2.3 and 2.2.4 would lead to increased erosion from wind or water or the loss of topsoil. These adverse impacts would be unavoidable due to the nature of the construction activities and soils in the Proposed Project area.

For the purposes of this analysis, an irretrievable and irreversible commitment of the soil resource would be the inability of the soil to allow natural revegetation to occur. Mitigation measures and best management practices, such as the stockpiling of topsoil during ground disturbing activities for later revegetation efforts, would reduce the severity and occurrence of these impacts. There would be an irreversible and irretrievable commitment of soil resources on areas where revegetation fails and subsequent erosion occurs.

Under Alternative 2, there would be an additional minor irreversible and irretrievable commitment of soil resources because the Phelan Road/Baldy Mesa Alternative route would run the pipeline outside the already existing 14” pipeline corridor and through areas that would require more clearing and grading. The Wagon Train Road Horizontal Directional Drilling (HDD) Alternative would avoid six acres of soil disturbance. The Baker Alternative route would locate the pipeline and construction activities to already cleared and developed infrastructure (e.g., roads, industrial facilities), potentially decreasing impacts related to soil resources.

Soil impacts could also occur from petroleum and other hazardous material spills. Should a spill occur, the affected area would be cleaned up according to the approved Spill Prevention Control and Countermeasures Plan (SPCC). Affected soils would be irretrievably and irreversibly lost, an unavoidable adverse impact.

3.19.1.4 Energy and Minerals

No impacts to energy or mineral resources would occur as a result of the Proposed Project or Alternatives. Within 1 mile of the Proposed Project route, but not within the ROW, there are mineral producing activities, mostly for sand and gravel. Given that the Proposed Project would not affect current or future production of minerals, there would be no irreversible or irretrievable commitment of these resources, nor would there be any unavoidable adverse impact to the resource.

3.19.1.5 Water Resources/Hydrology and Water Quality

For the purposes of this analysis, an irreversible and irretrievable commitment of water resources would be the permanent contamination of surface water body or groundwater aquifer, the overuse of these resources by the Proposed Project to the point where they would not be available for other uses, or change in runoff patterns that would increase erosion, sediment flow or the risk of flooding. Chapter 3.5 discloses the potential short-term impacts that may occur to water resources as a result of the Proposed Project as well as mitigation measures designed to reduce or avoid the impacts. While there is a risk that these measures would not completely mitigate the occurrence or severity of the impact, the Proposed Project is not expected to cause an irreversible and irretrievable commitment of the water resource.

Given the Applicant Proposed Mitigation (APM) and agency required mitigation measures discussed in Section 3.5.3, it is not expected that the Proposed Project would cause unavoidable adverse impacts to water resources.

3.19.1.6 Air Quality and Climate

There will be short term unavoidable impacts to air quality during construction, mostly from fugitive dust and minor increases in certain criteria air pollutants such as volatile organic compounds (VOCs), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter (PM_{10}), and particulate matter ($PM_{2.5}$). These impacts would be localized with construction spreads and would end after construction and reclamation have ended. Long-term, but minimal air emissions would occur as part of maintenance and operation of the pipeline, but these would be the same as are currently experienced for the existing pipeline.

3.19.1.7 Biological Resources

The following unavoidable adverse impacts would occur as a result of construction: short-term and potential long-term loss of habitat for wildlife foraging, breeding, and dispersal and could cause mortality or displacement of wildlife from some habitat areas. Construction and operation activities would result in unavoidable adverse impacts to avian species due to habitat loss and disturbance from increased human activity in the area. Construction and operation activities would result in short-term, minor impacts to wildlife movement and sensitive habitat areas due to habitat loss and disturbance from increased human activity in the area. Construction activities would alter habitats due to vegetation removal and habitat fragmentation, causing a disruption to wildlife through habitat loss and general disturbances associated with increased human presence.

Construction activities would result in both direct and indirect impacts to special-status plants through potential removal during clearing and grading, habitat fragmentation, and potential increase of noxious weeds into the Proposed Project area.

There would be no irreversible or irretrievable commitments of biological resources.

3.19.1.8 Cultural Resources

Construction of the Proposed Project could involve ground disturbance at various locations along the Area of Potential Effect, resulting in disturbance or destruction of subsurface cultural resources. Although several sites along the Proposed Project route are recommended for the National Register of Historical Places, including the Old Spanish Trail, irreversible or irretrievable commitment of the cultural resources would be avoided by employing mitigation measures to reduce or avoid impacts to the resource.

3.19.1.9 Paleontological Resources

No unavoidable adverse impacts are expected from the Proposed Project. No irreversible and irretrievable commitments of sensitive paleontological resources would occur during construction activities because mitigation measures in Chapter 3.9, describe the methods that would reduce or avoid the impact to the resources.

3.19.1.10 Lands and Realty

There would be no unavoidable adverse impacts to land use authorizations, realty actions and land uses from the Proposed Project. No irreversible and irretrievable commitments of resources would occur since the pipeline could be removed or retired in place at the end of the project life, which would allow other uses at that time.

3.19.1.11 Special Management Areas

The Proposed Project will cross several designated Special Management Areas (SMAs). Construction activities will be conducted in accordance with the procedures established to protect the management objectives in each of these areas. Resource-specific impacts would occur within these areas (particularly noise, air quality, and recreation impacts in localized areas), but these would be mitigated. There will not be any irreversible or irretrievable commitments of resources for SMAs.

3.19.1.12 Aesthetics and Visual Resources

The Proposed Project would cause unavoidable adverse impacts to visual resources during construction activities. During construction, fugitive dust, equipment and open trenches would cause temporary unavoidable adverse visual impacts, which would end after construction. It would also create new permanent adverse visual resource impacts in some areas of new ROW that would remain visible even after restoration.

Approximately 150 miles of the 233-mile route of the Proposed Project would be constructed in the existing ROW. The remaining 83 miles would be built in a new ROW, which would cause an irreversible and irretrievable commitment of visual resources where the ROW remains visible even after restoration.

3.19.1.13 Noise

Construction would cause unavoidable adverse impacts, especially where it occurs in the towns and cities along the Proposed Project route. Some local noise emissions and vibration could adversely affect animal species that may be displaced by the increase in noise. These displacements from noise and vibration would cease after construction ends. The analysis did not identify any permanent irretrievable or irreversible commitment of the resource during either construction or operation.

3.19.1.14 Recreation

Construction would cause unavoidable adverse impacts to recreation resources by temporarily disrupting access to facilities. Fugitive dust and noise would diminish some recreational experiences, and the creation of the new ROW potentially could increase access to backcountry areas that were previously undisturbed (Sections 3.13, Noise, and 3.14, Recreation). The analysis in Section 3.14 disclosed that the presence of workers might temporarily increase visitation to local recreation facilities along the Proposed Project route. Nevertheless, such impacts are not anticipated to result in irreversible or irretrievable commitments of recreational resources.

3.19.1.15 Social and Economic Conditions

No unavoidable adverse social or economic impacts are anticipated as a result of the Proposed Project. No irretrievable or irreversible commitment of social or economic resources is anticipated.

3.19.1.16 Transportation and Traffic

Construction of the Proposed Project would cause localized temporary unavoidable adverse impacts to roads and traffic. These impacts would be most apparent in construction spreads in urban areas. Construction activities would temporarily increase traffic and hazards from trenching and the presence of equipment and workers. Construction would also temporarily decrease on-street parking capacity during street closures. The transport of heavy equipment into construction areas may degrade the existing road conditions.

Impacts to the transportation network and effects on traffic would occur only during construction, and very occasionally during maintenance activities. The Proposed Project would not cause a permanent irreversible and irretrievable commitment of the resource.

3.19.1.17 Public Safety/Hazardous Materials

The construction and operation of a petroleum products pipeline has inherent risks. These have been identified and assessed in detail in Section 3.17. The adverse impacts that could occur from the Proposed Project to public health and safety would be generally confined to the following activities: construction or operational activities that could create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials; construction or operational activities that could create a significant hazard to the public or environment through a reasonably foreseeable upset or an accident involving the release of hazardous materials into the environment; or construction or operation of the Proposed Project that could expose people or property to a significant risk of loss, injury, or death involving wildland fires including areas in which wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The mitigation measures discussed in Section 3.17 would reduce the risk but would not necessarily prevent accidents from occurring. For the purposes of this analysis, these potential spills and releases would be unavoidable adverse impacts even though all reasonable efforts would be taken to avoid the impact.

The pipeline could be constructed in an area containing contaminated soil or groundwater such as those listed on the hazardous materials sites list compiled pursuant to (State of California) Government Code §65962.5. As a result, the Proposed Project could expose the public or the environment to contamination. Should a spill occur, there would be an irretrievable and irreversible commitment of soils or water resources in the area directly affected by the contamination.

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

NEPA requires consideration of the relationship between short-term uses of the environment and long-term productivity associated with the Proposed Project. This involves the consideration of whether the Proposed Project would sacrifice a resource value that might benefit the environment in the long term, or some short-term value to the Applicant or the public. For purposes of this discussion, “short-term” refers to the period of time encompassing the construction phase and subsequent restoration and rehabilitation activities. Long-term refers to that period of time following restoration and rehabilitation activities, during which consequent impacts from the Proposed Project may still affect the environment.

Short-term use of the environment during construction and restoration would result in the temporary loss of some resources, such as temporary loss of some habitat and access to recreational facilities, increased noise and air quality impacts. Some habitat would be permanently lost in areas of new ROW construction, and some flora and fauna specimens in the area in and around the construction and infrastructure locations would potentially be lost. Longer term impacts would include the permanent loss of some visual quality from the introduction of new structures, access roads in previously undisturbed areas and landscape scarring.

While there would be some irreversible and irretrievable commitments of some resources, as noted above, there would be no permanent loss of the overall productivity of the environment from the Proposed Project.

3.19.3 Effects Found Not To Be Significant

Section 15128 of the State California Environmental Quality Act (CEQA) Guidelines states that an Environmental Impact Report (EIR) shall contain a statement briefly indicating the reasons that various possible significant effects of the Proposed Project were determined not to be significant and were therefore not discussed in the EIR. All potential impacts defined under CEQA guidelines were evaluated in the Environmental Impact Statement (EIS)/EIR. For those impacts which are not applicable to the Proposed Project, the EIS/EIR states that they are not applicable, and provides the rationale. All other potential impacts are evaluated and discussed in the EIS/EIR.

3.19.4 Significant Environmental Effects which Cannot be Avoided if the Proposed Project is Implemented

Effects on all resources were evaluated to determine any significant or unavoidable impacts may result from the Proposed Project. In general, most adverse impacts associated with the Proposed Project are anticipated to be short-term and/or localized, and would be reduced to below their significance criteria by implementation of mitigation measures. Impacts and mitigation measures are identified and discussed throughout Chapter 3 of this report in their respective sections.

Two impacts from the Proposed Project could result in significant impacts that cannot be mitigated to below their significance criteria. These impacts are listed below. These impacts will not definitely occur, but do have the potential to occur, and if they occurred, their effects would likely be significant even after mitigation. The mitigation measures are primarily designed to reduce the potential for their occurrence, and to reduce the magnitude of their impact should they occur. Due to the potentially significant unavoidable impacts that would remain after mitigation is applied, approval of the Proposed Project would be subject to a Statement of Overriding Considerations under the CEQA.

- **Impact GEO-1: Severe damage to the pipeline from unstable soils or a geologic event.** Fault rupture resulting from earthquakes, fault creep, and associated tectonic deformation may cause damage to pipeline or related structure and cause a release of hazardous materials into the environment. Such a release could potentially expose people or structures to potential adverse effects, including the risk of loss, injury, or death, thus resulting in an impact would be a direct, adverse impact under NEPA, and that would be significant under CEQA. Though the implementation of mitigation measures would not fully alleviate the potential for impacts from a geologic event, mitigation is necessary to minimize potential impacts. In addition to the mitigation measures, it should be noted that stringent safety regulations regarding design, construction, and operation of the pipeline would apply, and that these regulations are intended to reduce the potential for these hazards. Also, the Applicant has deliberately designed the Proposed route of their pipeline, including minimizing the length of the pipeline in the region of the San Andreas Fault Zone, in order to minimize these potential hazards.

- **Impact HAZ-2: Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.** The Proposed Project would apply state-of-the-industry safety measures to prevent accidental releases of petroleum products into the environment. Furthermore, the Applicant would employ air- and ground-based personnel to monitor their ROW as a defense against third party disturbance. However, even with these measures, a release of petroleum products into the environment is possible. Although unlikely, the accidental release of petroleum products into the environment would be a significant impact to multiple resource areas. Stringent safety regulations regarding design, construction, and operation of the pipeline also would apply, and these regulations are intended to reduce the potential for these hazards.

3.19.5 Growth Inducing Impacts

This section discusses ways in which implementation of the Proposed Project or alternatives could foster economic or population growth or induce additional housing, either directly or indirectly, in the surrounding area.

Most energy projects could induce growth in areas they serve. The following criteria were considered to evaluate the growth-inducing potential of the Proposed Project.

Could the Proposed Project foster economic or population growth?

No. The Applicant's Proposed Project is intended to serve demand in an existing market. The demand for refined petroleum products in the California desert and Las Vegas, Nevada exists regardless of the Proposed Project. The Proposed Project would increase the amount of petroleum products delivered to the region; however, this demand would be served by other means (truck or train) if the Proposed Project were not built. Because demands for this resource could be served by other means, the Proposed Project would not have a growth inducing impact.

Would the Proposed Project provide new employment?

Yes. However, most of the jobs generated by the Proposed Project would be for its construction, not operation. Therefore, these jobs would not be growth-inducing.

Would the Proposed Project provide access to undeveloped or underdeveloped areas?

No. A 10 foot wide portion of the permanent ROW would be maintained for access however, the public would be discouraged from using the ROW as an access point by placing impediments to traffic at interval allowing the ROW. Discouraging access to the ROW would insure that growth-inducing impacts do not occur. Furthermore, the Proposed Project has been designed so that 64 percent would share existing ROW. Mitigation measures (MM REC-2a and REC-2b) are also required to minimize access following construction.

Would the Proposed Project extend public service to a previously un-served area?

No. The Proposed Project would not supply refined petroleum products to previously un-served areas, as it involves the expansion of an existing utility. If implemented, the Proposed Project would meet increased demand for existing customers.

Would the Proposed Project tax existing community services?

No. The number of non-local workers used Proposed Project would temporally increase population; however, this temporary increase in population would not negatively impact community services.

Would the Proposed Project cause development elsewhere?

No. The Proposed Project would serve existing developed areas.

Section 4.0

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