County of San Bernardino
Land Use Services Department
Planning Division

Public Review DEIR

April 2026

Castle Mountain Mine Project
Phase II Expansion Draft Environmental Impact Report

SCH No. 2025100846



Prepared by:
County of San Bernardino
Land Use Services Department
Planning Division

In Cooperation with:
U.S. Department of Interior
Bureau of Land Management
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service

CASTLE MOUNTAIN MINE PROJECT
PHASE II EXPANSION

PUBLIC REVIEW DRAFT
ENVIRONMENTAL IMPACT REPORT
SCH NO. 2025100846

Prepared for

County of San Bernardino
Land Use Services Department
Planning Division
Derek Newland, Planner II
385 North Arrowhead Avenue, 1st Floor
San Bernardino, California 92415-0187

Prepared by

SWCA Environmental Consultants
Jessica Cleavenger, Project Manager
320 North Halstead Street, Suite 120
Pasadena, California 91107
www.swca.com

SWCA Project No. 86259

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Acronyms and Abbreviations

Acronym	Term
°F	degrees Fahrenheit
µg/m³	microgram(s) per cubic meter
µPa	micropascal(s)
A&P	Atlantic & Pacific
AB	Assembly Bill
AC	alternating current
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
AFY	acre-feet per year
AG	Agriculture
AJD	Approved Jurisdictional Determination
AML	Abandoned Mine Lands
amsl	above mean sea level
APA	Approved Plan Area
APLIC	Avian Powerline Interaction Committee
APM	Applicant-proposed measures
APN	Assessor's Parcel Number
APSA	Aboveground Petroleum Storage Act
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ASCE	American Society of Civil Engineers
AST	aboveground storage tank
AT&SF	Atchison, Topeka, and Santa Fe
ATCM	Air Toxics Control Measure
ATF	Alcohol, Tobacco, and Firearms
BACT	Best Available Control Technology
BAER	Burned Area Emergency Response
BBCS	Bird and Bat Conservation Strategy
BESS	Battery Energy Storage System
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BLM	U.S. Bureau of Land Management
BLM_S	Bureau of Land Management: Sensitive
BMP	best management practice
BO	Biological Opinion
BOW	Bureau of Water
BWPC	Bureau of Water Pollution Control

Acronym	Term
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
cal.	calibrated
Cal/OSHA	California Division of Occupational Safety and Health Administration
CalARP	California Accidental Release Program
CalEEMod	California Emission Estimator Model
CalEPA	California Environmental Protection Agency
CalGEM	California Department of Conservation Geologic Energy Management Division
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
C-AMA	California-Arizona Maneuver Area
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	California Action Team
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCRFCD	Clark County Regional Flood Control District
CCS	cryptocrystalline silicate
CDCA	California Desert Conservation Area
CDD	California Desert District
CDFW	California Department of Fish and Wildlife
CDIFP	California Desert Interagency Fire Program
CDNPA	California Desert Native Plants Act
CDOC	California Department of Conservation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERS	California Environmental Reporting System
CESA	California Endangered Species Act
CFC	California Fire Code
CFR	Code of Federal Regulations
CGP	Construction General Permit
CGS	California Geological Survey
CH_4	methane
CHL	California Historical Landmark
CHP	California Highway Patrol

Acronym	Term
CIC	Carbon in Column
CIC tank	Carbon in Column tank
CIL	Carbon-in-Leach
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CIWMP	Countywide Integrated Waste Management Plan
CKH Act	Cortese-Knox-Hertzberg Local Government Reorganization Act
CLUC	Certificate of Land Use Compliance
CMA	conservation and management actions
CMM	Castle Mountain Mine
CMMAR	Castle Mountain Mitigated Access Route
CMNM	Castle Mountains National Monument
CMP	Congestion Management Plan
CMV	Castle Mountain Venture
CMVS	Castle Mountains Volcanic Sequence
CNEL	Community Noise Equivalent Level
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Cortese List	Hazardous Waste and Substances Sites List
County	County of San Bernardino
County Code	San Bernardino County Code
CPF	California Protected Furbearer
CPUC	California Public Utilities Commission
CRAA	Cultural Resource Analysis Area
CRHR	California Register of Historical Resources
CRIR	Colorado River Indian Reservation
CRPR	California Rare Plant Rank
CTMP	Construction Traffic Management Plan
CTP	Countywide Transportation Plan
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CVC	California Vehicle Code
CWA	Clean Water Act
CWP	Countywide Plan
dB	decibel(s)
dBA	A-weighted decibel(s)
DEHS	County of San Bernardino Department of Environmental Health Services

Acronym	Term
DMR	Division of Mine Reclamation
DOF	U.S. Department of Finance
DOI	U.S. Department of the Interior
DOI	Department of the Interior
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DPR	California Department of Pesticide Regulation
DRECP	Desert Renewable Energy Conservation Plan
DTC	Desert Training Center
DTSC	California Department of Toxic Substance Control
DTTP	Desert Tortoise Translocation Plan
DWR	California Department of Water Resources
EA	Environmental Assessment
EBAM	Met One EBAM monitor
EH	Early Holocene
EHS	Environmental Health Services
EIR	environmental impact report
EIS	environmental impact statement
EO	Executive Order
EOP	Emergency Operations Plan
EPCRA	Emergency Planning and Community Right-to-Know Act
ER	East Ridge
ERMA	Extensive Recreation Management Area
ERP	Emergency Response Plan
ESA	Endangered Species Act
ESM	Locksley Resources Limited, dba Enigma Strategic Minerals
ESU	Evolutionary Significance Unit
ESU	Evolutionary Significant Unit
EWF	East Well Field
FAM	Financial Assurance Mechanism
FCR	fire-cracked rock
FE	Federally Listed Endangered
FEM	Federal Equivalency Method
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FIRM	Flood Insurance Rate Map
FLPMA	Federal Land Policy and Management Act
FMMP	Farmland Mapping and Monitoring Program

Acronym	Term
FMP	Fire Management Plan
FP	CDFW Fully Protected
FPA	free production allowance
FPPA	Farmland Protection Policy Act
FR	*Federal Register*
FRA	Federal Responsibility Area
FTA	Federal Transit Administration
FW	Floodway
FWFMP	Federal Wildland Fire Management Policy
GBFS	Great Basin Fluted Series
GBSS	Great Basin Stemmed Series
GH	Geologic Hazard
GHG	greenhouse gas
GHGRP	San Bernardino County Greenhouse Gas Reduction Plan Update
GLA	Geo-Logic Associates
GLO	Government Land Office
gpd	gallons per day
gpm	gallons per minute
gsf	gross square feet
GWh	gigawatt-hours
GWP	global warming potential
H_2S	hydrogen sulfide
HAPS	hazardous air pollutants
HASP	Health and Safety Plan
HazMat	hazardous materials
HCD	California Department of Housing and Community Development
HDPE	high-density polyethylene
HFC	hydrofluorocarbon
HI	Hazard Index
HMBP	Hazardous Materials Business Plan
HMI	Human Machine Interfaces
HMIS	Hazardous Material Inventory Statements
HMMP	Hazardous Materials Management Plan
HRTP	Historical Resources Treatment Plan
HSC	California Health and Safety Code
HSC	Health and Safety Code
HSWA	Hazardous and Solid Waste Amendments
HUD	U.S. Department of Housing and Urban Development
HVAC	heating, ventilation, and air conditioning
HWMP	Hazardous Waste Management Program

Acronym	Term
Hz	hertz
I-15	Interstate 15
I-40	Interstate 40
IBC	International Building Code
ICC	International Code Council
IEPR	Integrated Energy Policy Report
IFC	International Fire Code
IPCC	Intergovernmental Panel on Climate Change
IQ	Intelligence quotient
IRR	internal rate of return
IT	information technology
IWMA	California Integrated Waste Management Act
JSLA Pit	Jumbo South Lesley Anne Pit
KOP	key observation points
kWh	kilowatt-hours
LAFCO	Local Agency Formation Commission
LCFS	Low Carbon Fuel Standard
LCFS	Low Carbon Fuel Standard
LCI	California Governor's Office of Land Use and Climate Innovation
L_{dn}	Day-Night Sound Level
L_{eq}	Equivalent noise level
LH	Late Holocene
L_{max}	root-mean-squared maximum noise level
L_n	percentile-exceeded sound level
LNG	liquefied natural gas
LOM	life of mine
LOS	Level of Service
LRA	Local Responsibility Area
LSAA	Lake and Streambed Alteration Agreement
LUPA	Land Use Plan Amendment
LUST	leaking underground storage tank
LV	vibration velocity level
LVFO	Las Vegas Field Office
m	meter(s)
MBTA	Migratory Bird Treaty Act
MBTRA	Migratory Bird Treaty Reform Act
MCC-VIC	McCullough-Victorville
MCV	Manual of California Vegetation
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District

Acronym	Term
mg/L	milligrams per liter
MH	Middle Holocene
MICR	maximum individual cancer risk
Mine Area	CMM Approved Project Area (APA)
Mining Law	General Mining Law of 1872
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan
MMT CO_2e	million metric tons carbon dioxide equivalent
MP	Mine Plan
mph	miles per hour
MPO	Metropolitan Planning Organization
MPO	Mine Plan of Operations
MRZ	Mineral Resource Zones
MSHA	Mine Safety and Health Act
$MTCO_2e$	metric tons CO_2e
MW	megawatts
MWA	Mojave Water Agency
MWac	megawatt alternating current
MWh	megawatt-hour
N	North
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves and Protection and Repatriation Act
NAHC	California Native American Heritage Commission
NCDC	National Climatic Data Center
NCP	National Contingency Plan
NDCNR	Nevada Department of Conservation and Natural Resources Communication
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDPS	Nevada Department of Public Safety
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFO	Needles Field Office
NFP	National Fire Plan
NFPA	National Fire Protection Association
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NIDS	Network Intrusion Detection System
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide

Acronym	Term
NOA	naturally occurring asbestos
NOI	Notice of Intent
NOP	Notice of Preparation
NO_X	nitrogen oxides
NP	Neopluvial
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes
NSA	Noise-Sensitive Area
NSPS	New Source Performance Standards
NSR	New Source Review
NWS	Northwest Water System
O_3	ozone
OEHHA	California Office of Environmental Health Hazard Assessment
OHP	California Office of Historic Preservation
OHV	off-highway vehicles
OPR	California Governor's Office of Planning and Research
OS	Open Space
OSHA	Occupational Safety and Health Administration
P:E	population-employment
P-C	Production-Consumption
PFC	perfluorocarbons
PHT	Pleistocene-Holocene Transition
PL	Public Law
PLC	Programmable Logic Controller
PM	particulate matter
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
POD	Plan of Development
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppb	parts per billion
ppm	parts per million
ppmv	parts per million volume
PPV	peak particle velocity
PRC	California Public Resources Code
PRMP	Paleontological Resources Management Plan
Project	Castle Mountain Mine Phase II Expansion Project
PV	photovoltaic

Acronym	Term
PVS	peak vector sum
RC	Resource Conservation
RCRA	Resource Conservation and Recovery Act
RHNA	Regional Housing Needs Assessment
RL	Rural Living
RLM	Resource/Land Management
RMP	Risk Management Plan
RMP	Resource Management Plan
RMPA	Resource Management Plan Amendment
RMPP	Risk Management and Prevention Program
RMS	root mean square
RNG	renewable natural gas
ROD	Record of Decision
ROM	run of mine
ROW	right-of-way
ROWD	Report of Waste Discharge
RPS	Renewable Portfolio Standard
RS	Revised Statute
RSLCC	Rock Springs Land & Cattle Company
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
S&HC	Streets and Highway Code
SAA	Streambed Alteration Agreement
SAFE	Safer Affordable Fuel-Efficient
SANBAG	San Bernardino Associated Governments
SB	Senate Bill
SBC	San Bernardino County
SBC Fire Code	San Bernardino County Fire Protection District Fire Code
SBCoFD	San Bernardino County Fire Protection District
SBCSD	San Bernardino County Sheriff's Department
SBCSWMD	San Bernardino County Solid Waste Management Division
SBCTA	San Bernardino County Transportation Authority
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCOTUS	Supreme Court of the United States
SCPPA	Southern California Public Power Authority

Acronym	Term
SCS	Sustainable Community Strategy
SDC	Seismic Design Category
SD-RES	Special Development-Residential
SDWA	Safe Drinking Water Act
SE	Southeast
SEA	Significant Ecological Area
SEM	Security Event Management
SEMS	Standardized Emergency Management System
sf	square feet or square foot
SF_6	sulfur hexafluoride
SFHA	Special Flood Hazard Area
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SLCP	short-lived climate pollutants
SMARA	Surface Mining and Reclamation Act
SMARTS	Stormwater Multiple Applications and Report Tracking System
SMGB	State Mining and Geology Board
SMR	small modular reactors
SNORE	Southern Nevada Off Road Enthusiasts
SNPLMA	Southern Nevada Public Land Management Act
SO_2	sulfur dioxide
SoCalGas	Southern California Gas Company
SOx	sulfur oxides
SPCC	Spill Prevention, Control, and Countermeasure
SQMP	stormwater quality management program
SR	State Route
SRA	source receptor area
SRA	State Responsibility Area
SRMA	Special Recreation Management Area
SRRE	Source Reduction and Recycling Element
SSC	CDFW Species of Special Concern
State Water Board	State Water Resources Control Board
sUAS	Small Unmanned Aerial System
SVP	Society of Vertebrate Paleontology
SVWS	Shadow Valley Well System
SW	Southwest
SWAT	Special Weapons and Tactics
SWCA	SWCA Environmental Consultants
SWPPP	Stormwater Pollution Prevention Plan

Acronym	Term
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TDS	total dissolved solids
TISG	Transportation Impact Study Guidelines
TMDL	total maximum daily load
TPA	Transit Priority Area
TPD	tons per day
TRU	transport refrigeration units
TSCA	Toxic Substances Control Act
U.S. 95	U.S. Highway 95
UPRR	Union Pacific Railroad
UR1	Urban Residential 1
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USNVC	U.S. National Vegetation Classification
USPS	U.S. Postal Service
UST	underground storage tank
UTM	Unified Threat Management
UWMP	urban water management plan
VegCAMP	Vegetation Classification and Mapping Program
Viceroy	Viceroy Gold Corporation
VMT	vehicle miles traveled
VOC	volatile organic compound
VoIP	Voice over Internet Protocol
VPL	Variance Process Lands
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WAP	Water Action Plan
WDID	Waste Discharge Identification
WDR	waste discharge requirement
WEAP	Worker Environmental Awareness Program
WMA	Watershed Management Area
WMC	Watershed Management Committee
WMP	Waste Management Plan
WOTUS	Waters of the United States

Acronym	Term
WSA	Water Supply Assessment
WWF	West Well Field
WWII	World War II
ZEV	zero-emission vehicle

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SUMMARY

1. PURPOSE OF THE EIR

An environmental impact report (EIR) is a public document used by Lead Agencies to analyze the environmental effects of a project and to disclose possible ways to reduce or avoid significant environmental impacts, including through mitigation measures and/or alternatives. As an informational document, an EIR does not make recommendations for or against approving a project. The main purpose of an EIR, as described in California Environmental Quality Act (CEQA) Guidelines (14 California Code of Regulations [CCR] Chapter 3, Section 15121), is to inform public agency decision-makers and the public about potential environmental impacts of a project**.** This EIR has been prepared for the proposed Castle Mountain Mine Phase II Expansion Project (Project), in compliance with the California Environmental Quality Act (CEQA; California Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (14 CCR 15000 et seq.). San Bernardino County (County) is the CEQA Lead Agency, and the U.S. Bureau of Land Management (BLM) is the Responsible Agency. Both agencies will use this EIR, together with other information in the administrative record, to make discretionary decisions regarding approval of the proposed Project.

For purposes of CEQA compliance, this EIR evaluates the environmental impacts of the proposed Project within the state of California, consistent with CEQA's jurisdictional authority. Although portions of the proposed Project extend into the state of Nevada and are described for context and completeness, the environmental impact analysis presented in this EIR focuses on potential effects occurring within California. An environmental impact statement (EIS) under the National Environmental Policy Act (NEPA) is being prepared concurrently to fulfill the BLM's obligations under NEPA.

2. PROJECT LOCATION

Castle Mountain Mine (CMM) is in the Mojave Desert in the historic Hart Mining District of San Bernardino County, California, approximately 100 miles east of Barstow, California, 60 miles south of Las Vegas, Nevada, and 40 miles northwest of the BLM Needles Field Office in California, traversing the California-Nevada state line. The Mine Area is located in San Bernardino County, California, and the proposed underground water pipeline and 69-kilovolt (kV) overhead powerline connect to the mine and continue into Clark County, Nevada. The proposed mine expansion would disturb approximately 1,434 acres within the existing Mine Area (3,905 acres), and the proposed underground water pipeline and 69-kV overhead powerline rights-of-way (ROWs) would disturb approximately 380 acres. Including the 1,474 acres of existing disturbance, the total project disturbance area is approximately 3,288 acres. The Project Area occupies both private land owned by Castle Mountain Venture (CMV) and unpatented mining claims on BLM-administered land.

3. PROJECT BACKGROUND AND OVERVIEW

The County and the BLM approved the 1990 Mine and Reclamation Plan (1990 Plan) to construct and operate the CMM in eastern San Bernardino County, California. The 1990 Plan included a 10-year mining schedule followed by 10 years of reclamation and monitoring. The approved plan authorized development of three open pits, heap leach pads, ore crushing facilities, a gold recovery plant, access roads, and maintenance and administrative buildings. The 1990 Plan anticipated mining approximately 90 million tons of material, including 30 million tons of ore and 60 million tons of overburden. The approved Project Area encompassed approximately 2,735 acres, with an estimated surface disturbance of 890 acres.

Construction began in 1990, and mining and gold production commenced in 1991. In 1998, CMV submitted an amendment to the MPO for the proposed Project. Under the 1998 amendment, the total Project Area increased from 2,620 to 3,910 acres, and authorized surface disturbance increased by approximately 486 acres, to a total of approximately 1,375 acres. The mining schedule was extended through December 31, 2020.

Between 1991 and the cessation of operations in 2004, the mine produced approximately 1.25 million ounces of gold and 400,000 ounces of silver. Reclamation activities were undertaken following suspension of mining, and in 2012, the California State Division of Mine Reclamation (DMR) and the County determined that reclamation goals had been achieved. Concurrently, the County approved an Interim Management Plan (IMP) and retained an appropriate Financial Assurance Mechanism (FAM) for suspension of mining. In response to increased gold prices and renewed interest in remaining mineral resources, three phases of exploration drilling were conducted between late 2013 and 2019 pursuant to the existing Mine Plan of Operation (MPO) originally approved in 1990. The exploration programs were designed to confirm previously identified mineral resources and evaluate potential extensions of known mineralization.

In 2020, CMV submitted an updated plan reflecting modifications since interim reclamation was completed in 2012 and the mine remained idle between 2013 and 2020 (CMV 2020). The 2020 Plan, including the Phase I expansion, was processed as a minor plan modification by the County because it did not propose new facilities beyond those previously authorized; however, it accounted for a change in land use, as the patented lands had been transferred to CMV in 2007. The 2020 Plan also recorded reclamation plan revisions that had been approved by the lead agency in July 2002.

Figure S-1 details the history of the Project, beginning with the discovery of gold in 1907 to 1908.

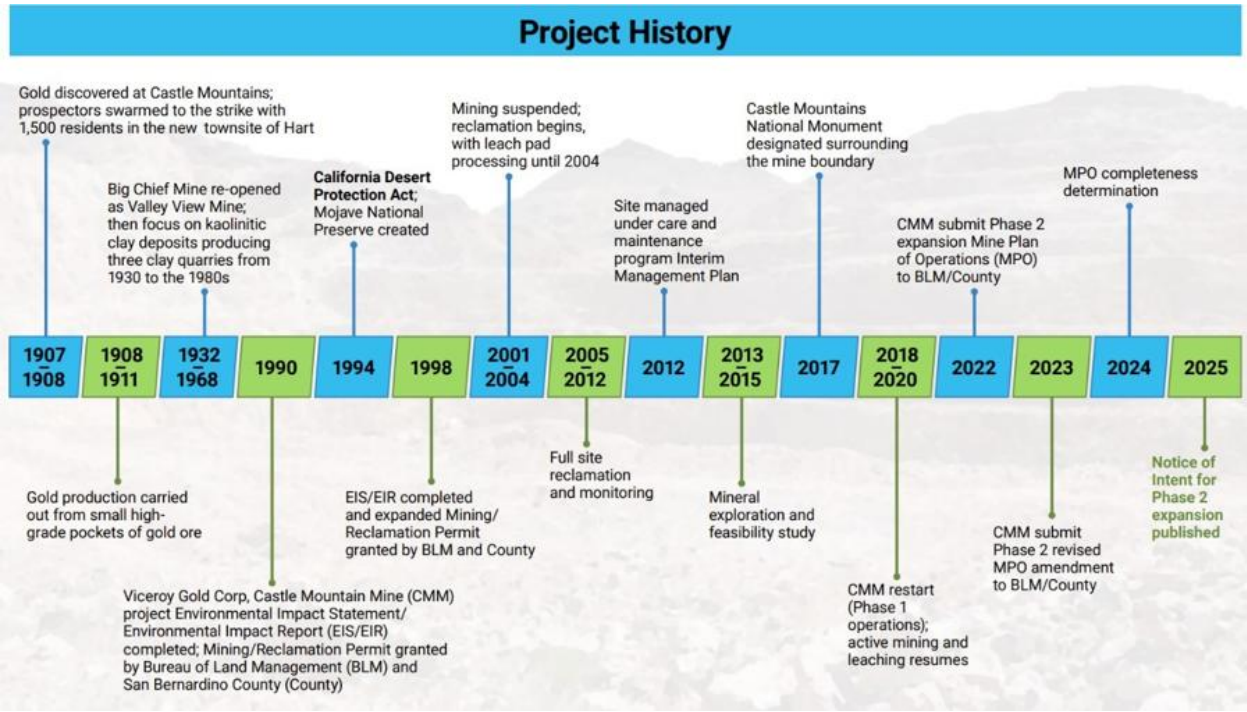


Figure S-1. Project History Timeline

4. SIGNIFICANT ENVIRONMENTAL IMPACTS IDENTIFIED

Impacts of the proposed Project and alternatives have been classified using the categories described below:

- **Significant and unavoidable impacts:** Significant impacts that cannot be fully and effectively mitigated. No measures could be taken to avoid or reduce these adverse effects to less-than-significant or negligible levels.
- **Less than significant impact with mitigation incorporated:** These impacts are potentially similar in significance to those of significant and unavoidable impacts, but can be reduced or avoided by the implementation of mitigation measures.
- **Less than significant impact:** Mitigation measures may still be required for these impacts as long as there is a rough proportionality between the environmental impacts caused by the proposed Project and the mitigation measures imposed on the proposed Project.
- **No impact:** A no-impact determination is applied where the proposed Project would not result in a direct, indirect, or cumulative adverse effect on the environment under the applicable significance criteria. The analysis demonstrates that implementation of the proposed Project would not trigger any thresholds of significance identified in Appendix G of the State CEQA Guidelines or other adopted regulatory standards. Because no environmental change would occur, no mitigation measures or additional regulatory requirements are necessary.

The term "significance" is used throughout the EIR to characterize the magnitude of the projected impact. For the purpose of this EIR, a significant impact is a substantial or potentially substantial change to resources in the local proposed Project Area or the area adjacent to the proposed Project as compared to existing conditions. In the discussions of each resource area, thresholds are identified that are used to distinguish between significant and less-than-significant impacts as a result of implementation of the proposed Project compared to existing baseline conditions. To the extent feasible, distinctions are also made between local and regional significance and short-term versus long-term duration. Where possible, measures have been identified to reduce Project impacts to less-than-significant levels. CEQA requires that public agencies not approve projects as proposed if there are feasible mitigation measures available that would substantially lessen the environmental effects of such projects (PRC Section 21002 [CEQA Statute Section 21002]). Included with each mitigation measure are the plan requirements needed to ensure that the mitigation is included in the plans and construction of the proposed Project and the required timing of the action (e.g., prior to development of final construction plans, prior to commencement of construction, prior to operation, etc.).

The significant environmental impacts of the proposed Project are identified and described in this EIR and are summarized in Table 1-1, *Mitigation Monitoring and Reporting Program* (Appendix M). Table 1-1 identifies each significant impact with a corresponding impact number (e.g., Impact AQ-1) and specifies the level of significance before mitigation. Recommended mitigation measures to reduce or avoid significant impacts are identified in the applicable resource sections and are summarized in Appendix M, which provides a consolidated list of all mitigation measures adopted as part of this EIR. Table 1-1 also identifies the level of residual impact after implementation of mitigation measures.

5. AREAS OF CONTROVERSY

Section 15123(b)(2) of the State CEQA Guidelines requires the identification of areas of controversy known to the Lead Agency, including issues raised by agencies and the public. On October 17, 2025, in accordance with Sections 15063 and 15082 of the State CEQA Guidelines, the County published a Notice of Preparation (NOP) for the EIR and circulated it to governmental agencies, organizations, and persons

who may be interested in the proposed Project, including nearby landowners, homeowners, and tenants. As part of releasing the NOP, the County requested comments on the scope of the EIR and asked interested parties for their suggestions regarding ways the proposed Project could be revised to reduce or avoid any significant environmental impacts. The NOP provided a general description of the proposed Project, a description of the Project Area, and a preliminary list of potential environmental effects. The 30-day comment period ended on November 20, 2025.

One hybrid (in-person and virtual) public scoping meeting was held at 5:00 p.m. on November 5, 2025, to solicit input from interested parties on the scope and content of the EIR and the BLM's EIS that is being prepared for the proposed Project in conformance with PRC Section 21083.9 and NEPA. The scoping meeting was held in the Searchlight Community Center in Searchlight, Nevada, at 200 Michael Wendell Way, Searchlight, Nevada 89046.

Following the close of the 30-day comment period on the NOP, comment letters were reviewed to identify any key issues that may require additional technical studies or background research. Most comment submissions were form letter copies, followed by form plus letters, then by unique letters, and lastly duplicates. One form letter was identified, accounting for 2,074 (including form letter copies and form plus letters) of the 2,143 letter submissions (or approximately 97%). This form letter primarily raised concerns related to denying the ROW for the proposed Project through the Avi Kwa Ame National Monument, negative impacts on nearby protected areas (Castle Mountains National Monument, Mojave National Preserve), increased traffic and pollution (sound, light, dust), threats to groundwater resources due to mine dewatering, and the need for compliance with reclamation laws and thorough analysis of alternatives, mitigation measures, and impacts on wildlife and vegetation. Table S-1 summarizes the types of letters submitted.

Table S-1. Submittal Summary by Letter Type

Letter Type	Letter Type Count	Percentage of Total Letters Submitted
Form	1,911	89%
Form plus	163	8%
Unique	62	3%
Duplicate	7	0.3%
Total	**2,143**	**100**%

Table S-2 summarizes the written comments received during the NOP comment period and the verbal comments recorded at the public scoping meeting.

Individual comments were assigned to one of 36 categories based on the overall theme and concern of the comment (see Table S-2). Letter submittals typically contained several distinct comments; every effort was made to split each submittal such that each comment pertained to a single resource, which was often not possible due to the interrelated nature of many resources. For example, many comments were coded to NATPARKS because the overall concern raised in the comment was the Avi Kwa Ame National Monument; however, many of these comments also mentioned overall habitat connectivity and natural resources related to threatened, endangered, and special-status species within the Avi Kwa Ame National Monument or mentioned visual impacts to this area.

Table S-2 counts each form letter comment once, regardless of the number of individuals submitting that form letter. These counts are not intended to provide a quantitative assessment of the volume of comments relative to individual resources, but do provide some indication of which resources were of primary concern in the public scoping comments.

Table S-2. Public Scoping Comments by Category

Code	Issue Category or Process Category	Comment Count	Percentage of Total Comments
NEPA Process Code			
ALTPROPOSED	Alternative A – Proposed Action	17	3%
ALTNOACT	Alternative B – No Action	2	<1%
ALTSNEW	Suggested New Alternatives	48	9%
CONSESA	Endangered Species Act Consultation and Coordination	6	1%
CONSGEN	General Consultation and Coordination	1	<1%
CONSTRIBAL	Tribal Consultation and Coordination	10	2%
CUMU	Cumulative Effects	10	2%
DATA	Data	1	<1%
MIT	Mitigation	6	1%
POD	Plan of Development	8	1%
POLICYCOMPLY	Legal or Policy Compliance	30	5%
PROJDESC	Project Description	12	2%
PI	Public and Stakeholder Involvement	7	1%
PN	Purpose and Need	3	<1%
Resource Code			
AESVIS	Aesthetic and Visual Resources	17	3%
AIRGHG	Air Quality/Greenhouse Gases	10	2%
ACEC	Areas of Critical Environmental Concern	3	<1%
CR	Cultural Resources and Native American Concerns	17	3%
EJSOC	Environmental Justice and Socioeconomics	14	3%
HAZ	Hazardous Materials and Solid Waste	2	<1%
FIRE	Fire and Fuels Management	4	<1%
GEO	Geology, Minerals, and Soils	4	<1%
LAND	Lands and Realty	9	2%
NATPARKS	National Parks, Preserves, and Monuments	62	11%
NOISE	Noise	3	<1%
REC	Recreation	3	<1%
TRAN	Transportation	2	<1%
VEGGEN	Vegetation Resources (including noxious or invasive weeds species and wetlands/riparian zones)	17	3%
VEGTESSS	Vegetation Resources (threatened, endangered, and special-status species)	8	1%
WATER	Water Quality and Quantity	73	13%
WILDGEN	General Wildlife	25	5%
WILDTESSS	Wildlife (threatened, endangered, and special-status species)	56	10%

Code	Issue Category or Process Category	Comment Count	Percentage of Total Comments
General			
ATTN	Attention/Action Needed	11	2%
OPP	Oppose	28	5%
OOS	Out of Scope	3	<1%
SUP	Support	20	4%
Total		**552**	**100**%

To the extent these issues and concerns are within the scope of CEQA, they are addressed in the evaluation and identification of potential mitigation measures for each environmental issue area included in Chapter 4, *Environmental Impact Analysis*.

6. ISSUES TO BE RESOLVED

Section 15123(b)(3) of the State CEQA Guidelines requires the summary section of an EIR to identify any "issues to be resolved" by the decision-making body, including the choice among alternatives and whether or how to mitigate any significant effects. In consideration of the proposed Project, the County will need to weigh air quality and greenhouse gas (GHG) emissions as they relate to construction and operation, biological resources and cultural and tribal resources issues as they relate to Project construction, and the potential for additional environmental impacts to occur as described in this EIR. Specifically, determinations will need to be made as to whether the recommended mitigation measures for identified significant impacts should be adopted or modified, and whether the benefits of the Project outweigh the environmental impacts that cannot be feasibly avoided or mitigated to less than significant (i.e., the Project's significant and unavoidable impacts to air quality). Additionally, a determination will need to be made as to whether any alternatives, instead of the Project as proposed, should be approved to substantially lessen the level of significant impacts.

7. PROJECT ALTERNATIVES

Section 15123(b)(3) of the State CEQA Guidelines requires that an EIR summary identify the choice among project alternatives. Alternatives to the proposed Project are discussed in detail in Chapter 5, *Alternatives Analysis*, of this EIR in accordance with Section 15126.6 of the State CEQA Guidelines. Alternatives required to be considered under CEQA are those that would avoid or substantially lessen one or more of the significant environmental effects identified during evaluation of the proposed Project. State CEQA Guidelines Section 15126.6(a) states that an EIR shall describe a range of reasonable alternatives. As evaluated throughout Chapter 4 of this EIR, the significant impacts of the proposed Project prior to implementation of Project mitigation measures would occur in the following environmental issue areas: air quality; biological resources; cultural and tribal cultural resources; geology, soils, and mineral resources; and GHG emissions, with significant and unavoidable impacts to air quality.

Chapter 5 of this EIR identifies, describes, and evaluates the following four alternatives:

- **Alternative 1: No Project Alternative.** Section 15126.6(e) of the State CEQA Guidelines requires analysis of a No Project Alternative, which evaluates existing environmental conditions at the time environmental review begins and considers what would reasonably occur if the proposed Project were not approved. Under the No Project Alternative, the proposed mine expansion and associated improvements would not occur, and existing site conditions would

generally remain unchanged. Mining operations would continue only within currently authorized areas under existing federal and County approvals, including the approved BLM MPO and County Conditional Use Permit, and would be limited to approximately 1,298 acres using existing open-pit and heap-leach methods. No expansion beyond the currently permitted boundaries would occur unless future approvals were obtained in accordance with applicable regulations.

- **Alternative 2: Backfilling to Avoid Surface Expression of the South Pit Lake.** Alternative 2 would partially backfill the South Extension pit after completion of mining to prevent formation of a surface pit lake. Following the conclusion of mining activities, approximately 17 million tons of waste rock would be relocated to raise the pit floor from about 3,120 feet to 3,480 feet above mean sea level, a level projected to eliminate a substantial pit lake and reduce long-term water management needs. This backfilling effort would extend the mining schedule by approximately two years and require additional haul truck operations. However, this alternative would provide long-term water resource benefits by reducing evaporative losses associated with pit lake formation. In addition, by limiting or eliminating the formation of a surface pit lake, this alternative would reduce the potential for migration of lake water containing trace metals (e.g., arsenic, lead, copper) into the surrounding regional aquifer, thereby providing a long-term reduction in potential impacts to groundwater quality. All other aspects of the mine development and operations would remain consistent with the proposed Project. Environmental effects would primarily relate to increased haulage, fuel use, air emissions, and temporary disturbance along haul routes, while reducing long-term hydrologic impacts associated with pit lake formation.
- **Alternative 3: Small Solar Facility for Supplementation.** Alternative 3 would install a small on-site solar photovoltaic facility north of the Phase II heap leach pad to generate 5 to 10 megawatts of electricity to supplement daytime mining operations. The solar array would modestly reduce reliance on grid power and on-site liquefied natural gas (LNG) microturbines during daylight hours, improving energy reliability and reducing carbon dioxide (CO_2) emissions, but not replacing primary power sources or meeting nighttime demands. Development of the facility would require minor electrical integration and limited grading within the array footprint, with capital costs increasing by approximately $42 million. Additionally, implementation of the small solar facility would result in an increased disturbance footprint and jurisdictional restrictions within and adjacent to the York Fire burn perimeter. Most mining operations would remain unchanged. Environmental effects would primarily relate to localized soil, biological, cultural, and visual impacts within the solar site, which would be addressed through standard mitigation and reclamation measures.
- **Alternative 4: Backfilling to Avoid Surface Expression of the South Pit Lake and Small Solar Facility for Supplementation.** Alternative 4, which is a combination of Alternatives 2 and 3, would include partially backfilling the South Extension pit after completion of mining and installing a small on-site solar photovoltaic facility north of the Phase II heap leach pad. This alternative would provide measurable environmental benefits in certain resource areas. Partial backfilling of the South Extension Pit would substantially reduce or eliminate the formation of a surface pit lake, thereby reducing long-term evaporative water loss and limiting the extent of open water exposure within the Project Area. In addition, the incorporation of a small on-site solar facility would reduce reliance on fossil fuel–based energy sources during daytime operations. Although this alternative would not avoid or substantially lessen the proposed Project's significant and unavoidable air quality impacts, it would provide targeted environmental benefits related to water and energy conservation, groundwater quality and reduced evaporative loss, and incremental reductions in operational emissions.

Table S-3 provides a comparison of impacts among the project alternatives.

Table S-3. Comparison of Impacts Among the Alternatives

Issue Area	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Backfilling to Avoid Surface Expression of South Pit Lake	Alternative 3: Small Solar Facility for Supplementation	Alternative 4: Backfilling to Avoid Surface Expression of South Pit Lak and Small Solar Facility for Supplementation
Aesthetics	Increased	**Decreased**	Similar	Similar	Similar
Agriculture and Forestry	Similar - No Impact	Similar - No Impact	Similar - No Impact	Similar - No Impact	Similar - No Impact
Air Quality	Increased	**Decreased**	Increased	**Decreased**	**Slight Decrease**
Biological Resources	Increased	**Decreased**	Increased	Increased	Increased
Cultural and Tribal Cultural Resources	Increased	**Decreased**	Similar	Similar	Similar
Energy	Increased	**Decreased**	Similar	Similar	Similar
Geology, Soils, and Mineral Resources	Increased	**Decreased**	Similar	Similar	Similar
Greenhouse Gas Emissions	Increased	**Decreased**	Increased	**Decreased**	**Slight Decrease**
Hazards and Hazardous Materials	Increased	**Decreased**	Similar	Similar	Similar
Hydrology and Water Quality	Increased	**Decreased**	**Decreased**	Similar	**Slight Decrease**
Land Use and Planning	Increased	Similar	Similar	Similar	Similar
Noise and Vibration	Increased	**Decreased**	Increased	**Decreased**	**Slight Decrease**
Population and Housing	Increased	**Decreased**	Similar	Similar	Similar
Public Services, Utilities, and Service Systems	Increased	**Decreased**	Similar	Similar	Similar
Transportation and Recreation	Increased	**Decreased**	Similar	Similar	Similar
Wildfire	Increased	Similar	Similar	Similar	Similar
Meets Project Objectives?	Yes	No	Partially	Partially	Partially

Notes:

Proposed Project impacts are compared to existing or baseline conditions, and Alternatives 1 through 4 are compared to potential impacts related to the proposed Project.

Project objectives are listed in Section 2.3, *Project Objectives*, of Chapter 2, *Project Description*, and discussed in detail in Chapter 5, *Alternatives Analysis*.

As detailed in Chapter 5 and based strictly on an analysis of the relative environmental impacts, among the action alternatives evaluated in this EIR (Alternatives 2–4), Alternative 4 (Backfilling to Avoid Surface Expression of South Pit Lake and Small Solar Facility for Supplementation) would be the Environmentally Superior Alternative because it would reduce operational air emissions and long-term hydrological impacts associated with pit lake formation while still attaining most of the Project objectives and avoiding additional significant environmental impacts beyond those associated with the proposed Project. The County and the BLM will consider the entire administrative record, including public comments and testimony, when determining whether to approve the proposed Project, an alternative, or a combination of project elements.

Alternative 4 would provide the greatest reduction in environmental impacts while still attaining most of the Project objectives. Alternative 4 would incorporate a small on-site solar photovoltaic facility designed to supplement electrical power needs for mine operations and would reduce long-term hydrological impacts associated with pit lake formation. The solar facility would reduce reliance on fossil fuel–based power generation and decrease the amount of electricity generated from on-site LNG microturbines and imported grid electricity during daylight hours. By partially offsetting conventional power generation. Alternative 4 would reduce operational emissions of criteria pollutants and GHGs compared to the proposed Project and would also provide a long-term benefit by reducing the potential for pit lake formation and associated water quality concerns. Although the reduction would not be sufficient to eliminate the proposed Project's significant and unavoidable air quality impacts, it would reduce the magnitude of those impacts relative to the proposed Project and the other action alternatives. In addition, reduced reliance on conventional energy sources would result in incremental reductions in energy demand and operational noise associated with turbine operation. Most other aspects of mine operations, including pit expansion, mining rates, mine life, water use, powerline installation, and pipeline construction, would remain largely the same as under the proposed Project. As a result, impacts to most other environmental resource areas would be generally similar to those associated with the proposed Project, and would remain less than significant or less than significant with mitigation, consistent with the analysis presented in Chapter 4.

For comparison, while Alternative 2 (Backfilling to Avoid Surface Expression of the South Pit Lake) would reduce long-term hydrological impacts associated with pit lake formation, it would also extend the operational life of mining activities and increase cumulative emissions due to the additional haulage required for backfilling. Alternative 3 (Small Solar Facility for Supplementation) would reduce operational air emissions while still attaining most of the Project objectives; however, impacts to air emissions would remain significant and unavoidable.

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CHAPTER 1. INTRODUCTION

This chapter of the environmental impact report (EIR) provides an overview of the proposed Castle Mountain Mine Phase II Expansion Project (Project) and the purpose and intended uses of the EIR. It includes a discussion of the organization of the EIR and a description of the environmental and public review process for the proposed Project.

1.1 INTRODUCTION AND PROJECT OVERVIEW

Castle Mountain Venture (the Project Applicant; CMV) proposes the expansion of the existing Castle Mountain Mine (CMM) in the historic Hart Mining District in eastern San Bernardino County, California. The Project Area is located in the Mojave Desert within the historic Hart Mining District of San Bernardino County, California, approximately 100 miles east of Barstow, 60 miles south of Las Vegas, Nevada, traversing the California–Nevada state line. The Project Area, encompassing approximately 4,285 acres, extends across portions of San Bernardino County, California, and Clark County, Nevada, and includes the Mine Area, the mine access road, the proposed water and powerlines, and a 50-foot buffer surrounding the water and powerlines. CMM, also referred to as the Mine Area throughout this EIR, encompasses approximately 3,905 acres and was originally approved by San Bernardino County (County) and the U.S. Bureau of Land Management (BLM) in 1990. The County and BLM later approved the Castle Mountain Mine Phase I expansion in 2020.

The proposed Project, referred to as the Castle Mountain Mine Phase II Expansion Project, represents the second major expansion of CMM since the initial approval of mining operations in 1990. The proposed Project would extend the approved mine life by approximately 30 years, including 20 years of mining and ore processing followed by 10 years of reclamation and closure activities. The proposed Project would increase the authorized annual mining rate from approximately 22 million tons under existing approvals to approximately 80 million tons.

To support expanded operations, the proposed Project would require additional water and power supplies, including up to approximately 2,250 acre-feet per year of groundwater and up to 25 megawatts of electrical power. CMV proposes to construct an underground water pipeline approximately 31.5 miles in length and an overhead power line approximately 16.5 miles in length to meet these demands.

The proposed mine expansion would disturb approximately 1,434 acres within the existing Mine Area (3,905 acres), and the proposed underground water pipeline and 69-kilovolt overhead powerline rights-of-way would disturb approximately 380 acres. Including the 1,474 acres of existing disturbance, the total Project disturbance area is anticipated to be approximately 3,288 acres.

The Project Area includes both private lands owned by CMV and unpatented mining claims located on land administered by the BLM. Utility infrastructure would be constructed primarily within existing rights-of-way and would traverse public lands managed by the BLM Needles Field Office in California and the BLM Las Vegas Field Office in Nevada.

1.2 LEAD AGENCIES AND ENVIRONMENTAL REVIEW AUTHORITY

The County is the Local Lead Agency, and the BLM is the Responsible Agency for the preparation of this EIR. Separately, the BLM is acting as the Federal Lead Agency pursuant to the National Environmental Policy Act (NEPA) and preparing an environmental impact statement (EIS), while the County is acting as

the Local Lead Agency pursuant to the California Environmental Quality Act (CEQA) in the preparation of this EIR.

The County and the BLM have determined that the proposed Project constitutes a discretionary project subject to CEQA, as defined in Public Resources Code Section 21065 and State CEQA Guidelines Section 15378. This EIR has been prepared to evaluate the potential environmental effects associated with the implementation of the proposed Project and to inform discretionary approval decisions by the Lead and Responsible Agencies.

1.3 PURPOSE OF THE EIR

An EIR uses a multidisciplinary approach, applying social and natural sciences to make a qualitative and quantitative analysis of all foreseeable environmental impacts that a project would cause on the proposed Project's surrounding area and environs. This EIR was prepared in accordance with the State CEQA Guidelines, established to comply with the CEQA of 1970, as amended. As stated in State CEQA Guidelines Section 15151:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

This EIR is intended to function as an informational document for use by the County, as the Local Lead Agency; other Responsible and Trustee Agencies; decision-makers; and the public in their consideration of the proposed discretionary actions. This EIR is also intended to promote informed decision-making and public participation by disclosing the environmental consequences of implementing the proposed Project in a manner consistent with CEQA's full disclosure requirements. As described in State CEQA Guidelines Section 15121(a), this EIR is intended to serve as an informational document for public agency decision-makers and the public. In accordance with State CEQA Guidelines Section 15126, this EIR describes the proposed Project and the existing environmental and regulatory setting, identifies environmental impacts associated with Project implementation, identifies mitigation measures for potentially significant impacts, and provides an analysis of alternatives. Thresholds of significance for each environmental resource analyzed in this EIR are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. The thresholds of significance are defined within each impact analysis section. The environmental impact analyses in this EIR are based on a variety of sources, including agency consultation, technical studies, and field surveys. The County and the BLM will consider the information presented in this EIR, public comments received on the Draft EIR, and other factors, prior to approving the proposed Project. The Final EIR will be submitted for consideration and certification to the County prior to approval of the proposed Project.

1.4 SCOPING AND NOTICE OF PREPARATION PROCESS

Pursuant to Section 15082 of the State CEQA Guidelines, the Lead Agency is required to send a Notice of Preparation (NOP), stating that an EIR will be prepared, to the State Office of Planning and Research (now the Office of Land Use and Climate Innovation), Responsible and Trustee Agencies, and federal agencies involved in funding or approving the proposed Project. The NOP must provide sufficient

information for responsible agencies to make a meaningful response. At a minimum, the NOP must include a description of the proposed Project, the location of the proposed Project, and the probable environmental effects of the proposed Project (State CEQA Guidelines Section 15082(a)(1)). Within 30 days after receiving the NOP, Responsible and Trustee Agencies and the State Office of Planning and Research will provide the Lead Agencies with specific details about the scope and content of the environmental information related to that agency's area of statutory responsibility that must be included in the EIR (State CEQA Guidelines Section 15082(b)).

On October 17, 2025, in accordance with State CEQA Guidelines Sections 15063 and 15082, the County published an NOP for the EIR and circulated it to governmental agencies, organizations, and persons who may be interested in the proposed Project, including nearby landowners, homeowners, and tenants. The NOP requested comments on the scope of the EIR, asked interested parties to consider the potential environmental effects of the proposed Project, and invited suggestions for revising the proposed Project to reduce or avoid significant environmental impacts. The NOP provided a general description of the proposed Project, a description of the Project Area, and a preliminary list of potential environmental effects. The 30-day comment period ended on November 20, 2025. The NOP was available for public review on the County's website (https://lus.sbcounty.gov/planning-home-2/environmental/desert-region/) and at the San Bernardino County Land Use Services Department, Planning Division, 385 North Arrowhead Avenue, San Bernardino, California 92415.

One hybrid (in-person and virtual) public scoping meeting was held at 5:00 p.m. on November 5, 2025, to solicit input from interested parties on the scope and content of the EIR and the BLM's EIS that is being prepared for the proposed Project in conformance with California Public Resources Code (PRC) 21083.9 and NEPA. The scoping meeting was held in the Searchlight Community Center in Searchlight, Nevada, at 200 Michael Wendell Way, Searchlight, Nevada 89046.

A summary of written comments received during the NOP comment period, as well as verbal comments recorded at the public scoping meeting, is provided in the Summary section of this EIR.

1.5 CONTENTS

The scope of the EIR includes issues identified by the County and the BLM during the preparation of the NOP for the proposed Project, as well as environmental issues raised by agencies and the general public in response to the NOP and at the scoping meeting. This EIR is organized into the following chapters, sections, and appendices:

Summary. This chapter describes the proposed Project and its objectives, identifies the principal environmental impacts associated with Project implementation, and highlights areas of known controversy and issues to be resolved. The Summary also identifies significant and unavoidable impacts, if any, includes a comparative summary of the alternatives analyzed in the EIR, and provides a tabular overview of environmental impacts, mitigation measures, and levels of significance before and after mitigation. For the purposes of this EIR and the BLM's EIS, mitigation measures will be summarized in tabular form and included as Appendix M.

Chapter 1: Introduction. This chapter includes the purpose of the EIR and procedural information.

Chapter 2: Project Description. This chapter includes information about the Project location, the existing setting, the Project Area history, Project objectives, Project characteristics, and Project construction.

Chapter 3: Environmental Setting. This chapter describes the proposed Project's environmental setting, including existing physical characteristics of the Project Area. This chapter also provides a discussion of the cumulative context considered for the proposed Project, including growth projections and a list of past, present, and reasonably foreseeable future projects in the vicinity of the Project Area.

Chapter 4: Environmental Impacts Analysis. This chapter discusses the environmental setting as it relates to the various resource areas, regulatory settings, thresholds of significance, impact assessment and methodology, Project-specific impacts and mitigation measures, and cumulative impacts. The EIR analyzes the potentially significant impacts to the following resource areas, as identified during the preparation of the NOP:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural and Tribal Cultural Resources
- Energy
- Geology, Soils, and Mineral Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services, Utilities, and Service Systems
- Transportation and Recreation
- Wildfire

Chapter 5: Alternatives Analysis. This chapter summarizes the environmental advantages and disadvantages associated with the proposed Project and alternatives. As required, the "No Project" alternative is included among the alternatives considered, and an "Environmentally Superior Alternative" is identified.

Chapter 6: Other CEQA Considerations. This chapter identifies growth-inducing impacts and a discussion of long-term/short-term productivity and irreversible environmental changes.

Chapter 7: References and Report Preparation. This chapter provides a list of the references cited in the EIR, as well as a list of individuals who contributed to the preparation of the EIR.

Appendices. The appendices contain important information used to support the analyses and conclusions made in the EIR. Among the appendices that are included are technical reports addressing air quality and greenhouse gas emissions, biological resources, tribal resources, historic resources, geology and soils, and noise, and a Mitigation Monitoring and Reporting Program containing all mitigation measures and Applicant-committed mitigation measures.

1.6 AGENCY USE OF THE DOCUMENT

The Lead and Responsible Agency reviewers and decision-makers (i.e., the County Planning Commission and the BLM) will use the EIR as an informational document to assist in the decision-making process, ultimately resulting in approval, denial, or conditions of approval for the proposed Project. The following jurisdictions and agencies may also use this EIR in reviewing and issuing their respective authorizations (if applicable) or making recommendations during the Project review process, or both:

- U.S. Army Corps of Engineers
- U.S. Bureau of Reclamation
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- National Parks Service
- California Department of Conservation
- California Department of Fish and Wildlife
- California Environmental Protection Agency
- California Regional Water Quality Control Board
- Mojave Desert Air Quality Management District

1.7 PROJECT REPRESENTATIVES

Local Lead Agency:
San Bernardino County
Land Use Services Department – Planning Division
385 North Arrowhead Avenue, First Floor
San Bernardino, California 92415-0187
Derek Newland, Planner

Responsible Agency:
Bureau of Land Management – Needles Field Office
U.S. Department of Interior, Region 8
1303 South Highway 95
Needles, California 92363
Rose Pettiette, Geologist

Project Applicant:
Castle Mountain Venture – Equinox Gold Corp.
980 American Pacific Drive, Suite 102
Henderson, Nevada 89014
Aren Hall, Environmental and Permitting Manager

Environmental Consultant:
SWCA Environmental Consultants
320 North Halstead Street, Suite 120
Pasadena, California 91107
Jessica Cleavenger, Senior Environmental Planner

1.8 REVIEW OF THE DRAFT EIR

This Draft EIR was distributed to responsible and trustee agencies, other affected agencies, surrounding cities, interested parties, and all individuals who requested a copy, in accordance with PRC 21092(b)(3). The Notice of Completion and Notice of Availability of the Draft EIR were distributed and posted as required by CEQA. During this circulation period, which begins on April 17, 2026, and closes on May 18, 2026, the EIR and all technical appendices will be available for review on the County's website (https://lus.sbcounty.gov/planning-home/environmental/desert-region/) and at the following locations:

San Bernardino Government Center
Land Use Services – Planning Division
385 North Arrowhead Avenue, 1st Floor
San Bernardino, California 92415-0187

High Desert Government Center
Land Use Services – Planning Division
15900 Smoke Tree Street, Suite 131
Hesperia, California 92345

On behalf of the lead agency, comments on the Draft EIR shall be addressed to:

San Bernardino County Land Use Services Department
Planning Division
Attn: Derek Newland, Planner II
385 North Arrowhead Avenue
San Bernardino, California 92415

Written responses to all significant environmental issues raised will be prepared and included as part of the Final EIR and the administrative record for consideration by decision-makers for the proposed Project.

CHAPTER 2. PROJECT DESCRIPTION

This chapter of the environmental impact report (EIR) describes the proposed Castle Mountain Mine Phase II Expansion Project (Project). The proposed Project involves the second major expansion of Castle Mountain Mine (CMM), including installation of an underground waterline and overhead powerline within existing rights-of-way (ROWs) to support the expanded operations. CMM is an existing open-pit gold mine and heap-leach operation located on a combination of private land, owned by Castle Mountain Venture (CMV; Project Applicant), and public land, administered by the U.S. Bureau of Land Management (BLM) Needles Field Office (NFO) in California and regulated in coordination with San Bernardino County (County).

The proposed Project would extend the mine life by approximately 30 years, with 20 years of mining and ore processing followed by 10 years of reclamation and closure activities. The proposed Project would increase the annual mining rate from 22 million tons to 80 million tons. The increased production rate would require up to 2,250 acre-feet per year of groundwater and up to 25 megawatts (MW) of electrical power. To meet these demands, the Project Applicant proposes to construct a 31.5-mile underground water pipeline and a 16.5-mile overhead electrical transmission line (Figure 2-1). The proposed utilities would be constructed within existing ROWs and would traverse public land managed by the BLM NFO in California and the BLM Las Vegas Field Office (LVFO) in Nevada. The proposed Project would disturb a total of approximately 3,288 acres, including 1,474 acres of existing disturbance from previously approved development, 1,434 acres of proposed disturbance for the mine expansion, and 380 acres of disturbance associated with the proposed underground water pipeline and 16.5-mile-long, 69-kilovolt (kV) overhead powerline ROWs.

The CMM Access Road was approved under the mine's original BLM Plan of Operations (CACA-031137) in 1990, as documented in the *Record of Decision for the Castle Mountain Mine Project Environmental Impact Statement* (EIS No. 890053; State Clearinghouse No. 88062708) (1990 Plan) (BLM 1990a). When the California Desert Protection Act of 1994 established the Mojave National Preserve, approximately 1,000 feet of the mine's approved access road alignment and proposed utility corridor were included within the Mojave National Preserve boundary. CMV has proposed an alternative alignment that avoids the Mojave National Preserve but would disturb approximately five acres of BLM-managed land.

The proposed Project includes:

- Construction and operation of a 31.5-mile underground water pipeline within a proposed BLM ROW.
- Construction and operation of a 16.5-mile long, 69-kV overhead powerline within a proposed BLM ROW.
- Increasing the total land disturbance by an additional 1,814 acres.
- Increasing mining by an additional 296 million tons.
- Increasing overburden stockpiling by an additional 196 million tons.
- Increasing crushing rate from six million to 19 million tons per year.
- Increasing the maximum rate of mining by an additional 62 million tons per year.
- Increasing groundwater use from 625 to 2,250 acre-feet per year, an additional 1,625 acre-feet per year.
- Expanding and deepening open pits to greater than 400 feet below the water table.
- Providing up to 500 temporary and 400 permanent jobs.

- Creating an open pit lake that would remain a permanent land feature.
- Extending the mine life to 2060.

This chapter describes the characteristics, location, and objectives of the proposed Project, and provides detailed information on the construction and operational activities associated with its development, as well as the discretionary approvals required.

2.1 PROJECT LOCATION

CMM is in the Mojave Desert in the historic Hart Mining District of San Bernardino County, California, approximately 100 miles east of the city of Barstow, California; 60 miles south of the city of Las Vegas, Nevada; and 40 miles northwest of the BLM NFO (see Figure 2-1). The Project Area, which includes the Mine Area, the mine access road, the proposed underground water pipeline and overhead electrical powerline, and a 50-foot buffer surrounding the water pipeline and powerline, encompasses approximately 4,285 acres and extends across portions of San Bernardino County, California, and Clark County, Nevada, as shown below in Table 2-1 and Figure 2-1. The Project Area occupies private land owned by CMV and unpatented mining claims on BLM-administered land.

Table 2-1. Project Area

Area	Acres
Mine Area	3,905
ROWs	380
Project Area	**4,285**

As shown below in Table 2-2, the proposed Project would disturb approximately 3,288 acres, including 1,474 acres of existing disturbance from previously approved development, 1,434 acres of proposed disturbance related to mining operations, and 380 acres of proposed disturbance associated with the underground water pipeline and 16.5-mile-long, 69-kV overhead powerline ROWs.

Table 2-2. Existing and Proposed Disturbance

Mine Phase	Acres
Existing Disturbance	1,474
Proposed Disturbance	1,434
ROWs	380
Total	**3,288**

Note: Acreages calculated using geographic information system (GIS) data may differ from those reported in on-the-ground plans due to differences in mapping methods and data resolution.

The portion of the proposed Project analyzed within this EIR includes the 3,905-acre Mine Area and the disturbance area proposed for the underground water pipeline and powerline located outside of the Mine Area, but within San Bernardino County. The ROWs would consist of a 31.5-mile-long underground water pipeline and a 16.5-mile-long overhead powerline that would extend from the Mine Area to Walking Box Ranch in Nevada, with the water pipeline continuing to follow State Route (SR-) 164 to Nipton, California. The proposed underground water pipeline and overhead powerline would cross public lands, requiring the BLM ROW authorizations from the BLM NFO.

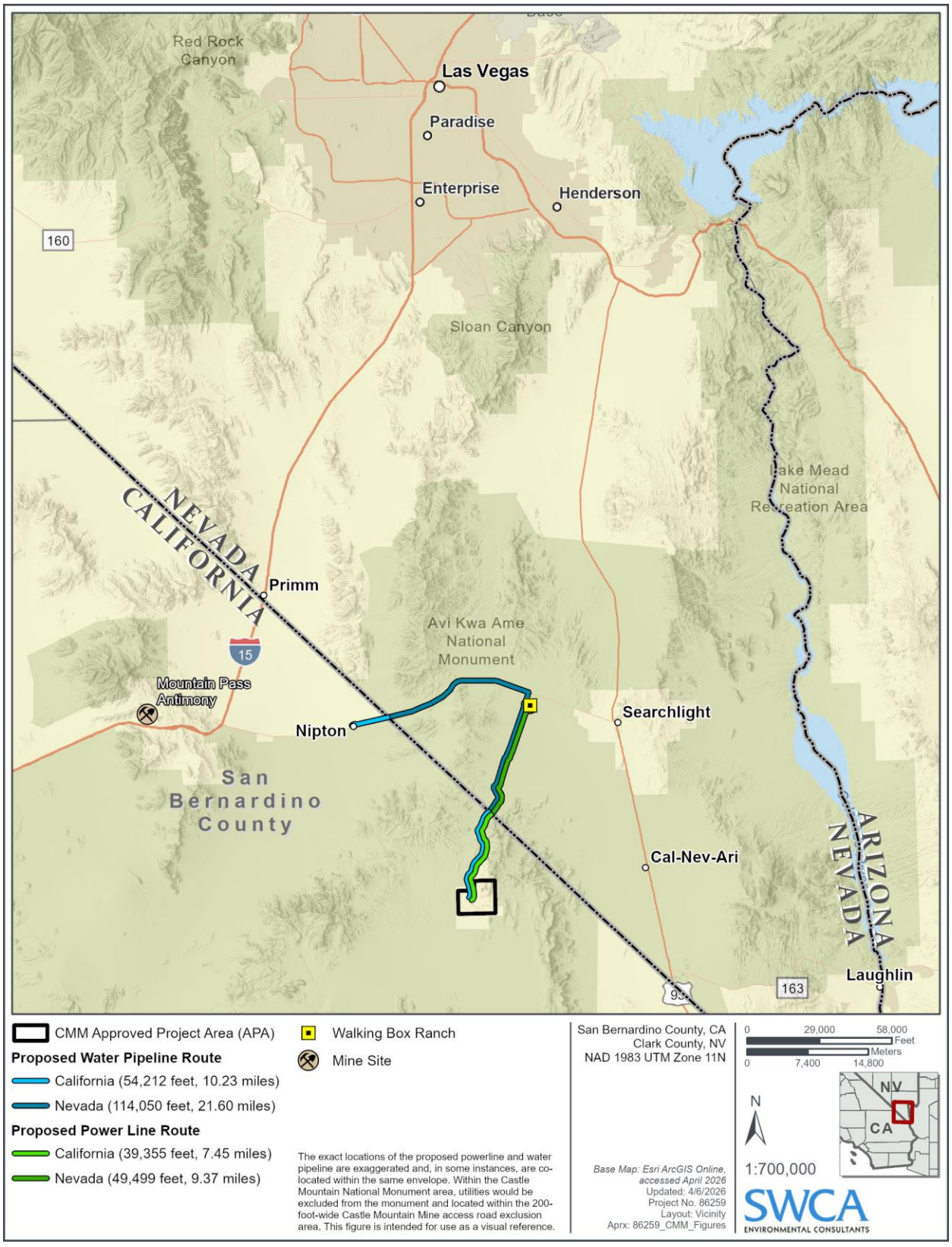


Figure 2-1. Project Vicinity Map

Primary regional access to the Mine Area is provided by Walking Box Ranch Road, which intersects Nevada State Route 164 approximately seven miles northwest of the town of Searchlight, Nevada, and approximately 14 miles east of the community of Nipton, California. Walking Box Ranch Road runs in a southwestern direction approximately 17 miles from the intersection of Nevada State Route 164 and terminates at CMM. Land elevations at the Project Area range from 4,100 to 5,100 feet above mean sea level.

2.2 EXISTING CONDITIONS

2.2.1 Environmental Setting

The Project Area, including the Mine Area, mine access road, proposed water pipeline and powerline, and 50-foot buffer surrounding the water pipeline and powerline, covers approximately 4,285 acres, including roughly 252 acres of private vested lands historically mined prior to modern regulatory ordinances and the Surface Mining and Reclamation Act of 1975 (SMARA). Located within the historic Hart Mining District, the Mine Area has supported continuous mining activity since the early twentieth century. The existing mining operation received approvals in the fall of 1990, which commenced construction on the open pit, heap leach mining operation. Preproduction mining in the first open pit began in June 1991, and the first gold production occurred in February 1992. By 2011, the majority of the mining and interim reclamation operations were completed. The remaining mining and reclamation operations remained idle until 2020.

Historically, from 1988 to 2004, the mining operation provided its own water, sewerage, sanitation services, trash disposal, and access road construction and maintenance. The mine received electrical power from Nevada Power Company until the service line was removed during interim land reclamation activities in 2011. Ancillary structures are distributed throughout the Mine Area, which were originally approved in the *Record of Decision for the Castle Mountain Mine Expansion Project* (EIS No. DES 97-10/State Clearinghouse No. 95081031) (1998 Plan) (BLM 1998); however, many of the facilities have since been relocated to accommodate the expanded pits and overburden piles proposed under the *Environmental Assessment, Castle Mountain Mine, Modification of Castle Mountain Mine Plan of Operations* (DOI-BLM-CA-D090-2020-002-EA) (2020 EA) (BLM 2020). The facilities have been furnished with water, heat, and sewerage to conform to the County Building and Safety Department and County Department of Environmental Health Services (DEHS) requirements.

The Project Area lies within the San Bernardino Base Line and Meridian of the U.S. Geological Survey (USGS) Castle Peaks, Crescent Peak, Hart Peak, Nipton, California, 7.5-minute quadrangles and Mount Diablo Base Line and Meridian of the USGS McCullough Mountain, Highland Spring, Hopps Well, Nevada, 7.5-minute quadrangles in San Bernardino, California, and Clark County, Nevada (USGS 2026).

Public access is restricted by fencing and gates to protect both public safety and wildlife. Wildlife species that are typical of the desert ecosystem are present throughout the Project Area. Vegetation at the Project Area is representative of the eastern Mojave Desert, dominated by blackbrush (*Coleogyne ramosissima*) scrub with scattered eastern Joshua tree (*Yucca jaegeriana*) woodland habitats.

2.2.2 Land Use and Zoning

CMM is owned and operated by CMV, which is a California General Partnership between Viceroy Gold Corporation (Viceroy) and Telegraph Gold Inc. The combined land holdings at CMM by CMV and Viceroy are estimated to encompass approximately 12,000 acres; however, the total acreage is approximate due to the potential for overlapping mining claims, which may affect the accuracy of the

calculation. Of the total land holdings, CMV owns approximately 1,298 acres of private land, which are distinct from possessory-in-interest properties, such as unpatented mining claims or mill sites.

The private lands are further classified as either vested or non-vested. "Vested" private lands are those that have been historically mined prior to the enactment of either (i) local ordinances requiring a use permit for surface mining, or (ii) SMARA, which mandates a use permit and reclamation plan for surface mining activities. CMM is located within the historic Hart Mining District, an area subject to continuous mining operations since the early twentieth century. At the Mine Area, the County has historically recognized vested rights, as evidenced by the issuance and approval of a Certificate of Land Use Compliance (CLUC) in February 2022 for 718 acres of land within the 1998 Plan Approved Plan Area (APA). A majority of the vested land is situated within the anticipated disturbance area identified in the 2025 *Castle Mountain Mine – Mine Plan of Operation and Reclamation Plan Amendment* (2022 Plan) (CACA031137) (CMV 2025a).

CMV retains mineral rights to approximately 1,226 unpatented lode mine claims, placer mine claims, and mill sites. Collectively, these claims constitute possessory-in-interest land holdings totaling approximately 12,000 acres. Unpatented mining claims are maintained annually by submitting the required claim maintenance fee to the BLM prior to September 1, followed by recording a Notice of Intent to Hold affidavit with the County.

Within San Bernardino County, the Mine Area has a designated land use of Resource/Land Management (RLM) and is zoned for Resource Conservation (RC) (County of San Bernardino 2020). The surrounding lands predominantly have an Open Space (OS) land use designation and are similarly zoned as RC. The town of Nipton, California, where the Project easement originates, is designated as Rural Living (RL) and zoned as Special Development-Residential (SD-RES). North of Nipton Road, the land use designation is RLM, while south of Nipton Road, it is OS. An aerial map showing the land use and zoning designations of the Project Area and adjacent areas is provided in Figure 2-2.

2.3 PROJECT OBJECTIVES

The primary objectives of the proposed Project include the following:

1. **Continue Mining Operations:** Continue gold (and silver) mining and processing activities within the previously approved Castle Mountain Mine Project Area.
2. **Expand Mineral Resource Recovery:** Extract additional economically recoverable mineral resources identified through prior exploration programs within and adjacent to previously approved mining areas.
3. **Modify and Expand Existing Mining Facilities:** Modify, upgrade, and expand existing mining and processing facilities, including ore processing, material handling, heap leach operations, and support infrastructure, to accommodate increased operational capacity.
4. **Increase Operational Capacity Within the Approved Mine Area:** Increase the rate and scale of mining and processing activities within the approved mine area to support efficient resource extraction.
5. **Provide and Upgrade Utility Infrastructure:** Develop, reestablish, or upgrade utility infrastructure—including electrical and water supply systems—necessary to support ongoing mining and processing operations by spreading responsible water extraction across multiple basins to reduce basin-specific effects, including installation of a buried water pipeline from the Nipton, California, area, following approximately 32 miles of existing roads to the mine.

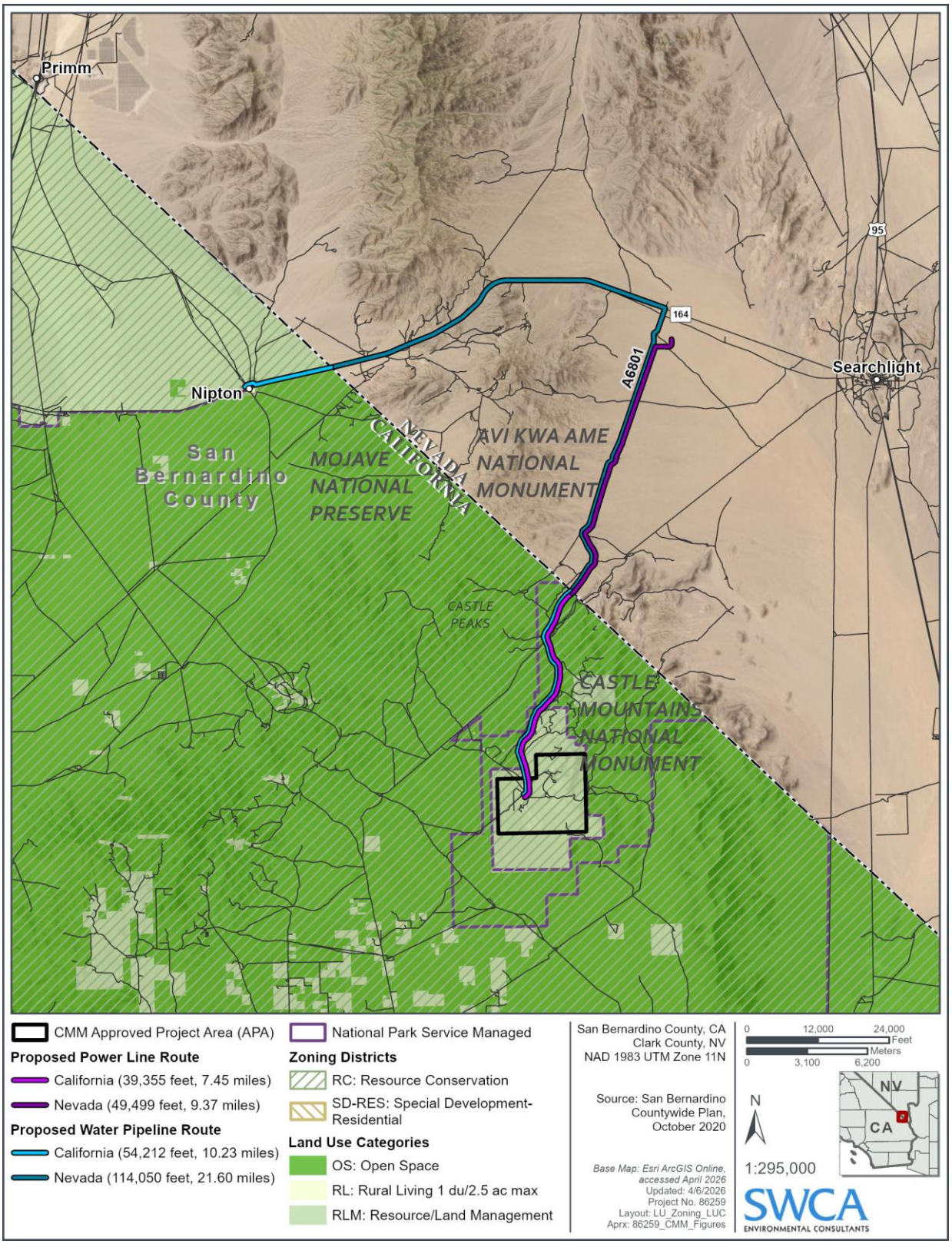


Figure 2-2. Land Use and Zoning Designations

6. **Extend the Operational Life of the Mine:** Extend the duration of mining, processing, and reclamation activities beyond previously approved timelines by 30 years (to approximately 2060) to allow for continued recovery of identified mineral resources.
7. **Minimize Environmental Impacts to the Extent Feasible:** Design and operate the project to avoid, minimize, and, where feasible, reduce environmental impacts in a manner consistent with applicable land use plans and regulatory requirements. This includes reducing air emissions associated with the current diesel-fueled on-site power generation by coordinating with BLM to reinstall the former 69-kilovolt (kV) overhead power line from the Walking Box Ranch area to the mine.
8. **Promote Efficient Use of Previously Disturbed Areas:** Prioritize the use and expansion of previously disturbed mining areas to the extent feasible, consistent with land use and resource conservation policies.
9. **Ensure Consistency with Applicable Plans and Regulations:** Design and operate the Project in a manner consistent with applicable federal, State, and local laws, regulations, and land use plans, including the San Bernardino Countywide Plan.
10. **Support Regional Economic Activity:** Provide employment opportunities and contribute to the regional economy through continued mining operations, including the addition of approximately 400 new jobs to the local workforce, thereby offering stable employment for area residents and helping to reduce local unemployment.

2.4 PROJECT COMPONENTS

The proposed Project would result in several modifications to the existing CMM mining authorizations approved by the BLM and County to increase the authorized mining quantity and rate, as well as extend the approved mine life to approximately 30 years. The proposed Project includes expansion of the identified mine pits, overburden storage areas, and heap leach pad, as well as construction of the 31.5-mile Ivanpah Water Pipeline and a 16.5-mile, 69-kV electrical transmission line to support expanded mining operations (Figure 2-3). The proposed Project would also include modifications to on-site power generation facilities and relocation of select infrastructure components. Additional details on the Project components are provided in the following sections.

As described in more detail below, the proposed Project would include the following improvements:

- Expansion of mine pits, overburden storage areas, and heap leach pad;
- Increased mining quantity and rate;
- Increased mine life;
- Increased groundwater use;
- Construction of the 31.5-mile underground Ivanpah Water Pipeline to facilitate the use of water from the Ivanpah Valley Groundwater Basin (Ivanpah Basin);
- Construction of a 16.5-mile-long, 69-kV overhead power line;
- Transition to liquified natural gas (LNG) turbines for on-site power generation;
- Relocation of select facilities;
- Modifications of access road use and maintenance; and
- Reclamation.

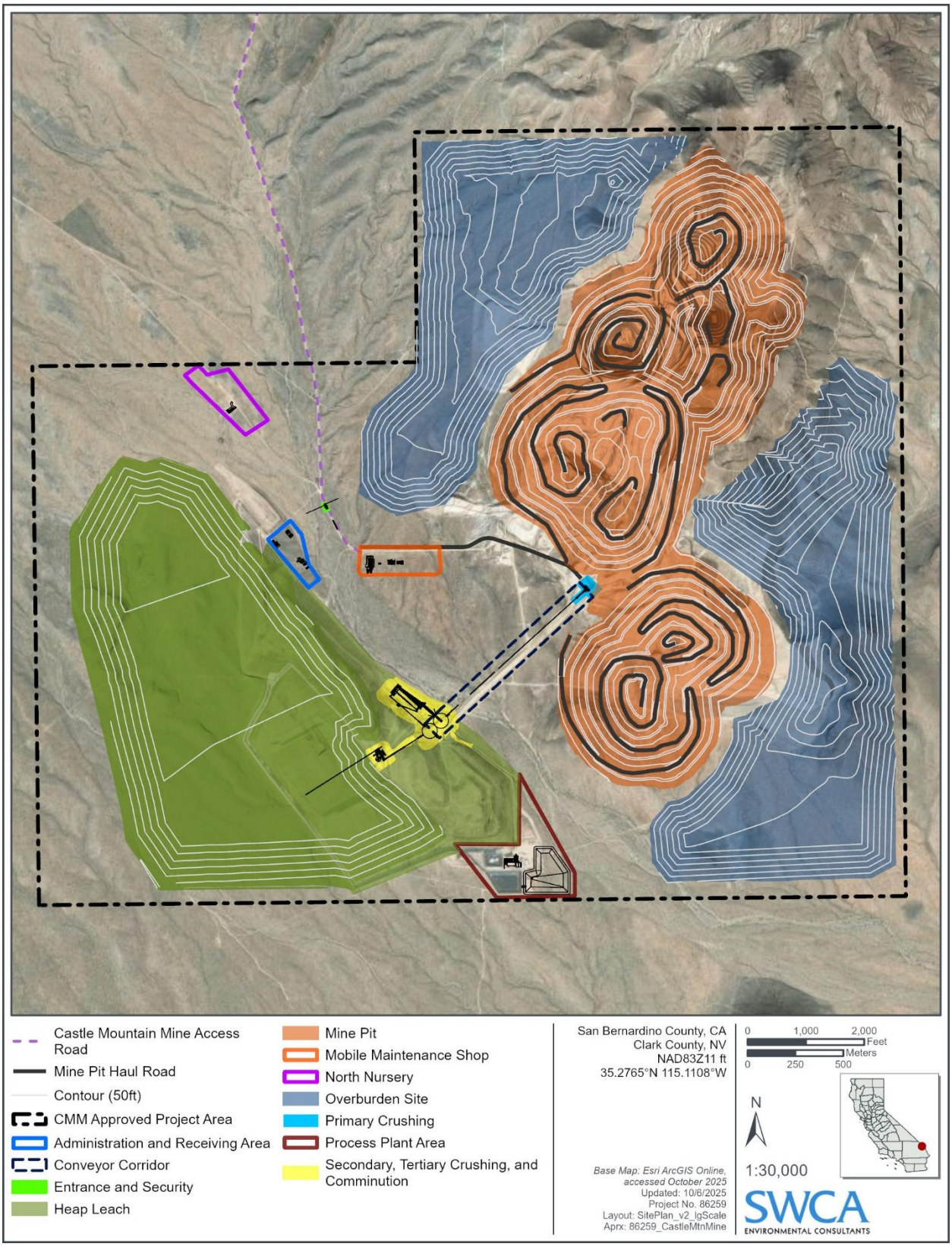


Figure 2-3. Proposed Site Plan

2.4.1 Mine Expansion

2.4.1.1 Mine Pits, Overburden Sites, and Heap Leach Pad

The proposed Project would expand mining operations at CMM through the lateral and vertical expansion of the Jumbo South Lesley Anne (JSLA), Jumbo, Oro Belle, and South Extension open pits adjacent to and surrounding ore deposits previously authorized under the 1990 Plan and 1998 Plan. Mining would continue at the JSLA, Jumbo, and Oro Belle pits, with each pit extending outward and deepening to access additional ore reserves. The South Extension pit, which was approved for mining under the 1998 Plan, would expand both east and west before merging with the JSLA pit and would also extend southward along a defined ore zone. This expansion would result in two intra-pit excavations with additional east and west components. Excavations would extend to depths exceeding 400 feet below the groundwater table.

The proposed pit expansions would result in approximately 194.77 acres of additional land disturbance within the previously approved Mine Area, including approximately 160.34 acres on public lands, 34.36 acres on private lands with a post-Federal Land Policy and Management Act (FLPMA) patent, and 0.07 acre on private lands with a historic patent. In comparison, the 1998 Plan authorized approximately 307 acres of pit disturbance with a maximum depth of approximately 600 feet below ground surface (bgs). Under the proposed Project, the total pit area would increase to approximately 839 acres, with a maximum depth of approximately 1,200 feet bgs.

The 1998 Plan authorized mine pits, overburden storage areas, and a heap leach pad to accommodate a total of approximately 71 million tons of ore and 223 million tons of overburden. Under the proposed Project, the heap leach pad would be expanded to accommodate a total of up to approximately 332 million tons of ore, and overburden storage capacity would be expanded to accommodate a total of approximately 352 million tons of waste rock. The proposed Project includes modifications to the sequence and extent of mining at existing deposits, with an emphasis on pit backfilling to improve operational efficiency, reduce long-term environmental impacts, and facilitate effective reclamation. Expanded mine facilities and infrastructure are designed to optimize material handling while minimizing environmental effects. Key components of the proposed Project include:

- **Expanded Mine Pits and Overburden (Waste Rock) Storage Areas:** Located in proximity to ore bodies to reduce haul distances, fuel consumption, and emissions from diesel-powered equipment.
- **Primary Crushing Facilities and Overland Conveyors:** Crushing plants would be sited near pit areas, with extensive use of overland conveyors to reduce truck haulage and associated air emissions.
- **Overburden Storage Facilities:** Designed to approximate natural landforms to support long-term stability and simplify final reclamation.
- **Heap Leach Pads and Comminution Plant:** Located on gentle slopes to maximize gravity flow, minimize grading requirements, and reduce potential impacts to natural drainage patterns and floodplains.

The expanded operations are intended to increase resource recovery while incorporating design features and operational practices that limit environmental effects related to land disturbance, haulage, air emissions, and reclamation, consistent with California Environmental Quality Act (CEQA) requirements.

2.4.1.2 Increased Mining Quantity and Rate

Both the total quantity and annual rate of ore and overburden mined at CMM would substantially increase under the proposed Project relative to currently approved operations. Over the life of the proposed Project, approximately 332 million tons of ore and 738 million tons of overburden (waste rock) would be mined, representing increases of approximately 324 million tons of ore and 603 million tons of overburden beyond previously authorized quantities. Of the total overburden produced, approximately 400 million tons would be backfilled into northern pits, and approximately 338 million tons would be placed in overburden storage facilities.

The proposed Project includes a maximum annual mining rate of up to 80 million tons per year, consisting of approximately 19 million tons of ore and 61 million tons of overburden. This represents an increase of approximately 13 million tons of ore and 45 million tons of overburden per year above previously approved rates. Average annual mining rates would increase from approximately 22 million tons per year to approximately 58 million tons per year, with annual production fluctuating based on ore grade, gold recovery, and geotechnical conditions.

The increased mining rates would not alter the approved methods of ore extraction or processing. Mining and processing would continue to include open-pit mining, blasting, primary crushing, overland conveyors, comminution and agglomeration, heap leaching, gold recovery and refining, and groundwater extraction.

2.4.1.3 Increased Mine Life

Under currently authorized operations, mining, processing, and reclamation activities at CMM are projected to conclude by 2035. Approval of the proposed Project would include a total extension of approximately 30 years, including an additional 20 years for mining and processing operations and 10 years for final reclamation and environmental monitoring.

The extension of the mine life under the proposed Project is necessary to fully extract and process remaining ore reserves within the expanded pits and overburden storage areas, particularly given the proposed increases in total mining quantity and annual mining rates.

2.4.1.4 Relocation of Select Facilities

Under the proposed Project, the majority of the existing CMM facility locations would remain in their current positions. However, select facilities would be relocated to accommodate expanded mine pits, overburden storage areas, and the heap leach pad while maintaining compliance with operational and safety requirements. All relocated facilities would be sited a minimum of 1,500 feet from active pit boundaries to meet blasting safety standards.

Key facility relocations include the following:

- The main security gate, truck scale, parking areas, and administration offices would be moved approximately 0.5 mile west along the CMM Access Road. This relocation minimizes impacts to sensitive vegetation communities and preserves public access along Hart Mine Road.
- Mine fleet maintenance facilities would be relocated to the west, accompanied by widening of the CMM Access Road to support expanded haul operations.

Additional modifications include the following:

- Establishment of new growth media stockpile locations to support reclamation activities.
- Installation of expanded perimeter security and desert tortoise fencing to protect sensitive wildlife resources.
- Realignment of New York Mountain Road along the western boundary of the expanded heap leach pad to maintain safe and continuous public access.

All facility relocations and associated infrastructure modifications would occur entirely within the existing approved mine plan boundary. These modifications are designed to optimize operational efficiency while minimizing environmental effects, including impacts to vegetation, wildlife, soils, and public access, consistent with mitigation measures identified in the *Ivanpah Underground Water and 69 kV Overhead Power Line Rights of Way Project: Plan of Development* (POD) (CACA106271570, CACA106745083, CACA106240208, CACA106745084, NVNV105863748, and NVNV106239219) (CMV 2025b).

2.4.1.5 Groundwater Use and Mine Pit Dewatering

The proposed Project includes modifications and expansion of on-site water supply infrastructure at CMM and off-site water supply infrastructure to accommodate increased operational demands associated with the proposed Project, including heap leach processing, dust control, and other essential mine activities. Currently, CMM relies on three groundwater wells in the West Well Field (WWF) and three pit dewatering wells in the East Well Field (EWF) to meet existing water needs.

To support increased mining and processing rates for the proposed Project, the proposed Project would include the expansion of the EWF within the Lanfair Valley Groundwater Basin by installing up to seven additional pit dewatering wells. In addition, a new Northwest Water System (NWS) would be developed in the Ivanpah Basin to provide supplemental water supplies. The NWS is anticipated to supply between approximately 840 and 1,340 acre-feet per year, depending on operational need and yield from the Lanfair and Ivanpah Basins. Combined water use from the Lanfair and Ivanpah Basins would range from 830 to 1,340 acre-feet per year from each source, with a combined annual permitted maximum water use of 2,250 acre-feet.

Implementation of the proposed Project would result in an incremental increase in groundwater use of up to 1,625 acre-feet per year relative to currently authorized operations. These expanded water supply systems are designed to support higher mining rates and associated operational requirements while complying with applicable water rights and permitting conditions.

2.4.2 CMM Access

2.4.2.1 Access Authorization

Section 2348 of the General Mining Law of 1872 (Mining Law) grants a preference-right of entry to mines opened and improved on public land; therefore, a formal ROW grant would not be required for access to CMM. In addition to the rights granted under the Mining Law, road access and maintenance for CMM were formally authorized through the 1990 Plan. The 1990 Plan identified two primary entry routes: one from the west via Ivanpah and Hart Mine Roads and one from the north along the historic Barnwell to Searchlight Railroad grade. Both routes were evaluated in the 1989 Castle Mountain Mine Draft EIS/EIR for the CMM project. The *Environmental Impact Statement/Environmental Impact Report for the Castle Mountain Mine Project* (EIS No. 890053/State Clearinghouse No. 88062708) (1990 EIS/EIR) introduced an environmentally preferred third alternative, utilizing existing historic road

segments, including portions of the current main access road from YKL Ranch (now known as Walking Box Ranch) (BLM 1990b). The route, designated as the CMM Mitigated Access Route (CMM Access Road) in the National Environmental Policy Act (NEPA) analysis, is now also commonly referred to as Walking Box Ranch Road and serves as the access route to CMM.

2.4.2.2 Access Road Use and Maintenance

The proposed Project would continue to utilize the existing CMM Access Road, commonly referred to as Walking Box Ranch Road, for routine site access and mine operations. Walking Box Ranch Road extends approximately 18 miles and provides the primary connection between Walking Box Ranch and the CMM site. No new ROW authorization from the BLM is required for Walking Box Ranch Road, as its use and maintenance are already authorized under the Mining Law and the approved 1990 Plan. Inclusion of Walking Box Ranch Road in the proposed Project and POD is intended to document historic and ongoing use, clarify the scope of authorized maintenance activities, and provide environmental context for continued operations.

Both routine and nonroutine maintenance activities would occur within the existing road footprint and would not result in roadway widening or expansion of surface disturbance. Routine maintenance activities would include grading to repair potholes and washboarding, reestablishing roadway definition, application of aggregate using side- or end-dump trucks, preparation and compaction of aggregate with water trucks and vibratory rollers, and application of dust suppressants. Widening beyond the established road width would be prohibited. Dust suppression would continue to utilize approved, non-toxic products.

Nonroutine maintenance activities would occur infrequently, generally on a multi-year basis, and could include repair or replacement of existing culverts at ephemeral drainage crossings to maintain roadway integrity and drainage function. All maintenance activities would be conducted in accordance with applicable environmental protection measures and best management practices.

Walking Box Ranch Road consists of established segments previously analyzed and permitted through prior NEPA reviews. CMV would remain responsible for maintaining the road to ensure safe and reliable access for mine operations, personnel, and emergency response. Additional details regarding access road standards, maintenance responsibilities, and operational use are provided in the POD (CMV 2025b).

2.4.3 Utility Improvements

2.4.3.1 Ivanpah Water Pipeline

Under the proposed Project, CMV would construct, operate, and maintain an approximately 31.5-mile-long underground water line to convey groundwater from private wells in the Ivanpah Basin to CMM. The pipeline would cross San Bernardino County and Clark County, traversing approximately 31 miles of BLM-administered lands and 0.5 mile of private lands. The proposed alignment generally parallels existing transportation corridors, including the CMM Access Road and Nevada State Route 164, and avoids entry into the Mojave National Preserve. The water pipeline would terminate within the approved CMM mine boundary.

Construction would involve trench excavation up to approximately six feet deep and 30 inches wide, installation of 10-inch-diameter steel and high-density polyethylene (HDPE) pipe, and backfilling with restoration of topsoil and vegetation in accordance with BLM requirements. A 10-foot-wide unimproved maintenance road would be established above the buried water pipeline to provide access for inspection and routine maintenance throughout the operational life of the proposed Project.

CMV is requesting both short-term and long-term ROWs from the BLM to support the construction and operation of the water pipeline on public lands. The short-term ROW and disturbance area in San Bernardino County would be approximately 45 feet wide, encompassing approximately 57 acres, and used for construction access and staging for an estimated two-year construction period. The long-term ROW would be approximately 20 feet wide, encompassing approximately 25 acres, and maintained for operation, maintenance, and final reclamation for a term of approximately 30 years. During Project construction, the combined ROW width would total approximately 65 feet, after which the short-term ROW would be relinquished and reclaimed.

Reclamation of the water pipeline would occur in two phases. Short-term reclamation would restore construction-disturbed areas immediately following construction, including staging and access areas. Long-term reclamation would occur upon facility closure and include draining the pipeline, sealing both ends, reburying the line in place using standard industry methods, removing any surface infrastructure, and reclaiming disturbed areas to approximate preconstruction conditions.

Implementation of the Ivanpah Water Pipeline would result in temporary and long-term ground disturbance within the ROW, with the potential to affect soils, vegetation, biological resources, and cultural resources. Avoidance measures, best management practices, and reclamation requirements described in the POD are intended to minimize impacts and ensure compliance with applicable environmental standards. Additional details regarding construction methods, ROW configuration, and reclamation are provided in Chapter 6 of the POD (CMV 2025b).

2.4.3.2 69-kV Powerline

Under the proposed Project, CMV would reestablish a 69-kV overhead powerline to provide grid-supplied electricity to CMM. The proposed powerline would extend approximately 16.5 miles across BLM-administered lands in San Bernardino County (approximately 7.2 miles) and Clark County (approximately 9.3 miles). The alignment generally follows the route of a previously authorized, removed, and reclaimed overhead powerline and would terminate within the approved CMM mine boundary near the proposed electrical substation.

CMV is requesting a long-term BLM ROW approximately 100 feet wide for the full length of the powerline. The long-term ROW would encompass 90 acres and the short-term ROW would encompass approximately 42 acres. Acreage estimates are based on measurements derived from available geographic information system (GIS) data and may differ from those reported in on-the-ground plans due to differences in mapping methods, data resolution, and potential overlapping of the ROWs. The ROW would generally coincide with the existing Walking Box Ranch Road, traversing both sides of the access road where necessary. The requested ROW term is approximately 30 years, covering operation, maintenance, and final reclamation.

The powerline would consist of approximately 272 wood single-pole structures spaced approximately 300 feet apart, with pole heights ranging from approximately 52 to 70 feet. Each pole would require a disturbance area of approximately 10 × 10 feet. Construction would involve augering or backhoe excavation for pole installation, and all facilities would be designed and constructed in compliance with National Electrical Safety Code (NESC) standards. Aluminum conductors and shield wires would be installed, with a minimum clearance of approximately 22 feet above ground.

Reclamation and facility closure would be conducted in accordance with the POD (CMV 2025b). Closure activities would include removal and recycling of overhead conductors, cutting poles at or near ground level, removal of ancillary surface equipment, and reclamation of disturbed areas to approximate preconstruction conditions.

Implementation of the overhead powerline would result in temporary and long-term ground disturbance within the ROW, with the potential to affect soils, vegetation, biological resources, and cultural resources. Applicable mitigation measures, best management practices, and reclamation requirements identified in the POD are intended to minimize environmental impacts and restore disturbed areas following construction and at facility closure.

2.4.4 Transition to Liquefied Natural Gas Turbine On-site Power Generation

Under the proposed Project, CMM would require an average electrical load of approximately 20 MW, with peak demand reaching up to 25 MW. Current capacity from the NV Energy utility grid is limited to approximately 10 MW, and the schedule for future grid upgrades remains uncertain. To meet the increased energy demand, the proposed Project includes transitioning from existing diesel fuel-powered generators to more efficient LNG microturbines, with most existing generators decommissioned or retained solely for emergency backup.

Thirteen compact LNG microturbine units, each approximately 30 feet in length, would provide approximately 10 MW of on-site generation. LNG would be delivered via truck (approximately three truckloads per day) and stored in aboveground tanks located adjacent to the turbines. The microturbines and associated storage tanks would be sited entirely within previously disturbed areas near the relocated mine administration offices and parts warehouse, thereby avoiding new land disturbance.

Implementation of the LNG microturbine system would increase operational efficiency and reduce reliance on the electrical grid. Potential environmental effects associated with the system include air emissions from LNG combustion, truck traffic emissions and dust, and minor noise associated with turbine operation. These effects would be managed in accordance with applicable federal, state, and local regulations.

2.4.5 Reclamation

Since initial approval in 1990, reclamation practices at CMM have evolved in response to modifications in mine design, ore reserves, and regulatory requirements. The 2022 Plan (CMV 2025a) builds upon the methods established in the 1990 and 1998 Plans, incorporating updates to support the expanded mining activities and increased land disturbance proposed under the proposed Project.

The primary change under the proposed Project is the substantially larger volume of ore and overburden to be mined, which results in expanded pit footprints and stockpile boundaries, and consequently a greater area requiring reclamation. Reclamation under the proposed Project continues to emphasize pit backfilling to maximize reclaimed surface area and enhance long-term landform stability. The Project Applicant has committed to implementing specific measures relevant to the 2022 Plan and POD to prevent unnecessary or undue degradation during the life of the proposed Project. These practices are grounded in the general requirements established by the FLPMA and the General Mining Act of 1872 (30 United States Code 22–54) and are further informed by a range of agency guidance documents. The full list of applicant-committed environmental protection measures is provided in Appendix E, including, but not limited to, measures related to Project design features during reclamation (e.g., REC-27, REC-29, REC-30). Updated engineering analyses, adaptive management strategies, and best practice reclamation techniques are incorporated to ensure stability, safety, and environmental compliance.

Under the revised mining sequence, the South Extension pit would be mined last and would receive only limited backfilling; the majority of the pit would remain open following mining operations. This adjustment balances operational efficiency, safety considerations, and reclamation objectives.

Overall, the Reclamation Plan expands the scope, flexibility, and adaptive management provisions for reclamation, addressing the increased scale of mining, enhanced environmental protection standards, and long-term site management requirements. Reclamation activities include contouring and grading of overburden and backfilled areas, placement of growth media for revegetation, installation of erosion control measures, and ongoing monitoring to ensure achievement of performance standards. When mining has completed and ore stockpiles have been processed, facilities will be decommissioned, and structures and equipment will be disassembled for salvage and removal. Unnecessary roads will be reclaimed, and final revegetation will commence per the approved Reclamation Plan.

2.4.6 Construction

Construction of the proposed Project would be scheduled following the approval but likely beginning in 2027. Construction activities will include bulldozing, scraping and grading activities, worker and vendor travel to and from the Project Area, and off-road equipment use. Construction activities carried out by CMV, including their contractors, would occur within the authorized limits of the ROWs. The proposed Project would require up to an estimate of five temporary staging areas for equipment storage and staging. The temporary staging areas would be located within the authorized limits of the ROWs between CMM and the community of Nipton, California. CMV would coordinate with the BLM to ensure that construction staging activities remain within approved disturbance footprints. Following completion of construction, staging areas located on public lands would be reclaimed in accordance with the Project's reclamation plan.

Construction of the water pipeline is anticipated to be completed over an 18-month period, while construction of the powerline is anticipated to occur over a one-year period. Water pipeline construction within short-term ROWs, encompassing 51.2 acres of public land and 1.7 acres of private land, would be reclaimed immediately following the completion of construction. Water pipeline construction within the long-term ROWs would encompass 22.7 acres and 0.8 acre of public and private land, respectively. Powerline construction within short-term ROWs would require 2.6 acres of disturbance on public land, which would be reclaimed immediately following construction completion. The construction of the powerline would also require 0.4 acre of disturbance to public land.

2.4.7 Operation

Operations would effectively quadruple the annual mining rate from 22 million to 80 million tons. The proposed Project would use vanpooling to bring in up to 175 employees onto the site daily via five vans/buses. Employees would be bused in from Henderson, Bullhead City/Laughlin, and Las Vegas, Nevada.

2.5 INTENDED USES OF THIS EIR

An EIR is a public document used by lead agencies to analyze the environmental effects of a project and to disclose possible ways to reduce or avoid significant environmental impacts, including through mitigation measures and/or alternatives to the proposed Project. As an informational document, an EIR does not make recommendations for or against approving a project. The main purpose of an EIR, as described in State CEQA Guidelines Section 15121, is to inform public agency decision-makers and the public about potential environmental impacts of a project. This EIR will be used by the County, as the Local Lead Agency, and the BLM, as the Responsible Agency, under CEQA, in making decisions with regard to the approval of the proposed Project described above and the related approvals described below.

2.5.1 Discretionary and Ministerial Actions

The County, as the Local Lead Agency, has the responsibility of reviewing, processing, and approving the proposed Project. If development is proposed that would result in environmental impacts not assumed or analyzed within this EIR, or if substantial changes to the circumstances under which the proposed Project is undertaken occur, the County will evaluate the need for supplemental environmental documentation per State CEQA Guidelines Sections 15162 to 15164. The County will also evaluate the need for supplemental environmental documentation if new information of substantial importance becomes available after certification of this EIR.

The proposed Project would require the following discretionary action from the County:

- Mining Revision to an Approved Action (MRAA)

2.5.2 Other Agency Permits and Approvals

A public agency, other than the Lead Agency, that has discretionary approval over a project is known as a "Responsible Agency," as defined by State CEQA Guidelines Section 15381. The following is a preliminary listing of Responsible Agencies that may have approval authority over the proposed Project:

- U.S. Army Corps of Engineers
- U.S. Bureau of Land Management
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- California Department of Fish and Wildlife
- California Environmental Protection Agency
- California State Water Resources Control Board
- Colorado River Basin Regional Water Quality Control Board
- Mojave Desert Air Quality Management District

CHAPTER 3. ENVIRONMENTAL SETTING

This chapter of the environmental impact report (EIR) describes the environmental setting of the Castle Mountain Mine Phase II Expansion Project (Project), including the existing physical, biological, cultural, and regulatory conditions of the Project Area and its immediate and regional vicinity, and provides the baseline conditions against which Project impacts are evaluated pursuant to State CEQA Guidelines Sections 15125 and 15126.2. Pursuant to State CEQA Guidelines Section 15125(a), the environmental baseline for an EIR is established based on the physical environmental conditions existing at the time the Notice of Preparation (NOP) is published. These existing conditions serve as the point of comparison against which the proposed Project's environmental impacts are evaluated. For the proposed Project, San Bernardino County (County) published the NOP on October 17, 2025. This chapter also describes the cumulative context relevant to the analysis of Project impacts in Chapter 4, *Environmental Impact Analysis*.

3.1 PHYSICAL SETTING

3.1.1 Regional Setting

San Bernardino County is geographically the largest county in the United States, encompassing approximately 20,000 square miles and with an estimated population of approximately 2.19 million as of July 2024 (U.S. Census Bureau 2025). The majority of the County's population is concentrated in the southwestern portion of the County within the Inland Empire metropolitan area, while the eastern portion of the County is characterized by sparsely populated desert lands. Approximately 93 percent of the County consists of desert terrain, including federally protected lands such as the Mojave National Preserve, Joshua Tree National Park, and Death Valley National Park.

Elevations within San Bernardino County range from below sea level in Death Valley to over 11,500 feet at San Gorgonio Mountain. Climatic conditions vary widely, from extreme summer heat in low-elevation desert areas to seasonal snowfall at higher elevations. Average annual precipitation across the County is approximately 8 inches, with desert regions receiving substantially less. The County is subject to natural hazards, including drought, extreme heat, and periodic wildfire events, particularly in association with Santa Ana wind conditions.

This regional context establishes the broader environmental conditions within which the Project Area is located and informs the geographic scope of cumulative impact analyses presented in Chapter 4.

3.1.2 Local Setting

The Project Area is located in the eastern Mojave Desert within the historic Hart Mining District in northeastern San Bernardino County, California. Castle Mountain Mine (CMM) is situated approximately 100 miles east of Barstow, California, and approximately 60 miles south of Las Vegas, Nevada. The Mine Area lies near the California–Nevada state line and is located northeast of the Mojave National Preserve. The surrounding region is characterized by expansive desert landscapes, rugged mountain ranges, alluvial valleys, and scattered historic mining features reflective of long-standing mineral extraction activities in the area.

The total Project Area encompasses approximately 4,285 acres and includes the Mine Area, underground waterline, and overhead powerline, spanning private land owned by Castle Mountain Venture (CMV) and unpatented mining claims located on federal land administered by the U.S. Bureau of Land Management (BLM). The area is generally remote and sparsely populated, with limited development outside of mining-

related infrastructure, utility corridors, and regional transportation routes. Surrounding land uses primarily include public lands managed for multiple-use purposes, including mineral resource development, recreation, and habitat conservation.

Regional access to the Mine Area is provided primarily by Walking Box Ranch Road, an existing roadway that originates in Nevada and extends southwest across the state line into California, terminating at CMM's primary access road. Walking Box Ranch Road connects to State Route (SR-) 164 in Nevada, approximately seven miles northwest of Searchlight, Nevada, and approximately 14 miles east of Nipton, California. SR-164 is an east–west regional route that becomes Nipton Road upon crossing into California. From its intersection with SR-164, Walking Box Ranch Road extends approximately 17 miles southwest to the Mine Area. The Project Area is located at elevations ranging from approximately 4,100 to 5,100 feet above mean sea level, contributing to the area's arid desert climate and characteristic Mojave Desert vegetation communities.

3.1.3 Existing Project Site Characteristics

The Project Area covers approximately 4,285 acres, including portions of private vested lands historically mined prior to modern regulatory ordinances and the Surface Mining and Reclamation Act of 1976 (SMARA). Located within the historic Hart Mining District, the site has supported continuous mining activity since the early twentieth century. The existing mining operation at the Mine Area received approvals in the fall of 1990. Preproduction mining in the first open pit began in June 1991, and the first gold production occurred in February 1992. Mining activity was suspended by 2001, with processing suspended by 2004, during which interim reclamation was underway. Mining and reclamation operations remained idle until 2020. Existing infrastructure on public land includes groundwater monitoring wells, fencing, signs, pipelines, heap leach, mine pits, roads, and culverts. Existing mining operations include open, heap leach mine pits, and overburden sites (Figure 3-1).

Public access is restricted by fencing and gates to protect both public safety and wildlife. Wildlife species that are typical of the desert ecosystem are present throughout the area. Vegetation at the Project Area is representative of the eastern Mojave Desert, dominated by creosote bush (*Larrea tridentata*) scrub and Joshua tree (*Yucca brevifolia*) woodland habitats.

3.1.4 Surrounding Land Uses

The Project Area occupies private land owned by CMV and unpatented mining claims on BLM-administered land. The Mine Area is in unincorporated San Bernardino County, approximately 5 miles from the California-Nevada border in the historic Hart Mining District. The Hart Mining District was established in 1907 with the discovery of high-grade gold ore. Mining activities in the region and at the Mine Area have continued, at varying levels, since 1907. Modern commercial gold mineral exploration activities in the Hart Mining District began in the 1960s as part of ongoing clay quarrying activities.

The Project Area is immediately east of the Mojave National Preserve, a 1.6-million-acre preserve in Southern California that was established in 1994. The Mojave National Preserve is the third-largest park in the contiguous United States and features sand dunes, Joshua tree forests, and lava flows. Currently, a portion of the existing mine access road runs through the National Park Service land. Additionally, the Project Area is adjacent to the Avi Kwa Ame Monument located in Southern Nevada, near the California border.

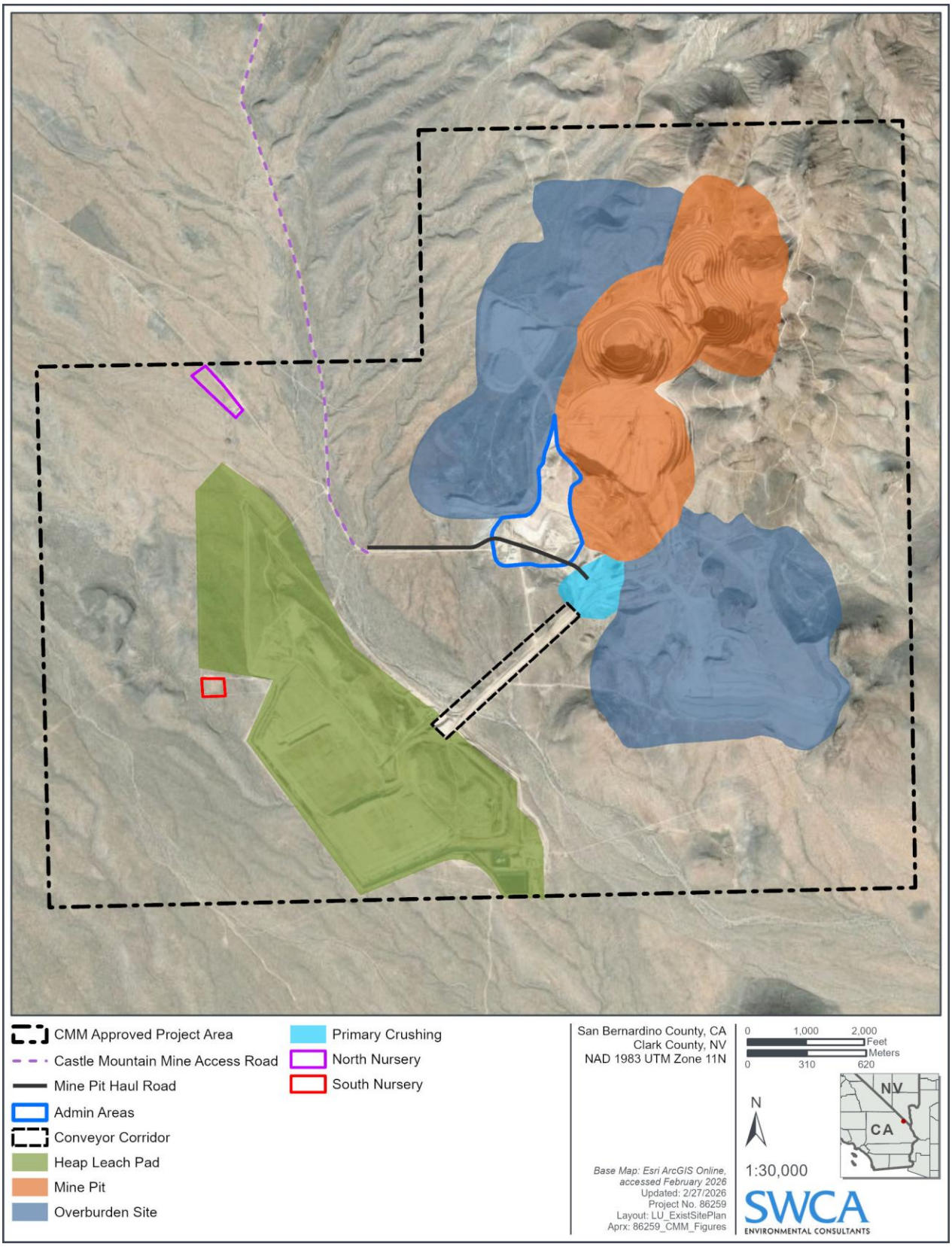


Figure 3-1. Existing Site Plan

Walking Box Ranch is approximately 16 miles northeast of the Mine Area. Walking Box Ranch is a historic ranch in the Mojave Desert, Nevada, and is managed by the University of Nevada, Las Vegas in partnership with the BLM. The property has been nominated for the National Register of Historic Places for its association with the history of cattle ranching and its architectural significance.

No residential communities are located in the immediate vicinity of the Mine Area, and land use compatibility considerations are evaluated in Chapter 4, Land Use and Planning.

3.2 CUMULATIVE CONTEXT

This section provides context for the cumulative analyses provided in the individual environmental issue area sections of Chapter 4 of this EIR. It outlines the CEQA requirements for cumulative analyses and the approach to analyzing the proposed Project's potential cumulative impacts. This section also provides regional growth projections, and a list of related development projects considered in the cumulative development scenario for the proposed Project. A cumulative impact analysis for each environmental issue area can be found in the corresponding sections of Chapter 4, *Environmental Impacts Analysis*, of this EIR.

3.2.1 CEQA Requirements for Cumulative Analyses

State CEQA Guidelines Section 15130 requires that an EIR shall discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable." "Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (State CEQA Guidelines Section 15355; see also California Public Resources Code [PRC] 21083(b)). In other words, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts" (State CEQA Guidelines Section 15130(a)(1)). The definition of cumulatively considerable is provided in Section 15065(a)(3):

> "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

According to State CEQA Guidelines Section 15130(b):

> The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

State CEQA Guidelines Section 15355 defines a "cumulative impact" as two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts. Cumulative impacts are changes in the environment that result from the incremental impact of the development of the proposed Project and all other nearby "related" projects. For example, the traffic impacts of two projects in proximity may be insignificant when analyzed separately, but could have a significant impact when the projects are analyzed together.

3.2.2 Cumulative Analysis Approaches Allowed by the State CEQA Guidelines

State CEQA Guidelines Section 15130 provides that the following two approaches can be used to adequately address cumulative impacts:

- **Regional Growth Projections Method:** A summary of projections contained in an adopted local, regional, or statewide plan or related planning document that describes or evaluates conditions contributing to the cumulative effect, or in a prior environmental document for such a plan which has been adopted or certified.
- **List Method:** A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.

As previously noted, the cumulative impact analysis for each environmental issue area can be found in the corresponding sections in Chapter 4, *Environmental Impact Analysis*. The cumulative analyses contained in Chapter 4 of this EIR use both approaches noted above (the regional growth projections method and the list method). This is due to the localized and specific nature of the proposed Project, and also because the Project Area is in an area that has and is anticipated to continue to experience some regional growth. Additionally, a combined approach is appropriate as some resource topics (such as air quality, transportation, and utilities) consider a more growth-based approach, while others (such as aesthetics, biological resources, and noise) necessitate a more list-based approach. This allows for a thorough, project-based cumulative analysis for the relevant geographic areas and timing of the Project activities.

Each environmental issue area's cumulative impact analysis uses the same thresholds of significance used to determine project impacts. In addition, the cumulative impact threshold included in State CEQA Guidelines Appendix G, Section XXI, *Mandatory Findings of Significance*, was examined in this EIR.

In Chapter 4, the following three-step approach was used to analyze cumulative impacts:

- Step 1: If the proposed Project was determined to have no impact in a particular impact area, then the analysis states that the proposed Project would not have a cumulative contribution to impacts related to that threshold.
- Step 2: If the proposed Project could result in impacts that were less than significant or significant, then the next step was to determine whether the combined effects from the proposed Project and other projects would be cumulatively significant. This was done by considering the proposed Project's incremental impact to the estimated anticipated impacts of other probable future projects or reasonably foreseeable development, or both.
- Step 3: The proposed Project's incremental contribution, if any, was evaluated to determine whether the combined significant cumulative impact would be cumulatively considerable, and thus significant as required by State CEQA Guidelines Section 15130(a).

It should be noted that State CEQA Guidelines Section 15064(h)(4) states that "[t]he mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable." Therefore, it is not necessarily true that, even where cumulative impacts of other projects are significant, the lead agencies must deem any level of incremental contribution to be cumulatively considerable. If the proposed Project's individual impact is less than significant, however, its contribution to a significant cumulative impact could nevertheless be deemed cumulatively considerable depending on the nature of the impact and the existing environmental setting. If, for example, a project is in an air basin determined to be in extreme or severe nonattainment for a particular criteria pollutant, a project's relatively small contribution of the same

pollutant could be found to be cumulatively considerable. Thus, depending on the circumstances, an impact that is less than significant when considered individually may still be cumulatively considerable in light of the impact caused by all projects considered in the analysis.

3.2.2.1 Temporal Scope

This cumulative impact analysis considers other projects that have been recently completed, are currently under construction, or are reasonably foreseeable (e.g., for which an application has been submitted, or an agency has proposed). Both short- and long-term cumulative impacts of the proposed Project, in conjunction with other cumulative projects in the area, are evaluated. The schedule and timing of the proposed Project and other cumulative projects, however, are relevant to the consideration of cumulative impacts, since some of the activities associated with the proposed Project are temporary. The cumulative impact analysis, therefore, pays particular attention to any cumulative projects with implementation schedules that could overlap with the proposed activities scheduled for this Project.

3.2.2.2 Regional Growth Projections

The Southern California Association of Governments (SCAG) is responsible for developing growth projections for population, housing, and employment throughout Southern California. Under federal law, SCAG is designated as a metropolitan planning organization. Under state law, SCAG is designated as a regional transportation planning agency and a council of governments. SCAG's region encompasses six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) and 191 cities in an area covering more than 38,000 square miles. SCAG's growth projections are used in the preparation of planning documents and analyses. These population projections are developed by adding the current population with the births and immigration into a region during a projection period and subtracting the number of deaths and the number of persons leaving the region (SCAG 2024). Regional and localized population growth has the potential to result in numerous environmental impacts, such as traffic congestion, air quality degradation, and other environmental changes. The Project Area is within a region (San Bernardino County, California) that has experienced recent growth and is projected to experience population increases in the future. Cumulative analysis will consider the regional population, households, and employment growth trends provided by SCAG to determine regional growth impacts resulting from the proposed Project.

3.2.3 List of Related Projects in the Project Vicinity

A summary of projects identified within the general vicinity of the Project Area is provided in Table 3-1. Because the Project Area is primarily located in San Bernardino County, related projects within San Bernardino County constitute the primary contributors to the cumulative projects list. The Mine Area is located approximately five miles west of Clark County, Nevada; however, pursuant to CEQA, the cumulative impact analysis focuses on projects located within the state of California. Accordingly, projects located within the state of Nevada are not included in Table 3-1. Nevertheless, the County made a good-faith effort to obtain information regarding cumulative projects from Clark County, Nevada, in order to evaluate whether nearby development outside of California could influence environmental conditions within the CEQA study area. Table 3-1 is not intended to be an exhaustive list of projects in the region, but represents those projects in the vicinity of the Project Area that may have some related environmental impact to the proposed Project and are: 1) currently under construction or implementation or beginning construction or implementation, 2) pending construction with approved entitlements, 3) proposed and under environmental review, or 4) reasonably foreseeable (i.e., projects for which an application has been submitted and reasonably foreseeable public projects).

Table 3-1. Cumulative Development Scenario Project List

	Name	Location	Project Type	Description	Project Status*
Regional					
1	Brightline West – Las Vegas to Victor Valley High Speed Rail Project	Southern Nevada to Southern California	Transportation	A 218-mile, all-electric high-speed rail service that includes a flagship station in Las Vegas, Nevada, with additional stations in Apple Valley, Hesperia, and Rancho Cucamonga, California. Trains will take passengers from Las Vegas to Southern California in 2 hours 10 minutes.	Environmental review complete; Utility design and construction started in 2024
2	Eldorado Pisgah Lugo Transmission Line Rating Remediation Project (DOI-BLM-CA-D010-2023-0005-EA)	Clark County, Nevada, and San Bernardino County, California	Utilities	The BLM California Desert District Office, BLM Las Vegas Field Office, and the Mojave National Preserve -National Park Service unit have received applications to amend the existing authorizations to address Southern California Edison (SCE) subtransmission line reliability issues.	Environmental review in process
3	Jeep Jamboree Special Recreation Permit (DOI-BLM-CA-D090-2025-0006-DNA)	Southern California	Recreation	Special Recreation Permit (SRP) would utilize approximately 450 miles in Southern California on public lands and the rest on National Park Service and Private Land.	Environmental review complete; SRP authorized
4	LA-Barstow to Vegas Dual Sport Event (DOI-BLM-CA-D080-2024-0001-CX)	Southern California	Recreation	The LA-Barstow to Vegas Dual Sport Event (LAB2V) consists entirely of street legal, licensed motorcycles in a two-day, non-speed, non-timed, touring event through the desert from Palmdale, California, to Las Vegas, Nevada.	Environmental review complete; SRP authorized
5	McCullough-Victorville Transmission Lines 1 and 2	Southern Nevada to Southern California	Transmission	The McCullough-Victorville (MCC-VIC) Transmission Lines 1 and 2 are existing 500-kilovolt (kV) power lines supported by approximately 1,740 single-circuit towers, spanning over 160 miles from Nevada's McCullough Switching Station through mountain ranges and the Mojave Desert to the Victorville Switching Station in California.	CEQA complete; Construction to start in 2026
6	Mojave Groundwater Bank	Southern California	Water Development	The Mojave Groundwater Bank is a significant water infrastructure project that will provide clean, reliable and affordable water to underserved communities in Southern California. The project would share its headwaters—Lanfair Valley watershed—with CMM.	Under Review

	Name	Location	Project Type	Description	Project Status*
7	Rebelle Rally (DOI-BLM-CA-D070-2025-0011-CX)	Southern Nevada to Southern California	Recreation	The Rebelle Rally is a multi-day women's driving and navigation event across portions of Nevada and California on designated, open routes to be held in October 2025.	Event being permitted
8	Southern California Edison Boulder- Chino Transmission Line (NVNV106086177)	Southern California	Transmission	Regular operations and maintenance (O&M) activities to include access road grading/repair, tensioning/pulling sites or amp-jack to lift towers and reduce wire sag, and removing or mowing vegetation to comply with Fire and Fuels stipulations.	Approved / Ongoing
9	Southern California Edison Cima-Eldorado-Pisgah 223kV Transmission Line (NVNV105968604)	Southern California	Transmission	Regular O&M activities to include access road grading/repair, tensioning/ pulling sites or amp-jack to lift towers and reduce wire sag, and removing or mowing vegetation to comply with Fire and Fuels stipulations.	Approved / Ongoing
10	Southern California Edison Eldorado-Lugo-Mohave 500kV Transmission Line (NVNV105847280)	Southern California	Transmission	Regular O&M activities to include access road grading/repair, tensioning/ pulling sites or amp-jack to lift towers and reduce wire sag, and removing or mowing vegetation to comply with Fire and Fuels stipulations.	Approved / Ongoing
San Bernardino County					
	APC Towers Valley Wells (PROJ-2025-00029)	San Bernardino County, California	Communications	A Minor Use Permit for a 120' wireless telecommunications tower.	Approved; Not yet constructed
11	Desert Antimony Drill Project (DOI-BLM-CA-D090-2025-0021-CX and DOI-BLM-CA-D090-2025-0013-CX)	Mountain Pass, California	Mining	Locksley Resources Limited, dba Enigma Strategic Minerals (ESM), submitted a proposal to conduct reverse circulation drilling exploration activities at the Desert Antimony Mine near Mountain Pass, California. The proposed total acreage disturbance is estimated at 0.96 acre on lands managed by BLM.	Environmental review complete; Exploration authorized for 2025
	Equinox Energy Center (PROJ-2025-00015)	San Bernardino County, California	Solar	Conditional Use Permit to construct a 500 MW solar photovoltaic electricity generation facility on 3,318 acres.	Environmental review in process

	Name	Location	Project Type	Description	Project Status*
12	I-15 Wildlife Crossings	San Bernardino County, California	Transportation	The California Department of Transportation (Caltrans), the California Department of Fish and Wildlife, and Brightline West have entered into an agreement to design and construct three wildlife overcrossings across Interstate (I-) 15 and the future Brightline West high-speed rail system connecting Las Vegas and Southern California.	Construction began in December 2025
13	Ivanpah Substation Right-of-Way (ROW) (DOI-BLM-CA-D090-2022-0007-EA)	San Bernardino County, California	Transportation	SCE and DesertXpress received rights-of-way (ROWs) to construct substations and transmission lines to support the Brightline West rail project.	Environmental review complete; ROW authorized
14	Middle Mile Broadband 155, 154, 153 (DOI-BLM-CA-D090-2025-0014-CX)	San Bernardino County, California	Broadband	The California Department of Technology is installing broadband fiber along I-40 and U.S. Route 95 to close digital gaps.	Environmental review in process
15	Rigo Favela Access Road ROW (DOI-BLM-CA-D090-2024-0003-CX)	San Bernardino County, California	Access	ROW has been authorized to provide a private landowner access to an inholding located west of Nipton, California. The route is designed to minimize ground disturbance and avoid areas with major vegetation.	Environmental review complete; ROW authorized
16	Shadow Valley Well System Modification (DOI-BLM-CA-D090-2025-0028-CX)	San Bernardino County, California	Mining	An amendment to its existing Mine Plan of Operations (MPO) (CACA-056118) to install approximately 1,750 feet of underground pipeline to connect the well to its existing Southern Valley Water System (SVWS). The pipeline would cross BLM-managed land, resulting in approximately 2.24 acres of temporary surface disturbance, and would be installed using horizontal directional drilling (HDD) to minimize impacts.	NEPA completed in October 2025; MPO Amendment authorized
	Skanska Essex Mine (PROJ-2024-00123)	San Bernardino County, California	Mining	Conditional Use Permit and Reclamation Plan to renew sand and gravel mining on previously mined 50 acres of a 536.6 acres site for 50 years.	Environmental review in process
	Terribles Fuel Station (PROJ-2023-00036)	San Bernardino County, California	Commercial	A Minor Use Permit for a 7,433-square-feet convenience store with fuel canopies (nine fueling positions) (NIPTON) and 27 truck parking stalls.	Environmental review in process

	Name	Location	Project Type	Description	Project Status*
17	UPRC Communication Use Lease Amendment (DOI-BLM-CA-D090-2024-0004-CX)	San Bernardino County, California	Communications	The BLM has approved an application from Union Pacific Railroad Company (UPRC) to amend their existing communication use lease site (BLM serial number CACA053713). This amendment would include replacing their existing 60-foot guyed tower with an 80-foot self-supporting tower to comply with current Telecommunications Industry Association (TIA) standards.	NEPA complete; ROW authorized
18	Yermo Convenience Store & Gas Station PROJ-2019-00010	San Bernardino County, California	Commercial	A Minor Use Permit to construct a travel center fueling station with a convenience store and fast-food drive-through restaurant on approximately 5.72 acres of undeveloped land.	Pending conditions from Yermo-Calico Fire Department review of revised site plan before advancing to an appointed zoning administrator hearing
19	Eddie's World (PROJ-2022-00216) (Yermo)	San Bernardino County, California	Commercial	–A General Plan Amendment/Rezone for a supercharger, parking, and future retail; Planned Development Application Tentative Parcel Map	Under review by the County
20	Terribles Fuel Station (PROJ-2023-00036)	San Bernardino County, California	Commercial	A Minor Use Permit for a 7,433-square-feet convenience store with fuel canopies (nine fueling positions) (Barstow) and 27 truck parking stalls.	Under review by the County
21	Glacier Power and Gas (PROJ-2022-00081) (Yermo)	San Bernardino County, California	Solar	A Conditional Use Permit for a community-scale solar facility (10 megawatts).	Under review by the County
22	Zamora Valley MUG (PROJ-2023-00132) (Baker)	San Bernardino County, California	Commercial	A Conditional Use Permit for a 9,600-square-foot convenience store/travel center, including 23 charging stations, five diesel pumps, and 10 standard pumps.	Under review by the County

Sources: BLM (2025); Federal Railroad Administration (2024); Caltrans (2025); Los Angeles Department of Water and Power (2025); Cadiz, Inc. (2025); SCE (2025)

CHAPTER 4. ENVIRONMENTAL IMPACT ANALYSIS

This chapter of the environmental impact report (EIR) evaluates the potential environmental effects that would result from the construction and operation of the Castle Mountain Mine Phase II Expansion Project (Project) and identifies mitigation measures for impacts found to be potentially significant. Table 4-1 provides a brief summary of the results of the analysis.

Table 4-1. Summary of Environmental Impacts Analysis

Environmental Resource	Significant and Unavoidable Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impacts
Aesthetics			X	
Agriculture and Forestry Resources				X
Air Quality	X			
Biological Resources		X		
Cultural and Tribal Cultural Resources		X		
Energy			X	
Geology, Soils, and Mineral Resources			X	
Greenhouse Gas Emissions		X		
Hazards and Hazardous Materials			X	
Hydrology and Water Quality			X	
Land Use and Planning				X
Noise and Vibration			X	
Population and Housing			X	
Public Services, Utilities, and Service Systems		X		
Transportation and Recreation			X	
Wildfire				X

Each environmental issue area discussed in Chapter 4 of this EIR has been divided into subsections, as follows:

Existing Conditions: The description of the physical environmental conditions in the vicinity of the Project, as they exist at the time of the established baseline physical conditions.

Regulatory Setting: The regulations in effect at the time the Notice of Preparation was published. These are the applicable regulations governing each environmental topic, such as the California Endangered Species Act (CESA) and its requirements for protecting rare and endangered species. This is not an exhaustive analysis of the regulations, but rather information to assist the reader in understanding the potential impacts of the project from a regulatory perspective.

Thresholds of Significance: The thresholds used to evaluate each environmental topic are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines and other sources.

Impact Assessment Methodology: Methods used to determine the impacts associated with the project, such as measurements or field investigative processes.

Environmental Impact Analysis: The statement of the level of significance of the potential environmental effects of the project. These include the significant environmental effects of the Project, as further defined below. The impacts are identified and then are followed by the mitigation measures that can minimize significant impacts; mitigation measures must be enforceable and feasible. In addition, there must be an essential nexus between the mitigation measure and a legitimate governmental interest, and the mitigation measure also must be "roughly proportional" to the impacts of the Project.

Cumulative Impact Analysis: The cumulative effects of the Project when the Project's incremental effect is considered in combination with other closely related past, present, and reasonably foreseeable probable future projects.

All impacts in this EIR, following the application of any recommended mitigation measures, have been classified according to the following criteria (note: CEQA does not recognize a beneficial effect as an impact):

A *significant and unavoidable impact* would cause a substantial adverse effect on the environment that meets or exceeds the applicable significance criteria thresholds for a particular resource, and no feasible mitigation measures would be available to reduce the impact to a less-than-significant level.

A *less-than-significant impact with mitigation incorporated* is an adverse impact that would cause a substantial adverse effect that meets or exceeds the applicable significance criteria thresholds for a particular resource but can be reduced to a less-than-significant level through the successful implementation of identified mitigation measures.

A *less-than-significant impact* is an adverse impact that does not meet or exceed the applicable significance criteria thresholds for a particular resource. Generally, no mitigation measures are required for less-than-significant impacts; only compliance with standard regulatory conditions would be required. However, mitigation may still be recommended should the lead or responsible agencies deem it appropriate to reduce the impact to the maximum extent feasible, as long as there is rough proportionality between the environmental impacts caused by the proposed Project and the mitigation measures imposed on the proposed Project.

A *no impact* determination is applied where the analysis concludes that implementation of the proposed Project would not result in a direct, indirect, or cumulative adverse change to the environment under the applicable significance criteria. In such cases, the proposed Project would not trigger any of the thresholds identified in Appendix G of the State CEQA Guidelines or other adopted federal, state, or local standards, and no mitigation measures or additional regulatory compliance measures are required beyond existing baseline conditions. A no-impact conclusion reflects the absence of a reasonably foreseeable environmental effect, rather than a less-than-significant level of impact.

The term "significance" is used throughout the EIR to characterize the magnitude of the projected impact. For this EIR, a significant impact is a substantial or potentially substantial change to resources in the Project Area or the area adjacent to the Project. In the discussions of each issue area, thresholds of significance are identified to distinguish between significant impacts and impacts that would not rise to the level of significance.

Where feasible, measures have been identified to reduce Project impacts to less-than-significant levels. CEQA states that public agencies should not approve projects as proposed if there are feasible mitigation measures available that would substantially lessen the environmental effects of such projects (California Public Resources Code [PRC] Section 21002).

4.1 AESTHETICS

This section of the EIR analyzes potential impacts to aesthetic and visual resources resulting from the implementation of the proposed Project. The analysis is based on review of existing resources, technical data, and applicable laws, regulations, and guidelines, as well as technical reports prepared for the proposed Project. This analysis is conducted consistent with the Environmental Checklist contained in Appendix G of the State CEQA Guidelines and constitutes a good-faith, reasoned analysis supported by substantial evidence, as required by State CEQA Guidelines Sections 15064 and 15151.

4.1.1 Existing Conditions

4.1.1.1 Visual Characteristics of the Surrounding Area

The Project Area is surrounded by generally undeveloped, intact land of the Mojave Desert, predominantly consisting of open space land uses. The surrounding desert landscape encompasses mountains and valleys, modern and historic mines, and far-reaching scenic vistas with elevations ranging from less than 1,000 feet to approximately 8,000 feet above sea level. Lanfair Valley exhibits characteristics consistent with the visual quality of the Mojave Desert region and is enclosed by views of surrounding mountains, including the Castle Mountains, forming the northeastern boundary of the valley; the New York Mountains to the west; and the Piute Mountains to the southeast. Notable peaks and mountain views within the surrounding area include Hart Peak at approximately 5,400 feet above sea level and Castle Mountain Peaks at approximately 5,500 feet above sea level. The existing scenery in the visual analysis area is characterized as generally flat or gently sloping with variable topography and generally sparse vegetation ranging from Joshua tree woodland to creosote bush and blackbush scrub. Human development in the surrounding area includes the historic Barnwell and Searchlight Railroad grade, which intersects the Castle Mountains Grasslands Trail; improved and unimproved dirt roads, campgrounds; and features related to historic and present agriculture, grazing, and mining activities. Ranching features, including corrals, water tanks, and fencing, are dispersed throughout the valley, and mining activities have occurred in the Castle Mountains, New York Mountains, and the surrounding area.

4.1.1.2 Visual Characteristics of the Project Area

The approximate 4,285-acre Project Area is at the southern end of the Castle Mountain Range in a historic mining area in San Bernardino County, approximately 5 miles from the California-Nevada state line. The Project Area is bordered by undeveloped, desert land administered by the U.S. Bureau of Land Management (BLM) and National Park Service (NPS). As depicted in Chapter 2, *Project Description* (Figure 2-1), the proposed underground water line would traverse BLM-administered and private lands along Nipton Road from Nipton, California, to the Nevada state line, as well as along the Castle Mountain Mine (CMM) access road from CMM to the Nevada state line. The proposed power line would similarly run along the CMM access road from CMM to the Nevada state line. The area encompassing the Project Area, including the mine expansion and proposed utilities, is characterized as generally flat or gently sloping, consistent with the Mojave Desert region. Vegetation in the Project Area consists of Joshua tree woodlands, blackbrush scrub, and Mojave creosote bush scrub with desert grass understories. Upper elevations within the Project Area generally consist of juniper woodlands and blackbrush scrub, whereas lower elevations generally consist of Joshua tree woodlands and creosote brush scrub.

Human modifications in the Project Area are primarily a result of past and present mining activities and development. Gold, silver, and clay mining occurred in the Historic Mining District since the early 1900s, with commercial-scale gold mining beginning in the 1980s. CMM, including the open-pit mine and facilities to support ore extraction, crushing, milling, and heap leaching, was constructed in 1991 with

interim reclamation and revegetation occurring by 2012. Reclaimed areas included the overburden rock pile and heap leach pad before mining activities resumed in 2020. Additional human modifications include development within the town of Nipton. Nipton Road is a two-lane, paved state highway intersecting the town of Nipton, with existing overhead power and communications lines running parallel to the road. The Union Pacific Railroad also intersects Nipton Road in the north–south direction.

4.1.1.3 Designated Scenic Resources

The *San Bernardino Countywide Plan* (CWP) identifies scenic resources to preserve regionally significant scenic vistas and natural features, including dominant landforms, prominent hillsides, reservoirs, and ridgelines that contribute to a high level of visual quality. San Bernardino County (County) has identified valley, mountain, rural desert, and desert village communities as containing scenic, natural, and/or recreational features that serve as the foundation of the local economy and attract tourists (County of San Bernardino 2020a).

Public views are defined as those visible from publicly accessible vantage points, including streets, highways, parks, and vista points and can be categorized as either focal (i.e., views directed toward specific objects, scenes, or features) or panoramic views, which encompass expansive geographic areas and extend into the distance.

Due to the generally open landscape of the desert landscape within the Project vicinity, panoramic views with moderate to high visual quality are available to viewer groups in the area. Within the Project vicinity, scenic viewpoints include, but are not limited to, mountains, valleys, and geologic features such as rock outcrops. Views of the proposed Project rights-of-way (ROWs) for the underground water pipeline are available from Nipton Road and the adjacent small residential community of Nipton. Generally, the surrounding views consist of open desert landscape and limited residential development that include resource conservation, open space, and special development residential areas, as well as the Union Pacific Railroad. Views of the proposed Project ROWs for the proposed transmission line are available along Walking Box Ranch Road from the California-Nevada state line to CMM. The surrounding views are available within the Mojave National Preserve, which consists of undeveloped desert lands open for dispersed recreation and accessed by unpaved roads.

4.1.1.4 Scenic Highways and Scenic Resources

The California Scenic Highway Program identifies both State of California (State)- and County-designated scenic highways. According to the Statewide Scenic Highway Map, there are no designated highways near the Project Area (California Department of Transportation [Caltrans] 2018). The nearest eligible State Scenic Highway is State Route (SR) 40 from Essex Road (near the community of Essex) to U.S. Highway (U.S.) 95 (near the former town of Klinefelter). This portion of SR 40 is approximately 30 miles from the Project Area and is not an officially designated State Scenic Highway. SR 40 is also a County Scenic Route. The nearest County Scenic Route is Route 66, located approximately 6 miles north of SR 40 and approximately 23 miles south of the Project Area. The closest officially designated State Scenic Highway is SR 247, approximately 112 miles southwest of the Project Area near Barstow, California. The Project Area is not within the viewshed of a State-designated scenic highway due to the substantial distance between the Project Area and any State-designated highways.

4.1.1.5 Light and Glare

The two primary sources of light in the built environment include: (1) light emitted from within buildings that passes through windows, and (2) lighting from exterior sources, including streetlights, security fixtures, building and parking lot illumination, and landscape lighting. Light sources can contribute to

light trespass in adjacent residential or developed areas, reduce the quality of nighttime sky views, and potentially disturb wildlife within the natural habitat. Glare refers to the resulting discomfort experienced when an individual looks directly at a light source, while light spill describes the presence of unwanted illumination extending onto properties adjacent to the illuminated property. The Project vicinity is characterized by low intensities of illumination. Artificial lighting in the Project vicinity includes street and railroad lighting along Nipton Road, light emitted from headlights of vehicles traveling along Nipton Road and the CMM access road, and exterior and interior lighting of residential and nonresidential buildings in the town of Nipton. Additional sources of artificial light include lighted facilities within the Mine Area.

4.1.2 Regulatory Setting

4.1.2.1 Federal

FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976

The Federal Land Policy and Management Act of 1976 (FLPMA) (43 United States Code 1701(a)(8)) declares that public lands be managed in a manner to protect the quality of scenic and other values that, where appropriate, will preserve and protect certain public lands in their natural condition.

BUREAU OF LAND MANAGEMENT

Visual Resource Management

The BLM Visual Resource Management (VRM) program was developed to protect the natural beauty of public lands by guiding the identification, inventory, and management of scenic values under BLM jurisdiction. The Visual Resource Inventory (VRI) process assigns inventory classes to BLM-administered lands based on a scenic quality evaluation, sensitivity level analysis, and delineation of distance zones as outlined in the Visual Resource Inventory Manual (BLM 1986). These factors are reflected in VRI classes, which are considered when establishing resource management goals and objectives. VRI classes reflect the quality of a visual resource and are considered when determining VRM class objectives in accordance with approved resource management plans (RMPs). VRM class designations may differ from the VRI assigned to a visual resource and are based on a full assessment that evaluates VRI in conjunction with analyses of other resource values, potential land uses, and needs. VRM classes provide management objectives for lands as well as the level of visual change that is allowed to landscape character as a result of proposed management activities. Objectives for each VRM class are defined 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 should 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 the 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 require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements of the landscape.

Technical Note 457, Night Sky and Dark Environments

Activities, developments, and visitor services provided on BLM-managed lands include outdoor lighting where appropriate to provide for visitor and worker safety security and enjoyment. The Night Sky and Dark Environments technical note provides best practices for outdoor lighting highlighting available research addressing the growing public concern on light pollution (BLM 2023). Types of light pollution as described in Section 3.1.2 of the technical note include the following:

- **Glare:** Excessive brightness that causes visual discomfort or visual impairment.
- **Skyglow:** Overall brightening of the night sky caused by atmospheric reflection of outdoor lighting and other causes.
- **Light trespass:** Light falling where it is not intended or needed.
- **Light clutter:** Bright, confusing, and excessive groupings of light sources.
- **Over-illumination:** Lighting intensity higher than that which is appropriate for a specific activity.

DESERT RENEWABLE ENERGY CONSERVATION PLAN

The *Desert Renewable Energy Conservation Plan* (DRECP) was developed as an interagency plan by the BLM, U.S. Fish and Wildlife Service (USFWS), California Energy Commission, and California Department of Fish and Wildlife (CDFW) to streamline renewable energy and conservation planning at the landscape level in the California desert region.

In 2016 the BLM signed the Record of Decision approving its Land Use Plan Amendment (LUPA), which completed Phase I of the DRECP. The DRECP LUPA establishes VRM classes for all lands under its direction. VRM measures from the DRECP LUPA include the following (BLM 2016):

- **LUPA-VRM-1:** Manage visual resources in accordance with VRM Classes I through IV.
- **LUPA-VRM-2:** Ensure that activities with each of the VRM Class polygons meets the VRM Objectives described above, as measured though a visual contrast rating process.
- **LUPA-VRM-3**: Ensure that transmission facilities are designed and located to meet the VRM Class Objectives for the area in which they are located. New transmission lines routed through designated corridors where they do not meet VRM Class Objectives will require RMP amendments to establish a conforming VRM Objective. All reasonable effort must be made to reduce visual contrast of these facilities in order to meet the VRM Class before pursuing RMP amendments. This includes changes in routing, using lattice towers (vs. monopole), color treating facilities using an approved color from the BLM Environmental Color Chart CC-001 (dated June 2008, as updated on April 2014, or the most recent version) (vs. galvanized) on towers and support facilities, and employing other best management practices (BMPs) to reduce contrast.

4.1.2.2 State

CALIFORNIA SCENIC HIGHWAY PROGRAM

Established in 1963 and managed by Caltrans, the California Scenic Highway Program was created to enhance and protect statewide scenic highway corridors from changes that diminish the visual quality of areas adjacent to highways. The State Scenic Highway System lists eligible and officially designated State scenic highways with designations determined by the extent of natural landscape visible by motorists, the overall scenic quality of the landscape, and the degree to which development intrudes upon the motorist's enjoyment of the view.

2022 CALIFORNIA ADMINISTRATIVE REGULATIONS, TITLE 24, PART 1

Section 10-114, *Determination of Outdoor Lighting Zones and Administrative Rules For Use*, establishes rules for implementing outdoor lighting zones in compliance with Section 140.7 of Title 24, CCR, Part 6. This article contains administrative regulations to the energy building regulations and applies to all residential and nonresidential buildings.

4.1.2.3 Local

SAN BERNARDINO COUNTYWIDE PLAN

The CWP, adopted by the Board of Supervisors in 2020, updates and expands the County's General Plan by addressing the physical, social, and economic issues facing the unincorporated portions of the county (County of San Bernardino 2020b). The CWP consists of the County Policy Plan, the County Business Plan, and a communities plan. The County Policy Plan (County of San Bernardino 2026), based on the former General Plan, contains long-term policies and goals that guide County decisions, investments, and improvements toward achieving the countywide vision and consists of 11 elements: Land Use, Housing, Infrastructure and Utilities, Transportation and Mobility, Natural Resources, Renewable Energy and Conservation, Cultural Resources, Hazards, Personal and Property Protection, Economic Development, and Health and Wellness. The County Business Plan consists of a policy-based governance element along with an implementation plan. The communities plan consists of 35 Community Action Guides that provide a framework for communities to create future character and independent identity through community actions. Relevant policies in the Land Use and Natural Resources Elements of the CWP are summarized in Table 4.1-1 (County of San Bernardino 2020b).

Table 4.1-1. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Land Use Element	
Policy LU-2.3	**Compatibility with natural environment.** The County requires that new development is located, scaled, buffered, and designed for compatibility with the surrounding natural environment and biodiversity.
Policy LU-4.1	**Context-sensitive design in the Mountain/Desert Regions.** The County requires new development to employ site and building design techniques and use building materials that reflect the natural mountain or desert environment and preserve scenic resources.
Policy LU-4.7	**Dark skies.** The County minimizes light pollution and glare to preserve views of the night sky, particularly in the Mountain and Desert regions where dark skies are fundamentally connected to community identities and local economies. The County also promotes the preservation of dark skies to assist the military in testing, training, and operations.

Goal/Policy	Goal/Policy Description
Natural Resources Element	
Policy NR-4.1	**Preservation of scenic resources.** The County considers the location and scale of development to preserve regionally significant scenic vistas and natural features, including prominent hillsides, ridgelines, dominant landforms, and reservoirs.
Policy NR-4.2	**Coordination with agencies.** The County coordinates with adjacent federal, state, local, and tribal agencies to protect scenic resources that extend beyond the County's land use authority and are important to countywide residents, businesses, and tourists.

SAN BERNARDINO COUNTY DEVELOPMENT CODE TITLE 8, MOUNTAIN AND DESERT REQUIREMENTS

San Bernardino County Development Code Section 83.07.060, *Mountain and Desert Requirements*, provides standards for outdoor lighting in the mountain and desert regions of the County. Applicable standards include the following:

(a) *Shielding Required.* All outdoor light fixtures shall be fully shielded, installed and maintained in such a manner that the shielding does not permit light trespass in excess of amounts set forth in subdivision (f).

(b) *Light Pollution Standards.* Light pollution and trespass shall be minimized through the use of directional lighting, fixture location, height and the use of shielding and/or motion sensors and timers in such a manner that the light source does not permit light trespass in excess of amounts set forth in subdivision (f).

(c) *Automated Controls.* Automated control systems, such as motion sensors and timers, shall be used to meet curfew requirements set forth in subdivision (d). Photocells or photo controls shall be used to extinguish all outdoor lighting automatically when sufficient daylight is available. Automated controls should be fully programmable and supported by battery or similar backup.

(d) *Dark Sky Curfew.* All outdoor lighting shall be extinguished by 11:00 p.m., close of business, or when people are no longer present in exterior areas, whichever is later, except for the following:

  (1) Lighting used for entry and exit points of a structure, parking areas, driveways and driveway ingress/egress points; or

  (2) Lighting activated by a motion sensor that extinguishes no later than five minutes after activation.

(e) *Lighting Color.* The correlated color temperature of all outdoor lighting shall be 3,000 Kelvin or less except for seasonal lighting.

(f) *Allowable Light Trespass.* Outdoor lighting shall not cause light trespass exceeding one-tenths foot-candles measured with a light meter oriented vertically or horizontally either at the property line of the adjacent property or measured from some other point on the property where light trespass may be reasonably determined to occur due to differences in property or improvement elevations.

(g) *Blinking, Flashing, or High Intensity Lighting.* Permanently installed lighting that blinks, flashes or is of high intensity or brightness that causes a light trespass is prohibited.

4.1.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. The Project would result in significant adverse impacts related to aesthetics if it would:

a) Have a substantial adverse effect on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings, or in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.

d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

For purposes of this analysis, a "substantial" impact is one that would materially degrade or diminish the existing scenic or visual quality of the environment when evaluated in the context of the existing environmental baseline, consistent with State CEQA Guidelines Section 15064(b). Project analysis under each threshold is discussed in Section 4.1.5, *Project-Specific Impacts and Mitigation Measures*, below.

4.1.4 Impact Assessment Methodology

The evaluation of aesthetic impacts is inherently subjective; however, it relies on a process of objectively identifying existing visual attributes of the environment and their value. The aesthetics assessment includes a detailed description of existing visual character, encompassing visual resources and scenic vistas unique to the Project Area and its surroundings. Visual resources are determined by identifying landforms (e.g., topography and graded areas), views (e.g., scenic resources such as natural features or urban characteristics), viewpoints/locations, and existing light and glare (e.g., nighttime illumination). Modifications to aesthetic resources due to implementation of the proposed Project are identified and assessed based on the proposed Project elements as described in Chapter 2, *Project Description*, related to the existing setting and viewer sensitivity. Individuals in the surrounding buildings, as well as pedestrians, motorists, and cyclists travelling along Nipton Road, would be considered visual receptors of the proposed Project.

This aesthetics analysis considers the physical and visual changes to the Project Area including modifications to natural features, such as trees and landscaping, and introduced features, such as structures and lighting. Section 4.1.5, *Project-Specific Impacts and Mitigation Measures*, considers the proposed Project's consistency with plans and regulations that address issues related to scenic views, scenic highways, visual character, and light and glare.

4.1.4.1 Field Reconnaissance

Field reviews of the Project Area were conducted on January 12–13, 2026, to document and gain an understanding of the existing landscape quality and character, and to compare those existing values with the proposed Project's components, as well as to collect the necessary photographic documentation for subsequent analysis and simulations. Field reconnaissance included a review of the entire Project Area as well as the surrounding area. Resource inventories were conducted both on foot and from moving vehicles. Existing visual resources and site conditions were photographed and recorded. Site assessment of proposed Project elements was based on plans and descriptions provided by the Project Applicant. If Project information was not available, Project elements were assumed to be similar in basic appearance to

other mining facilities throughout the region and state. Planning documents and previous studies relevant to the surrounding area were referenced to gain an understanding of community aesthetic values.

4.1.4.2 Key Observation Point Selection

The Project Area was viewed from potential viewer group locations in the surrounding area. Representative public viewpoints were identified for further analysis, based on dominance of the Project Area within the view, the relationship to visual resources, duration of views, and expected sensitivity of the viewer group. Of those representative viewpoints, key observation points (KOPs) were selected that best illustrate the visual changes that would occur as a result of the proposed Project.

4.1.4.3 Visual Simulations

Visual simulations were prepared illustrating the estimated appearance of the proposed Project as proposed by the Project Applicant and are included in the Project's Visual Resources Technical Report (SWCA 2026; EIR Appendix 1). The layout and appearance of the proposed Project shown in the visual simulations is based on designs provided by the Project Applicant and as identified in Chapter 2, *Project Description*, of this EIR.

The visual simulation methodology used on-site field data and photography, combined with three-dimensional modeling and surface rendering. The photo-simulation process was based on mapping of existing structures and landmarks, using their known dimensions and data to establish an accurate scale and orientation for the proposed Project designs. These reference points allowed the subsequent simulations to accurately integrate the Project elements into the topography and context of the surrounding development.

Accuracy of the computer-generated modeling and visual simulations was field-verified and validated through iterative comparisons with the physical site, in order to confirm that the simulations reliably represent the proposed Project's scale, placement, massing, and visual effect.

4.1.4.4 Visual Contrast Analysis

To provide a systematic basis for evaluating impacts to visual resources resulting from the construction and operation of the proposed Project, the visual assessment was based in part on the BLM's VRM System. BLM Form 8400-1 (BLM 1986) was adapted for Project purposes and used to document the potential visual contrast of the proposed Project components to the surrounding landscape. BLM Contrast Analysis is an industry standard and can be used as a basis for CEQA visual impact assessments, and provides the public and authorizing agencies a consistent and translatable methodology for understanding potential visual impacts from proposed projects.

The visual contrast analysis is a qualitative discussion of anticipated contrast between the existing landscape character and the proposed activities and/or facilities. Factors taken into consideration for such an analysis include distance of the Project elements from the viewer and the level of perceived contrast between the Project elements and the existing landscape. These factors are further defined below.

The following distance zones were used for evaluating impacts on scenery from each KOP:

- **Foreground:** up to 0.5 mile
- **Midground:** 0.5–3 miles
- **Background:** 3–7 miles

The level of perceived contrast between the Project elements and the existing landscape from each KOP were classified using the following terms:

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

4.1.4.5 Project Visibility

This section addresses the components of the aesthetics issue statement by evaluating impacts to viewers and aesthetics within the aesthetics analysis area, which is composed of a 15-mile buffer around the mine area and a 2-mile buffer around the underground water pipeline and overhead powerline ROWs. This analysis is applicable to the portions of the proposed Project within California which include approximately 2.9 miles of an underground water pipeline near the community of Nipton, California, approximately 7.2 miles of an underground water pipeline and overhead powerline sited parallel, and the mining operation expansion area.

Because of the Project Area's proximity to transportation corridors and recreation areas, combined with the general openness of the desert landscape, the potential for public visibility of Project improvements is moderately high. General Project visibility was determined by evaluation of Project viewshed maps (Figures 4.1-1 through 4.1.3) and verified by field reconnaissance.

The Project viewshed maps were created using ArcGIS Pro software, incorporating a 1/3 arc-second digital elevation model. The viewshed models indicate where theoretical direct line-of-site views may occur between terrain locations and points used to represent the locations and heights of Project components. The models are based on elevation and landform and do not account for vegetation, existing structures, and other landscape elements that could obstruct views. They model the approximate heights and locations of the Project components and incorporate those features into the existing landform to illustrate the areas from which the proposed Project would potentially be visible within the analysis area. Although the proposed Project may be seen to some degree from beyond the 3-mile analysis area, the proposed Project is not expected to draw the attention of viewers from such areas due to distance, viewing angle, and the presence of intervening and surrounding landscape features where viewer focus would be directed.

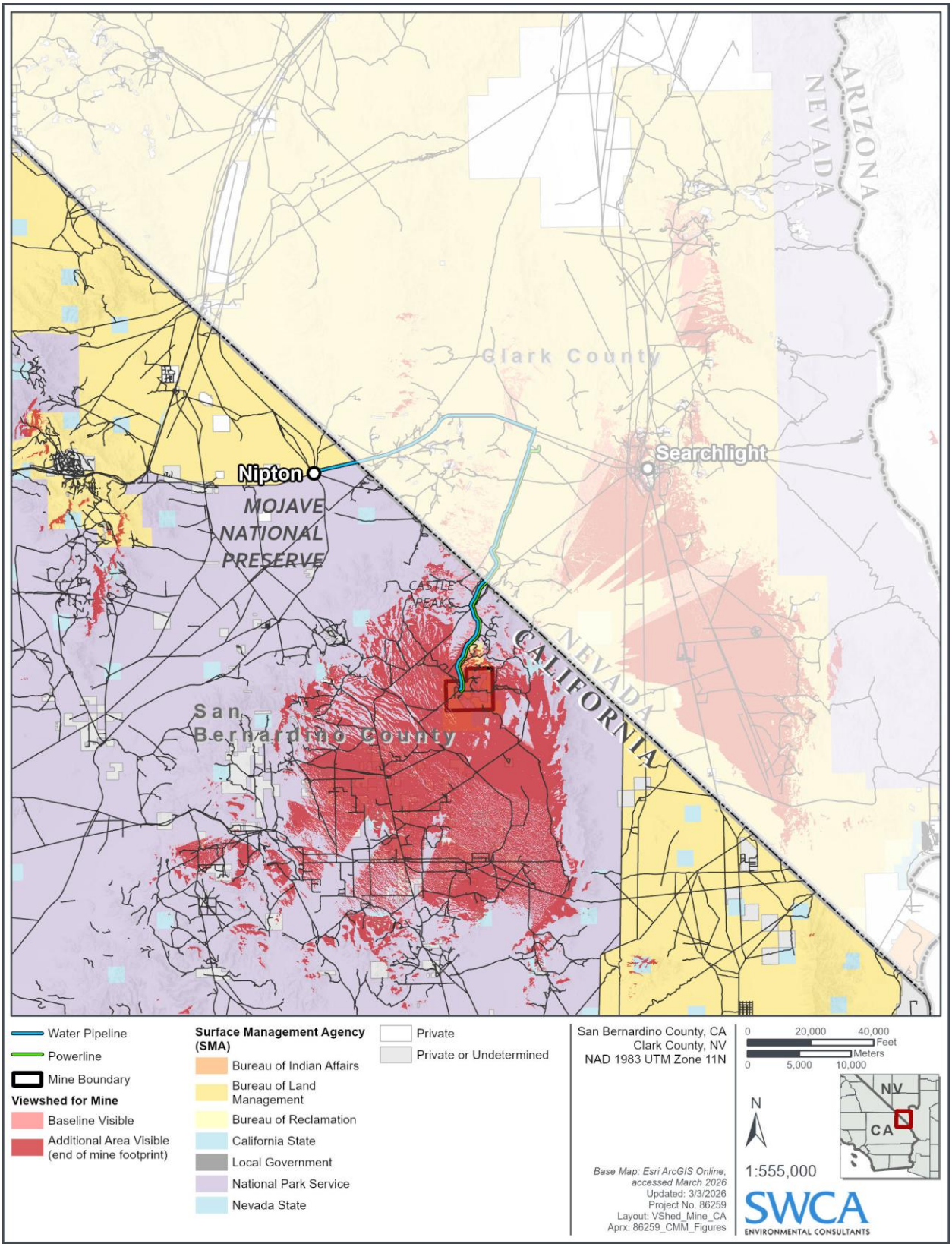


Figure 4.1-1. Viewshed Map of Proposed Mine Facility

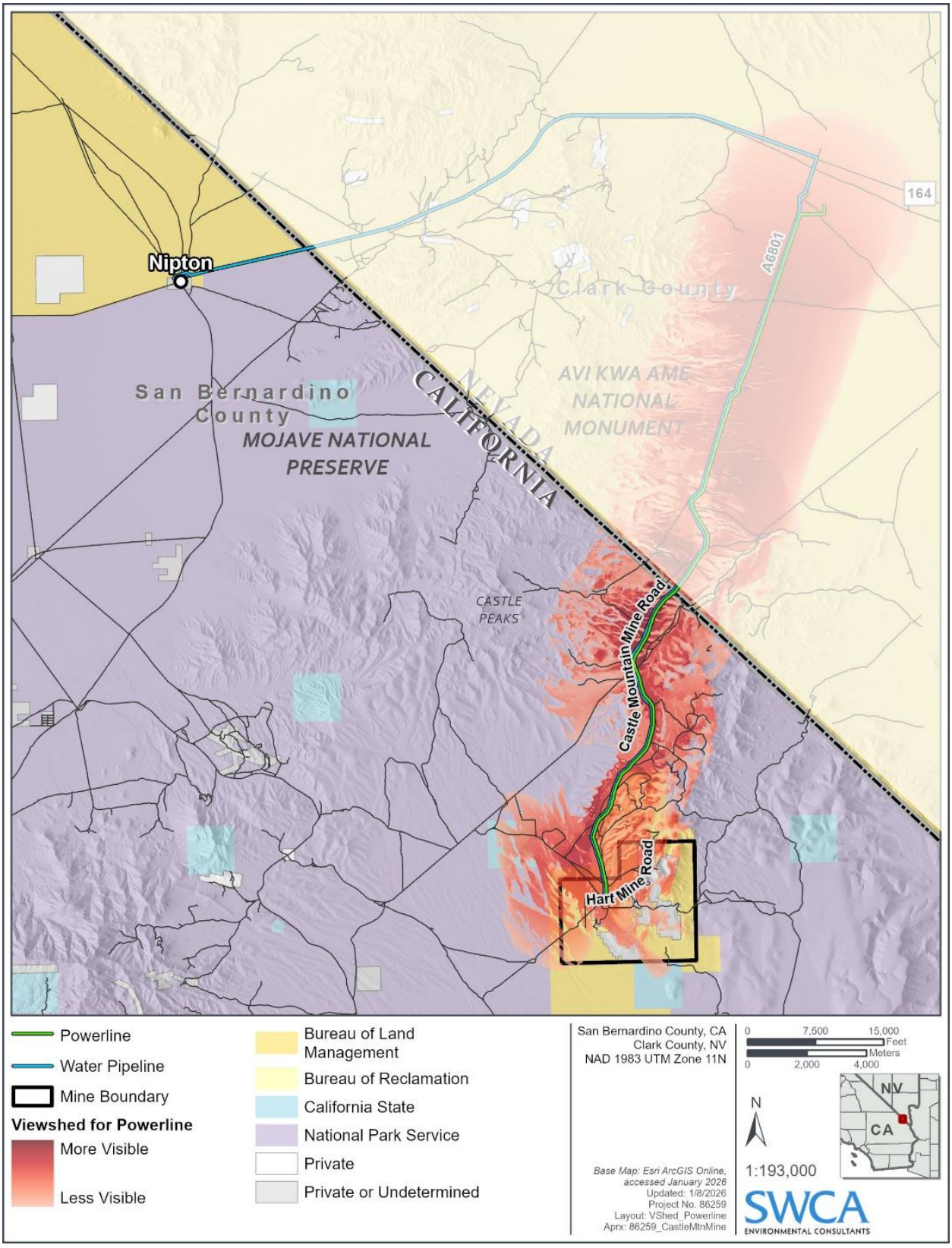


Figure 4.1-2. Viewshed Map of the Proposed Overhead Powerline

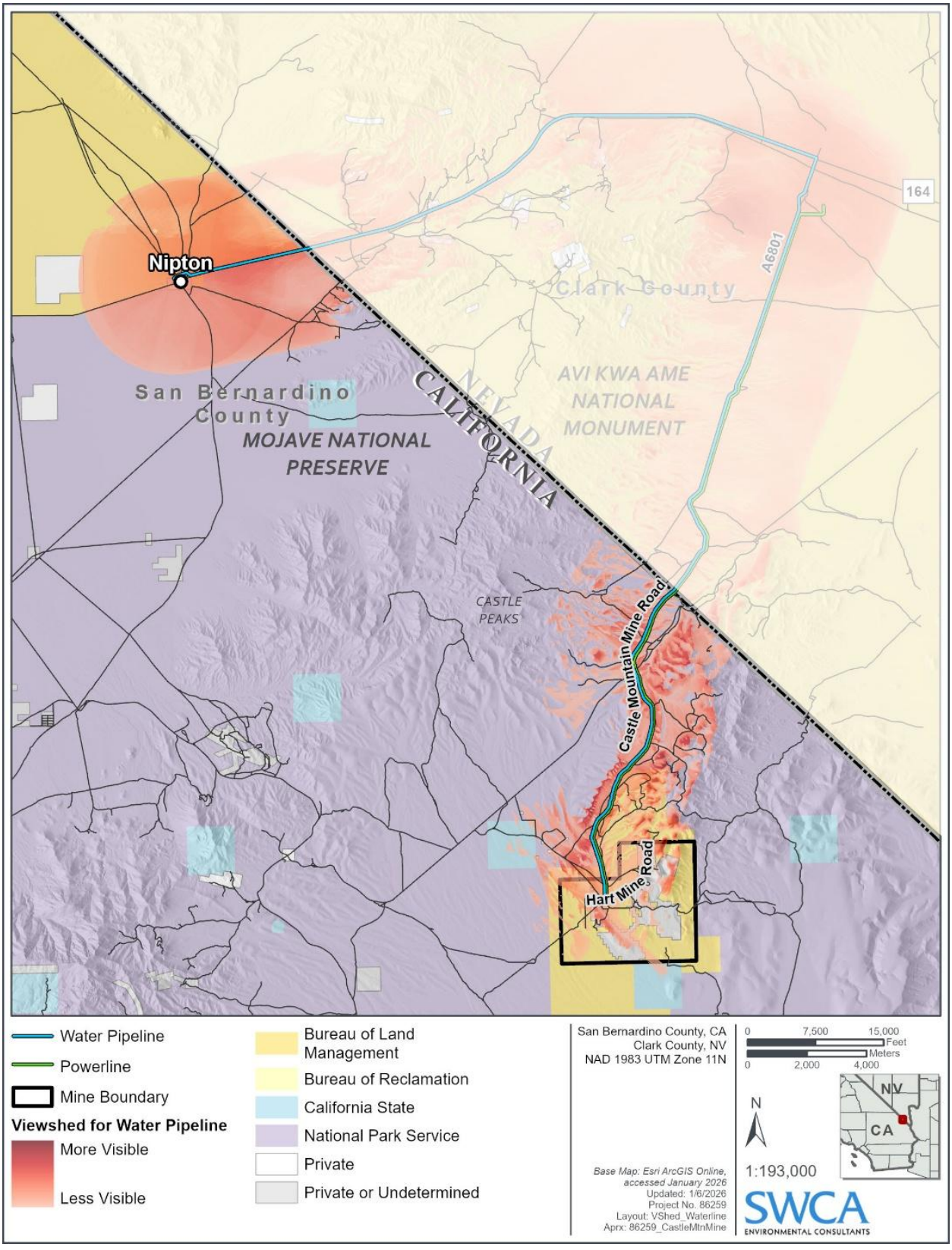


Figure 4.1-3. Viewshed Map of Proposed Waterline

4.1.4.6 Key Observation Points

The Project Area was viewed from potential viewer group locations in the surrounding area. Representative public viewpoints were identified for further analysis, based on dominance of the Project Area within the view, the relationship to visual resources, duration of views, and expected sensitivity of the viewer group. Of those representative viewpoints, KOPs were selected that best illustrate the visual changes that would occur from implementation of the proposed Project.

KOPs selected for further analysis represent visually sensitive areas that would have potential views of the proposed Project and consist of either high-use travel routes, public roadways serving nearby residential development, and public recreational facilities. Assessments of existing visual conditions take into consideration sensitive receptors and sensitive viewing areas in the Project vicinity. As a result, the following KOPs listed in Table 4.1-2 and shown in Figure 4.1-4 were identified for further analysis and as photo-simulation locations. These KOPs and the viewshed analysis are described in detail in the Project's Visual Resources Technical Report (SWCA 2026; see EIR Appendix 1).

Table 4.1-2. Key Observation Points

KOP	Viewer Type	Viewer Sensitivity	Distance to Project Area	Rationale for Selection
1: Ivanpah Road (NPS)	Travel Route / Recreation	High	5 miles	Views of the proposed mining area; similar to a location from the Mojave National Preserve VRI Report.
2: Hart Mine Road (NPS)	Travel Route / Recreation	High	2 miles	Views of the proposed mining area.
3: Lanfair Buttes (NPS)	Recreation	High	6 miles	Views of the proposed mining area. This location is near the Eagle Well view from the Mojave National Preserve VRI but the NPS site was selected with the focus on the petroglyph site and the NPS viewshed map indicates no visibility of the mine area.
4: Castle Mountain Mine Road	Travel Route	Moderate	Adjacent to Project Area	Views of the proposed mining area.
11: Nipton Road*	Travel Route	Moderate	Adjacent to Project Area	Proposed KOP from Nipton Road with views of Nipton and the proposed pipeline paralleling the road to the east on VRM Class III lands.
14: Castle Mountain Mine Road (Re-Alignment Area)*	Travel Route	Moderate	Adjacent to Project Area	View from road with view of road realignment, pipeline, and transmission line.

*Note: The number identification of KOPs 11 and 14 are intended to be consistent with the original field data and contrast rating worksheets and are therefore not shown in direct numerical sequence as part of the table or analysis.

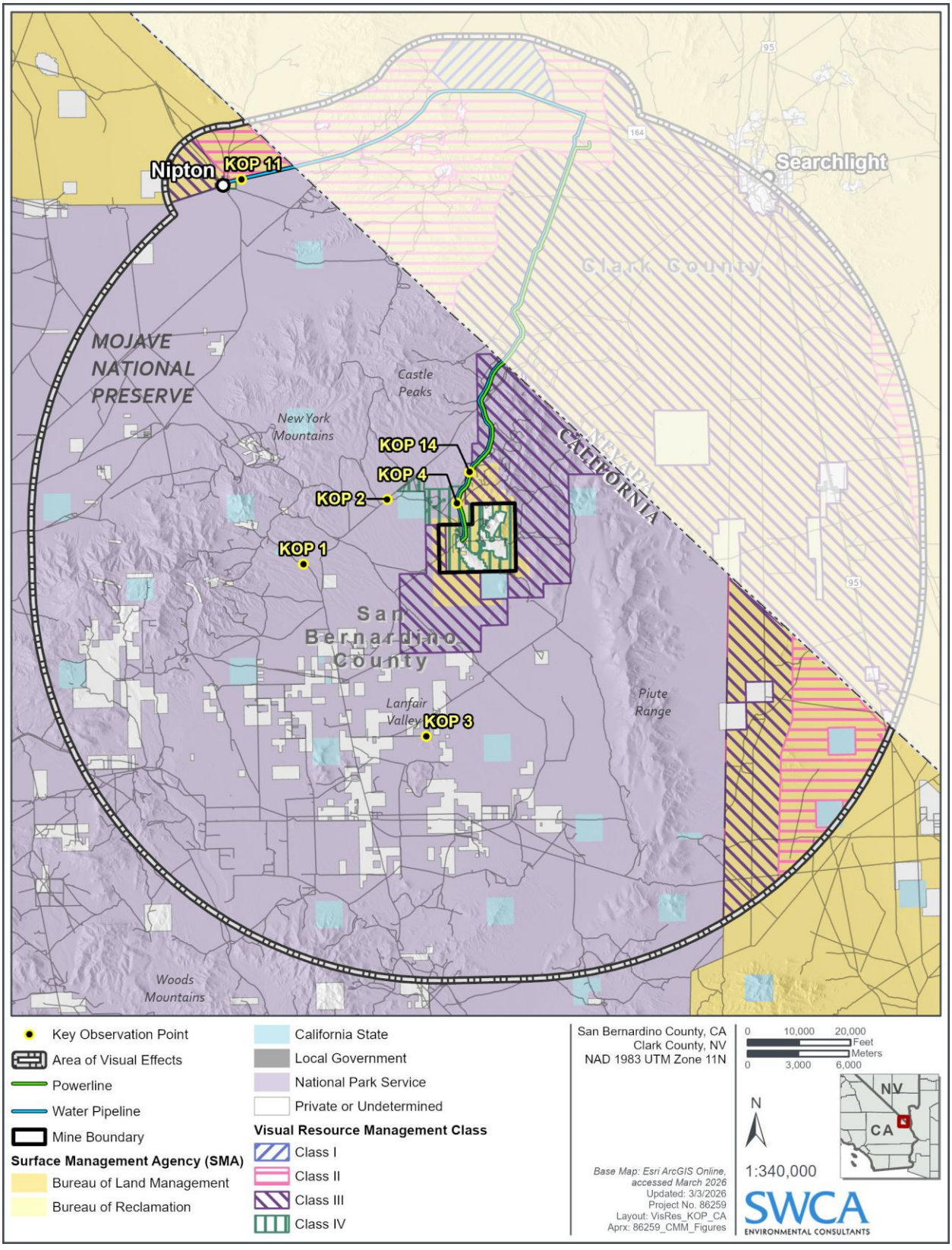


Figure 4.1-4. Overview of Key Observation Points

4.1.5 Project-Specific Impacts and Mitigation Measures

a) Would the project have a substantial adverse effect on a scenic vista?

IMPACT AE-1: THE PROJECT WOULD NOT HAVE A SUBSTANTIAL ADVERSE EFFECT ON A SCENIC VISTA. *(LESS THAN SIGNIFICANT)*

Scenic vistas are defined as high-quality views displaying good aesthetic and compositional value that can be seen from public viewpoints, and which would be adversely affected if a project substantially degrades the scenic landscape as seen from those viewpoints. The scenic vistas within the analysis area are primarily associated with the BLM- and NPS-administered public lands that are used for recreation, although viewers around the community of Nipton, California, have views of scenic vistas toward the distant mountain ranges on the horizon.

The Mojave National Preserve VRI identifies six views that represent areas that are important to visitors and/or may be affected by future land management or development decisions. According to the VRI, the proposed Project is visible from two of those views: the Keystone recreation area and Ivanpah Road, a major travel route within the Mojave National Preserve. The VRI determined that the proposed Project creates somewhat of a visual intrusion, but the distance of the view from the mining facility diminishes its overall impact as viewed from the Keystone recreation area. From Ivanpah Road, the proposed Project would be visible to recreational viewers and would attract, but not dominate, viewers' attention as the visual contrast would be weak-moderate without substantially diminishing the scenery observed along the road. The interim, concurrent, and final reclamation phases of the proposed Project would include grading and revegetation on the landforms, which would reduce the visual contrast of those components over time.

Additional scenic vistas are located along Hart Mine Road, along an unpaved recreational road, and at Lanfair Buttes, an area of interest featuring petroglyphs. The Ivanpah Road view was duplicated from the VRI to provide an updated analysis. All of these locations are within the Mojave National Preserve. The Castle Mountain Mine Road was included in the analysis and represents BLM-administered lands, although this road is likely primarily used for access to the Project Area and not by recreationists who may be pursuing scenic vistas. These areas are represented as KOPs as described in Table 4.1-2.

From the KOPs within the Mojave National Preserve (KOP 1: Ivanpah Road, KOP 2: Hart Mine Road, and KOP 3: Lanfair Buttes), the visual contrast introduced by the proposed Project would be weak-moderate. From those viewpoints, taller desert vegetation such as Joshua trees partially screens the mine areas from view, and the additional mining facilities would be visually congruent with the existing features which reduce the overall visual impact of the proposed Project. The proposed Project would attract viewer attention as evaluated from KOPs 1 and 2 as the mine facilities are more discernible. However, the proposed Project would not attract viewer attention at KOP 3 since the changes to the landscape would be more subtle due to viewer distance and screening from intervening vegetation. KOP 4 (Castle Mountain Mine Road) is directly adjacent to the mine, so the visual contrast of the proposed Project would be moderate-strong and would dominate views while being a major focus of viewer attention. KOP 11 (Nipton Road) is adjacent to the alignment of the underground water pipeline ROW where it parallels Nipton Road. From this viewpoint, the Mine Area is screened from view with no existing or proposed mining disturbance visible; however, the construction of the underground water pipeline would create a low, linear ground surface scar, introducing a weak-moderate level of visual contrast. The vegetation clearing in the water pipeline area would be noticeable and would generally attract attention, except in areas where variable topography would conceal its extent, for several years

after reclamation until the vegetation becomes reestablished and similar in composition to the adjacent undisturbed areas and the visual contrast of the ground surface scar is diminished. KOP 14 (Castle Mountain Mine Road Re-Alignment Area) is adjacent to the alignment of the utilities parallel to Castle Mountain Mine Road and views the roadway where it would be rerouted to avoid NPS-administered lands. The utilities would introduce tall, repetitive, skylined columnar transmission structures for the overhead powerline and a low, linear ground surface scar from the underground water pipeline and road realignment. Because these features are set in a generally undeveloped area, their introduction would attract attention and cause moderate visual contrast. The overhead powerline would parallel Castle Mine Road and would be a significant component of visual disturbance for motorists along the roadway; however, the road is sited between rolling hills and does not provide views of scenic vistas. The hilly topography also screens the power line from view, so it is not clearly visible from the scenic vistas in its vicinity. The water pipeline ROW and old road alignment would be reclaimed through revegetation, and the overhead powerline would be removed during final reclamation, which would decrease the overall visual impact of these components of the proposed Project over time.

The 2016 Mojave National Preserve VRI evaluated the proposed Project at the 1,474 acres of disturbance permitted under the Project's 1997 EIS/EIR. The proposed Project would disturb an additional 1,434 acres for the expansion of the surface mining operation within California, with an additional 380 acres being required for the 32-mile underground water pipeline and 16.5-mile overhead powerline, which would be visually subordinate to the relatively large mining facilities (i.e., the overburden sites).

Discrete views and KOPs were analyzed; however, the resulting impacts to those areas can be extrapolated to the landscape around the Project Area. Within the analysis area, the impacts to scenic vistas increase as the viewer's distance to the proposed Project decreases. It is probable that most recreationists seeking scenic vistas would visit areas of the Mojave National Preserve that do not offer views of the Project Area. In areas where the proposed Project would be visible, the disturbance areas are visually compatible with the existing mining operation, and the visual impact would not be substantial.

The component of the proposed Project occurring around Nipton consists only of the underground water pipeline. The clearing, trenching, and restoration for the pipeline ROW would cause temporary surface disturbance at ground level, which would be apparent along its alignment parallel to and north of Nipton Road. The pipeline ROW would be sited between an existing transmission line corridor and the roadway, and the additional linear surface disturbance would not substantially adversely affect the scenic vista looking toward the north because it would be visually compatible with the existing linear disturbance, and the scenic vistas toward the south of the road would be unimpacted. Once reclamation and revegetation is complete in the disturbance area, visual impacts would be significantly reduced with no visual impacts during operation. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact AE-1
The Project would not have a substantial adverse effect on a scenic vista.
Mitigation Measures
Mitigation is not necessary. Impact AE-1 would be less than significant.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

IMPACT AE-2: THE PROJECT WOULD NOT SUBSTANTIALLY DAMAGE SCENIC RESOURCES WITHIN A STATE SCENIC HIGHWAY. *(NO IMPACT)*

As described in Section 4.1.1, *Existing Conditions*, no State-designated scenic highways are adjacent to or within the vicinity of the Project Area. The closest officially designated State Scenic Highway is SR 247, approximately 112 miles southwest of the Project Area near Barstow. The nearest eligible State Scenic Highway is SR 40, approximately 30 miles from the Project Area. The nearest County Scenic Route is Route 66, located approximately 23 miles south of the Project Area. Given that no designated scenic resources within a State Scenic Highway would be visible from the Project Area, the proposed Project would not substantially damage scenic resources within a State Scenic Highway. Therefore, *no impact* would occur.

Impact AE-2
The Project would not substantially damage scenic resources within a State Scenic Highway.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings, or in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

IMPACT AE-3: THE PROJECT WOULD NOT, IN NONURBANIZED AREAS, SUBSTANTIALLY DEGRADE THE EXISTING VISUAL CHARACTER OR QUALITY OF PUBLIC VIEWS OF THE PROJECT AREA AND ITS SURROUNDINGS. *(LESS THAN SIGNIFICANT)*

The analysis area is in a non-urbanized area, and the scenery consists of expansive, generally undeveloped desert landscapes. The mining operation area of the proposed Project is visible from the Keystone and Ivanpah Road views, although the viewshed has retained high scenic quality because of the character of the surrounding landscape. The mine portion of the proposed Project would expand the scale of mining disturbance on the landscape, although it would be visually compatible with the existing mine operations, and the Project Area is somewhat screened from views by natural landscape features, such as Joshua trees. Because the proposed Project is sited adjacent to the existing mining operation, impacts to the visual character of the landscape are reduced by maintaining undeveloped areas to the extent practicable. The proposed Project has the greatest impact to visual character at the viewpoints nearest to the Project Area. Important public views within the Mojave National Preserve around the Project Area are in areas where the mining disturbance is distant enough to not substantially degrade the visual character of the landscape.

The underground pipeline portion of the proposed Project around the community of Nipton would have an apparent impact to the visual character in that location due to vegetation community changes from clearing, trenching, and revegetating the pipeline's ROW. The pipeline ROW is parallel to and between a transmission line and a roadway and would be visually compatible with the linear disturbances in this area. The pipeline ROW is offset from Nipton Road by 150 feet, which would somewhat conceal its footprint from public views along the roadway. The pipeline ROW is offset from small residential areas by around 200 feet on average. The residential areas are amid other industrial developments, including a railroad, a gravel pile, and a staging/storage area, so the addition of the underground water pipeline would be compatible with the existing land uses in the immediate vicinity. The pipeline ROW would be revegetated, which would reduce its overall visual impact and the visual character in this area would not be permanently degraded. The overhead powerline portion of the proposed Project would introduce tall, repetitive, skylined columnar transmission structures along Walking Box Ranch Road to CMM. Under prior mine permitting, a transmission line was approved by the BLM along the same route as the proposed Project but was removed in 2011, resulting in the current landscape appearing largely natural in character with little evidence of this prior transmission line. The overhead powerline would be visually compatible with prior disturbances in the area and removed during final reclamation, which would decrease the overall impact to visual character over time. The proposed Project would not substantially alter the aesthetics of the analysis area nor would it substantially degrade the existing visual character or quality of public views of the Project Area and its surroundings. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact AE-3
The Project would not conflict with applicable zoning and other regulations governing scenic quality.
Mitigation Measures
Mitigation is not necessary. Impact AE-3 would be less than significant.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

IMPACT AE-4: THE PROJECT WOULD NOT CREATE A NEW SOURCE OF SUBSTANTIAL LIGHT OR GLARE THAT WOULD ADVERSELY AFFECT DAY OR NIGHTTIME VIEWS IN THE AREA. *(LESS THAN SIGNIFICANT)*

The proposed Project includes the development of new facilities within the mine area that would require new sources of light for safety, construction, and functionality. No lights are proposed for the operation of the underground water pipeline or overhead powerline. The impact of the new light sources would be cumulative with the existing lighting associated with the currently permitted mining operation. The nearest Dark Sky Park in the vicinity of the Project Area is Death Valley National Park, which is 70 miles to the northwest at its nearest border. The lighting associated with the proposed Project would not be expected to impact Death Valley National Park from a distance greater than 70 miles. However, the additional lighting sources may have the potential to slightly increase brightness in recreation areas in the vicinity of the Project Area (i.e., the public lands within the NPS- and BLM-administered areas). There are no areas along the Project boundary that would exceed the maximum allowable light trespass of 0.1 foot-candles (WestLand 2024), and the proposed Project would comply with the County light trespass ordinance. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact AE-4
The Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.
Mitigation Measures
Mitigation is not necessary. Impact AE-4 would be less than significant.

4.1.6 Cumulative Impacts

IMPACT AE-5: THE PROJECT WOULD NOT CONTRIBUTE TO SUBSTANTIAL ADVERSE CUMULATIVE IMPACTS RELATED TO AESTHETICS. *(LESS THAN SIGNIFICANT)*

The discussion of cumulative impacts relates to the potential for the proposed Project to contribute to an aggregate change in visual quality from the surrounding public viewing areas, taking into consideration existing as well as proposed development. The geographic scope of the cumulative impact analysis for aesthetics is within the boundary of the proposed Project, and all land uses and roadways surrounding the boundary of the areas that would be affected by the proposed Project. Cumulative impacts on aesthetics are generally localized, and aesthetic changes at a site would not generally impact aesthetics at another site if the sites were not visually connected.

The area of analysis for cumulative impacts is the same as the aesthetics analysis area (15-mile buffer of the mine area and 2-mile buffer of the water pipeline and powerline ROWs). The character elements of cumulative development occurring within the analysis area have the potential to contribute to the overall visual character of the viewshed and could affect the quality of existing views of the landscape. Both the proposed Project and other development occurring or planned within the analysis area could combine to permanently alter the visual character of the landscape and diminish the quality of existing views of valued scenic resources.

The following projects were identified as projects in California occurring within the cumulative impacts analysis area for aesthetic resources:

- **Eldorado Pisgah Lugo Transmission Line Rating Remediation Project (DOI-BLM-CA-D010-2023-0005-EA):** At the time of preparing this document, this project was undergoing its National Environmental Policy Act (NEPA) process to permit the remediation of an existing 220-kilovolt (kV) transmission line by replacing parts of the system, including structures and conductors. This project is within the proposed Project's 15-mile buffer around the mine area within the Mojave National Preserve.
- **Rigo Favela Access Road ROW (DOI-BLM-CA-D090-2024-0003-CX):** This project obtained a Categorical Exclusion in 2024 to build an access road to a private property near Nipton and is within the proposed Project's underground water pipeline 2-mile buffer.

Existing mining and other resource-related facilities in the area are generally set back from sensitive viewpoints, which reduces their noticeability. As a result, the cumulative effect of the proposed Project, when seen in the context of the projects listed above, would be a minor source of visual disturbance within the analysis area. Development of the Project and cumulative projects would not impact public views within the Mojave National Preserve around the Project Area, and no State-designated scenic highways are adjacent to or within the vicinity of the Project Area. As such, implementation of the proposed Project would not contribute to an aggregate change in visual quality from the surrounding

public viewing areas or vistas. Accordingly, the proposed Project would result in minimal contribution to the cumulative impact of compounding development projects within the analysis area, and this impact would be *less than significant* and less than cumulatively considerable.

Impact AE-5 (Cumulative Impacts)
The Project would not contribute to substantial adverse cumulative impacts related to aesthetics.
Mitigation Measures
Mitigation is not necessary. Impact AE-5 would be less than significant.

4.2 AGRICULTURE AND FORESTRY RESOURCES

This section of the EIR analyzes potential impacts to agriculture and forestry resources resulting from the implementation of the proposed Project. The analysis is based on a review of existing resources, technical data, and applicable laws, regulations, and guidelines, including the environmental checklist criteria set forth in Appendix G of the State CEQA Guidelines.

4.2.1 Existing Conditions

4.2.1.1 Natural Resources Conservation Service Capability Classes

Agricultural resources relevant to the land use planning process are those that have been classified by the California Department of Conservation (CDOC) as significant to the statewide or local agricultural economy. The classification of agricultural lands is based on factors such as soil type, slope, and susceptibility to flooding and erosion. Optimal agricultural soils are characterized as deep, generally well-drained, and easily cultivated. According to the Natural Resources Conservation Service (NRCS), the most productive soils are characterized as Class I and Class II, while soils with lower suitability for agriculture are classified as Class III to Class VIII, as described below (NRCS 2014):

- **Class I.** These soils have few limitations that restrict their use and are typically used for vegetables, seed crops, orchards, and other irrigated specialty crops and irrigated field crops.
- **Class II.** These soils have minor to moderate limitations that reduce the choice of plants or require moderate conservation practices. Uses are very similar to those found on Class I soils.
- **Classes III and IV.** These soils have moderate to severe limitations that reduce the choice of plants or that require special conservation practices, or both. In some situations, the Class III soils may be used for some of the crop types that are typically found in Class I and II soils, but they are more typically used for specialty crops, forage lands, mixed croplands, and dryland field crops. Irrigated Class IV soils are commonly used for vineyards.
- **Class V.** These soils are not likely to erode but have other limitations, impractical to remove, that limit their use.
- **Class VI.** These soils have severe limitations that make them generally unsuitable for cultivation, and they have commonly been used for rangeland and dryland grain production.
- **Class VII.** These soils have very severe limitations that make them unsuitable for cultivation, and these lands are primarily used as rangelands for grazing.
- **Class VIII.** These soils and landforms have limitations that nearly preclude their use for commercial crop production; however, some grazing occurs on these lands.

4.2.1.2 Farmland Mapping and Monitoring Program

The CDOC Division of Land Resource Protection developed the Farmland Mapping and Monitoring Program (FMMP) to identify farmland designations throughout the state to assist in analyzing potential impacts to agricultural land. Land designations include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-up Land, and Other Land classifications. Definitions for the identified land use designations are sourced from the FMMP (CDOC 2025a):

- **Prime Farmland.** Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Farmland of Statewide Importance.** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Unique Farmland.** Farmland of lesser-quality soils used to produce the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- **Farmland of Local Importance.** Land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.
- **Urban and Built-up Land.** Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- **Other Land.** Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines or borrow pits; and water bodies smaller than 40 acres. Vacant and non-agricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

4.2.1.3 Project Area Setting

The Project Area consists of private land owned by CMV and unpatented mining claims on BLM-administered lands in San Bernardino County, California. The Project Area is composed of rural desert land within the BLM's California Desert District, under jurisdiction of the Needles Field Office, and within the planning boundary of the California Desert Conservation Area (CDCA) Plan. Soils within the Project Area primarily consist of gravels and lesser sands with varying amounts of silt and clay (NewFields 2025; EIR Appendix 2). Vegetation within the Project Area is representative of the eastern Mojave Desert, dominated by blackbrush (*Coleogyne ramosissima*) scrub with scattered Joshua tree (*Yucca brevifolia*) woodland habitats. The closest federal grazing allotment is approximately 20 miles northwest of the Project Area (BLM 2025).

No agricultural uses or operations occur within the vicinity of the Project Area. There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance in the Project Area, nor is there any land under a Williamson Act contract (CDOC 2022). The closest designated farmland is approximately 30 miles to the southeast. Additionally, there is no forest or timberland in the Project Area, as defined by California Public Resources Code (PRC) 4526 and California Government Code 51104(g).

4.2.2 Regulatory Setting

4.2.2.1 Federal

FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976

The Federal Land Policy and Management Act of 1976 (FLPMA) consolidated public land management under a single federal agency, the BLM within the Department of the Interior, creating more consistent oversight of agricultural and forestry-related uses on public lands. FLPMA serves as the primary regulatory framework for the management of public lands under multiple-use and sustained yield principles, including livestock grazing and timber production, along with recreation, mineral development, wildlife habitat, and cultural and scenic resources conservation. Under FLPMA, the BLM is required to inventory resources and establish resource management plans that set guidelines for grazing and timber activities.

CALIFORNIA DESERT CONSERVATION AREA PLAN

The CDCA, encompassing approximately 25 million acres in southern California, was designated by Congress in 1976 under FLPMA. Of the 25 million acres, the BLM administers approximately 12 million acres. Section 601 of FLPMA, as directed by Congress, required the BLM to prepare a comprehensive, long-range plan for the management of use, development, and protection of public lands within the CDCA. The resulting CDCA Plan (BLM 1999) is founded on principles of multiple use, sustained yield, and the maintenance of environmental quality. The CDCA Plan provides overarching regional guidance for the management of BLM-administered lands within the CDCA and sets forth long-term objectives for both the protection and use of the California desert. The plan comprises 12 distinct elements, including the Motorized-Vehicle Access Element, which outlines the travel management framework incorporating activity-level decisions for high-use areas. Additionally, the Livestock Grazing Element delineates the geographic boundaries of livestock allotments, specifies forage use types, and establishes maximum stocking levels for each allotment.

FARMLAND PROTECTION POLICY ACT

The Farmland Protection Policy Act of 1981 (FPPA), governed by the NRCS, was enacted to minimize the effect of federal programs on the permanent conversion of farmland to nonagricultural land uses. The FPPA requires that federal programs be administered to be compatible with state and local government units, to the greatest extent feasible, along with private programs and policies to protect farmland. In the context of the FPPA, farmland is defined to include Prime Farmland, Unique Farmland, and Land of Statewide or Local Importance. Farmland subject to FPPA requirements does not have to be currently used for cropland; it may consist of forestland, pastureland, cropland, or other land, excluding urban built-up land and water sources.

TAYLOR GRAZING ACT OF 1934

The Taylor Grazing Act was enacted to reduce overgrazing and soil degradation on unreserved public lands by authorizing the federal government to regulate livestock use through the issuance of grazing permits. Following the passage of the Taylor Grazing Act, the Grazing Service was established to administer grazing permits and oversee rangeland management. In 1946, the Grazing Service merged with the General Land Office to form the BLM, which assumed responsibility for managing all unreserved public lands, including those designated for livestock grazing, and continues to manage these lands in accordance with federal statutes and rangeland management standards.

AGRICULTURAL CONSERVATION EASEMENT PROGRAM

The NRCS established the Agricultural Conservation Easement Program to support landowners and other entities in protecting, restoring, and enhancing working farms and ranches through conservation easements. Through the program, the NRCS provides financial assistance for the acquisition of Agricultural Land Easements, with the objective of conserving agricultural land and maintaining the viability of working farms in agriculture.

THE WILDERNESS ACT OF 1964

The Wilderness Act established the National Wilderness Preservation System and granted Congress the authority to designate wilderness areas. The U.S. Fish and Wildlife Service (USFWS), U.S. Forest Service (USFS), National Park Service (NPS), and BLM collectively manage over 800 designated wilderness areas. Within the National Wildlife Refuge System, there are 75 wilderness areas on 63 refuges across 26 states.

4.2.2.2 State

FARMLAND MAPPING AND MONITORING PROGRAM

The purpose of the FMMP, authorized by the CDOC Division of Land Resource Protection, is to provide objective data to decision makers to assist with the analysis of impacts on agricultural resources in California. The FMMP generates maps of important farmlands that integrate soil resource quality and irrigation status with current land use information to classify agricultural land based on its suitability for crop production. The maps are updated on a biennial basis in even calendar years.

The FMMP classifies land into several designations based on the criteria described above. The FMMP designations include, but are not limited to, Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Grazing Land, Farmland of Local Importance, Farmland of Local Potential, Urban and Built-up Land, and Other Land. Under CEQA, the designations for Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are defined as “Agricultural Land” and “Farmland” pursuant to PRC 21060.1 and State CEQA Guidelines Appendix G.

CORTESE-KNOX-HERTZBERG LOCAL GOVERNMENT REORGANIZATION ACT OF 2000

The Cortese-Knox-Hertzberg (CKH) Local Government Reorganization Act of 2000 (CKH Act) establishes uniform procedures for local government reorganizations, including city incorporations, annexations to a city or special district, and city and special district consolidations. The CKH Act established Local Agency Formation Commissions (LAFCOs), which are vested with various authorities such as approving or denying local boundary changes, discouraging urban sprawl, and promoting orderly development of local governmental entities. Additionally, a primary objective of LAFCOs is to assess the potential impacts of organizational changes to existing agricultural lands, with particular emphasis on Prime Farmland. The CKH Act discourages the conversion of prime agricultural land for development.

WILLIAMSON ACT

The Williamson Act, also known as the Land Conservation Act of 1965, authorizes local governments to establish contractual agreements with private landowners to restrict specific parcels of land to agricultural or open space uses. Under these agreements, landowners receive substantially reduced property tax assessments based on agricultural and open space uses rather than the full market value. The CDOC

provides guidance and support to all levels of government and landowners in the interpretation of the Williamson Act.

CALIFORNIA ASSEMBLY BILL 1492

Assembly Bill (AB) 1492 provides additional guidance for development on land under a Williamson Act contract or other agricultural land conservation contracts. According to AB 1492, the construction of commercial, industrial, or residential buildings that are not associated with agricultural operations and are not authorized by the contract or by local regulations is considered a material breach of the conservation contract. If such a breach occurs, the CDOC is required to notify the appropriate local government and require the landowner to cease the activity that resulted in the violation. Financial restitution may also be required in some instances.

4.2.2.3 Local

SAN BERNARDINO COUNTYWIDE PLAN

The *San Bernardino Countywide Plan* (CWP), adopted by the Board of Supervisors in 2020, updates and expands the County's General Plan by addressing the physical, social, and economic issues facing the unincorporated portions of the county (County of San Bernardino 2024a). The CWP consists of the County Policy Plan, the County Business Plan, and a communities' plan. The County Policy Plan serves as the County's General Plan for unincorporated areas and includes policy direction for public safety, healthcare, and other regional services administered by the County in both incorporated and unincorporated areas. The Policy Plan contains 11 elements in total, organized by section, including the built environment, resources and conservation, safety and security, and economy and wellness. The County Business Plan consists of a policy-based governance element along with an implementation plan. The communities plan consists of 35 Community Action Guides that provide a framework for communities to create future character and independent identity through community actions.

Land Use Element

The Land Use Element of the County Policy Plan (County of San Bernardino 2020a) designates the distribution of land uses for the County's unincorporated areas, establishes goals for the growth of the County, provides direction for new development, and directs the orderly expansion of incorporated areas. The element contains goals, policies, and land use maps designed to allow development that adds value to the County and its communities, with regard to function, design, and fiscal return. The County classifies agricultural land under the Open Space (OS), Resource Conservation (RC), Agriculture (AG), and Floodway (FW) land use designations.

4.2.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. The Project would result in significant adverse impacts related to agriculture if it would:

a) convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use;

b) conflict with existing zoning for agricultural use or with a Williamson Act contract;

c) conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC 12220(g)), timberland (as defined by PRC 4526), or timberland zoned Timberland Production (as defined by California Government Code 51104(g));

d) result in the loss of forest land or conversion of forest land to non-forest use; or

e) involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

Project analysis under each threshold is discussed in Section 4.2.5, *Project-Specific Impacts and Mitigation Measures*, below.

4.2.4 Impact Assessment Methodology

In support of this analysis, available database information was reviewed to identify designated Farmland, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance within the Project Area and adjacent area. Prime Farmland, Unique Farmland, and Farmland of Statewide Importance are protected under PRC 21060.1; therefore, a project that would result in the conversion of designated farmland under PRC 21060.1 would result in a significant impact to the environment.

4.2.5 Project-Specific Impacts and Mitigation Measures

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

IMPACT AG-1: THE PROJECT WOULD NOT CONVERT PRIME FARMLAND, UNIQUE FARMLAND, OR FARMLAND OF STATEWIDE IMPORTANCE TO NON-AGRICULTURAL USE. *(NO IMPACT)*

The CDOC FMMP generates maps to analyze impacts to the statewide agricultural resources. Agricultural lands in California are classified based on soil quality and irrigation status. According to FMMP data, no portion of the Project Area is designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (CDOC 2022). Therefore, *no impact* to protected farmland would occur.

Impact AG-1
The Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
Mitigation Measures
Mitigation is not necessary. No impacts would occur.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

IMPACT AG-2: THE PROJECT WOULD NOT CONFLICT WITH EXISTING ZONING FOR AGRICULTURAL USE OR WITH A WILLIAMSON ACT CONTRACT. *(NO IMPACT)*

The Project Area is in the Resource/Land Management (RLM) and RC land use and zoning designations. Although a primary objective of the RLM land use designation is to manage, preserve, and protect natural resources, including agricultural/grazing lands, watersheds, minerals, and wildlife habitat areas, as well as open space areas not otherwise protected or preserved, the Project Area is not currently used for agricultural activities or operations. Additionally, there is no land under a Williamson Act contract on the Project Area (CDOC 2025b). As a result, the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and *no impact* would occur.

Impact AG-2
The Project would not conflict with existing zoning for agricultural use or with a Williamson Act contract.
Mitigation Measures
Mitigation is not necessary. No impacts would occur.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined by Public Resources Code 12220(g)), timberland (as defined by Public Resources Code 4526), or timberland zoned Timberland Production (as defined by California Government Code Section 51104(g))?

IMPACT AG-3: THE PROJECT WOULD NOT CONFLICT WITH EXISTING ZONING FOR, OR CAUSE THE REZONING OF, FOREST LAND, TIMBERLAND, OR TIMBERLAND ZONED TIMBERLAND PRODUCTION. *(NO IMPACT)*

The Project Area is zoned for Resource Conservation (RC), which provides sites for open space and recreational activities, single-family homes on very large parcels, and similar and compatible uses (County of San Bernardino 2020a). There is no forest or timberland within the Project Area. Therefore, the Project would not result in the loss of forest land or conversion of forest land to non-forest use, and *no impact* would occur.

Impact AG-3
The Project would not conflict with existing zoning for, or cause the rezoning of, forest land, timberland, or timberland zoned Timberland Production.
Mitigation Measures
Mitigation is not necessary. No impacts would occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

IMPACT AG-4: THE PROJECT WOULD NOT RESULT IN THE LOSS OF FOREST LAND OR CONVERSION OF FOREST LAND TO NON-FOREST USE. *(NO IMPACT)*

There is no forest land within the Project Area. Therefore, the Project would not result in the loss of forest land or conversion of forest land to non-forest use, and *no impact* would occur.

Impact AG-4
The Project would not result in the loss of forest land or conversion of forest land to non-forest use.
Mitigation Measures
Mitigation is not necessary. No impacts would occur.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

IMPACT AG-5: THE PROJECT WOULD NOT INVOLVE OTHER CHANGES IN THE EXISTING ENVIRONMENT WHICH, DUE TO THEIR LOCATION OR NATURE, COULD RESULT IN CONVERSION OF FARMLAND TO NON-AGRICULTURAL USE OR CONVERSION OF FOREST LAND TO NON-FOREST USE. *(NO IMPACT)*

As described in Impacts AG-1 through AG-4, implementation of the proposed Project would not result in the conversion of agricultural land to non-agricultural use or conversion of forest land to non-forest use. The Project would construct an underground water pipeline and an overhead powerline within existing ROWs, as well as expand mine features of CMM in the historic Hart Mining District of San Bernardino County. Due to location, implementation of the Project would not be expected to produce dust or other emissions that could interfere with agriculture in the western portion of the County. Implementation of the Project would result in increased groundwater use by an additional 1,625 acre-feet per year supplied from wells within the Lanfair Valley Groundwater Basin and the Ivanpah Groundwater Basin. However, the increase in groundwater use is not anticipated to have any impacts on agricultural or forestry resources and is discussed further in Section 4-10, *Hydrology and Water Quality*, of the EIR. There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the Project Area (CDOC 2022). In addition, there is no forest or timberland within the Project Area. Implementation of the Project would not involve other changes in the existing environment that could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. Therefore, *no impact* would occur.

Impact AG-5
The Project would not result in other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.
Mitigation Measures
Mitigation is not necessary. No impacts would occur.

4.2.6 Cumulative Impacts

IMPACT AG-6: THE PROJECT WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE IMPACT TO AGRICULTURAL OR FORESTRY RESOURCES. *(NO IMPACT)*

Since the Project would not result in impacts related to agriculture and forestry resources, it would not contribute to or be combined with other cumulative projects to produce related cumulatively considerable impacts. Therefore, *no cumulative impacts* related to agricultural or forestry resources would occur.

Impact AG-6 (Cumulative Impacts)
The proposed Project would not contribute to the cumulative loss of farmland or forest land within the County.
Mitigation Measures
Mitigation is not necessary. No impacts would occur.

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4.3 AIR QUALITY

This section of the EIR analyzes potential impacts to air quality resulting from the implementation of the proposed Project. The analysis is based on review of existing resources, technical data, and applicable laws, regulations, and guidelines, including the environmental checklist criteria set forth in Appendix G of the State CEQA Guidelines, as well as technical reports prepared for the proposed Project.

4.3.1 Existing Conditions

4.3.1.1 Regional Climate and Geography

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The Project Area is in unincorporated San Bernardino County within the Mojave Desert Air Basin (MDAB), which encompasses a 21,000-square-mile area that includes the majority of San Bernardino County, the eastern portion of Kern County, the eastern portion of Riverside County, and the northeastern portion of Los Angeles County. The MDAB is composed of four California air districts—the Mojave Desert Air Quality Management District (MDAQMD), Antelope Valley Air Quality Management District, Eastern Kern Air Pollution Control District, and eastern portion of the South Coast Air Quality Management District (SCAQMD). MDAQMD has jurisdiction within the San Bernardino County portion of MDAB. The ambient concentrations of air pollutants are determined by the amount of emissions released by the sources of air pollutants and the atmosphere's ability to transport and dilute such emissions. These conditions collectively establish the environmental baseline against which the Project's air quality impacts are evaluated, consistent with State CEQA Guidelines Section 15125(a). Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the emissions released by existing air pollutant sources.

The MDAB includes the desert portion of San Bernardino County and the eastern portion of Riverside County. The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB. The MDAB is separated from the Southern California Coastal and Central California valley regions by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses.

The Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevada in the north by the Tehachapi Pass (3,800 feet in elevation), and bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 feet). The Mojave Desert is bordered on the southwest by the San Bernardino Mountains, separated from the San Gabriel Mountains by the Cajon Pass (4,200 feet). A lesser channel lies between the San Bernardino Mountains and the Little San Bernardino Mountains (the Morongo Valley). The Palo Verde Valley portion of the Mojave Desert lies in the low desert, at the eastern end of a series of valleys (notably the Coachella Valley) whose primary channel is the San Gorgonio Pass (2,300 feet) between the San Bernardino and San Jacinto Mountains.

During the summer, the MDAB is generally influenced by a Pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse

prior to reaching the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The MDAB averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01 inch of precipitation). The MDAB is classified as a dry-hot desert climate with portions classified as dry-very hot desert to indicate at least 3 months have maximum average temperatures over 100.4 degrees Fahrenheit (°F).

The MDAB experiences seasonal variations. In winter, freezing temperatures, strong winds, and precipitation occur as snow above 5,000 feet in elevation and as rain below this level. Most precipitation occurs between November and April. During summer, brief, high-intensity thunderstorms may develop suddenly and can cause high winds and localized flash flooding.

The local meteorology of the project site and surrounding area is represented by measurements recorded at the National Climatic Data Center (NCDC) Searchlight, Nevada, meteorological station. The normal annual precipitation is approximately 7.8 inches. December temperatures range from a normal minimum of 36.6°F to a normal maximum of 53.0°F, and July temperatures range from a normal minimum of 72.3°F to a normal maximum of 97.4°F (NCDC 2025).

4.3.1.2 Criteria Air Pollutants

Both the federal and state governments have established ambient air quality standards for outdoor concentrations of specific pollutants in order to protect public health and welfare. These pollutants are referred to as "criteria air pollutants," and the national and state standards have been set at levels considered safe to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly, with a margin of safety; and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment, either directly or in reaction with other pollutants due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified and regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in the air quality with the MDAB. The criteria air pollutants for which national and state standards have been promulgated and which are most relevant to current air quality planning and regulation in the MDAB and MDAQMD include carbon monoxide (CO), ozone (O_3), particulate matter, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, sulfates, and hydrogen sulfide (H_2S). These pollutants, as well as volatile organic compounds (VOCs) and toxic air contaminants (TACs), are discussed in the following paragraphs. The national and state criteria pollutants and the applicable ambient air quality standards are listed in Table 4.3-1.

Table 4.3-1. State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
			Primary	Secondary
Ozone (O_3)	1 hour	0.09 ppm (180 µg/m³)	–	Same as primary
	8 hour	0.070 ppm (137 µg/m³)	0.070 ppm (137 µg/m³)	
Respirable particulate matter (PM_{10})	24 hour	50 µg/m³	150 µg/m³	Same as primary
	Annual mean	20 µg/m³	–	
Fine particulate matter ($PM_{2.5}$)	24 hour	–	35 µg/m³	Same as primary
	Annual mean	12 µg/m³	9.0 µg/m³	15 µg/m³

Pollutant	Averaging Time	California Standards	National Standards	
			Primary	Secondary
Carbon monoxide (CO)	1 hour	20 ppm (23 µg/m³)	35 ppm (40 mg/m³)	–
	8 hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	–
Nitrogen dioxide (NO_2)	1 hour	0.18 ppm (339 µg/m³)	100 ppb (188 µg/m³)	–
	Annual mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	Same as primary
Sulfur dioxide (SO_2)	1 hour	0.25 ppm (655 µg/m³)	75 ppb (196 µg/m³)	–
	3 hour	–	–	0.5 ppm (1,300 µg/m³)
	24 hour	0.04 ppm (105 µg/m³)	0.14 ppm	–
	Annual mean	–	0.030 ppm	10 ppb
Lead	30-day average	1.5 µg/m³	–	–
	Calendar quarter	–	1.5 µg/m³	Same as primary
	Rolling 3-month average	–	0.15 µg/m³	Same as primary
Visibility-reducingparticles	8 hour	10-mile visibility standard, extinction of 0.23 µg/m³ per kilometer	No national standards	
Sulfates	24 hour	25 µg/m³		
Hydrogen sulfide (H_2S)	1 hour	0.03 ppm (42 µg/m³)		
Vinyl chloride	24 hour	0.01 ppm (26 µg/m³)		

Source: CARB (2024).

Notes: ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter; – = no standard.

OZONE

O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly nitrogen oxides (NO_X) and VOCs. The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric ozone) and at the Earth's surface in the troposphere (ozone). The O_3 regulated by the U.S. Environmental Protection Agency (USEPA) and CARB as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good" O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed. O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children (USEPA 2025a).

NITROGEN DIOXIDE

NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitrous oxide (N_2O), which is a colorless, odorless gas. NO_2 is a member of a family of chemicals comprised of nitrogen and oxygen that are collectively known as nitrogen oxides. The two most prevalent nitrogen oxides are NO_2 and nitric oxide (NO), and the combination is often referred to as NO_X. NO_X plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NO_X is formed from fuel combustion under high temperature or pressure. In addition, NO_X is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers. NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections (USEPA 2025a).

CARBON MONOXIDE

CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, automobile exhaust accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions (USEPA 2025a).

SULFUR DIOXIDE

SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can injure lung tissue and reduce visibility and the level of sunlight. SO_2 can also yellow plant leaves and erode iron and steel (USEPA 2025a).

PARTICULATE MATTER

Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. Particulate matter 10 microns in diameter or smaller (PM_{10}) and particulate matter 2.5 microns in diameter or smaller ($PM_{2.5}$) represent fractions of particulate matter. Coarse particulate matter (PM_{10}) is about $^1/_7$ the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush and waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) is roughly $^1/_{28}$ the

diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_X), NO_X, and VOCs.

PM_{10} and $PM_{2.5}$ pose a greater health risk than larger-sized particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM_{10} and $PM_{2.5}$ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the bloodstream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. Whereas PM_{10} particles tend to collect in the upper portion of the respiratory system, $PM_{2.5}$ particles are so tiny that they can penetrate deeper into the lungs and damage lung tissue. Suspended particulates also damage and discolor surfaces on which they settle and produce haze and reduce regional visibility. People with influenza, people with chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in PM_{10} and $PM_{2.5}$ particles (USEPA 2025a).

LEAD

Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phaseout of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emission sources of greater concern. Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient (IQ) performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead (USEPA 2025a).

OTHER POLLUTANTS

Sulfates. Sulfates are the fully oxidized form of sulfur, which typically occur in combination with metals or hydrogen ions. Sulfates are produced from reactions of SO_2 in the atmosphere. Sulfates can result in respiratory impairment, as well as reduced visibility.

Vinyl Chloride. Vinyl chloride is a colorless gas with a mild, sweet odor, which has been detected near landfills, sewage plants, and hazardous waste sites, due to the microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air can cause nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation can cause liver damage, including liver cancer.

Hydrogen Sulfide. H_2S is a colorless and flammable gas that has a characteristic odor of rotten eggs. Sources of H_2S include geothermal power plants, petroleum refineries, sewers, and sewage treatment plants. Exposure to H_2S can result in nuisance odors, as well as headaches and breathing difficulties at higher concentrations.

VOLATILE ORGANIC COMPOUNDS

VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids. Some VOCs are also classified by the State of California as TACs. Although there are no specific VOC ambient air quality standards, VOC is a prime component (along with NO_X) of the photochemical processes by which such criteria pollutants as O_3, NO_2, and certain fine particles are formed. They are thus regulated as "precursors" to the formation of those criteria pollutants.

4.3.1.3 Toxic Air Contaminants

TACs refer to a diverse group of "non-criteria" air pollutants that can affect human health but have not had ambient air quality standards established for them. This is not because they are fundamentally different from the pollutants discussed above but because their effects tend to be local rather than regional. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588) was enacted by the state legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hot spots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over five years.

TACs are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health, although there are no ambient standards established for TACs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or other acute (short-term) or chronic (long-term) health problems. For TACs that are known or suspected carcinogens, CARB has consistently found that there are no levels or thresholds below which exposure is risk free. Individual TACs vary greatly in the risks they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health effects, a similar factor, called a hazard index, is used to evaluate risk. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA). Examples of TAC sources include industrial processes, dry cleaners, gasoline stations, paint and solvent operations, and fossil fuel combustion sources. The TAC that is most relevant to the implementation of the proposed Project is diesel particulate matter (diesel PM).

Diesel PM was identified as a TAC by CARB in August 1998 (CARB 1998). diesel PM is emitted from both mobile and stationary sources. In California, on-road, diesel-fueled vehicles contribute approximately 40% of the statewide total, with an additional 57% attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units (TRUs). Stationary sources, contributing about 3% of emissions, include shipyards, warehouses, heavy-equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report diesel PM emissions also include heavy construction, manufacturers of asphalt paving materials and blocks, and diesel-fueled electrical generation facilities.

Exposure to diesel PM can have immediate health effects. Diesel PM can have a range of health effects including irritation of eyes, throat, and lungs, causing headaches, lightheadedness, and nausea. Exposure

to diesel PM also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. Children, the elderly, and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. In California, diesel PM has been identified as a carcinogen.

CARB has adopted and implemented a number of regulations to reduce emissions of diesel PM from stationary and mobile sources. Several of these regulatory programs affect medium- and heavy-duty diesel trucks that represent the bulk of diesel PM emissions from California highways. These regulations include the solid waste collection vehicle rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of diesel PM and NO_X from existing on-road, heavy-duty, diesel-fueled vehicles, including those used at construction sites. The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model year engines or equivalent by 2023. Therefore, as of January 1, 2023, all trucks and buses have 2010 or newer model year engines.

Naturally occurring asbestos (NOA) areas are identified based on the type of rock found in the area. Asbestos-containing rocks found in California are ultramafic rocks, including serpentine rocks. Asbestos has been designated a TAC by CARB and is a known carcinogen. When this material is disturbed in connection with construction, grading, quarrying, or surface mining operations, asbestos-containing dust can be generated. Exposure to asbestos can result in adverse health effects such as lung cancer, mesothelioma (cancer of the linings of the lungs and abdomen), and asbestosis (scarring of lung tissues that results in constricted breathing) (Van Gosen and Clinkenbeard 2011).

NOA is prevalent in at least 44 of California's 58 counties. Asbestos is the name for a group of naturally occurring silicate minerals. Asbestos may be found in serpentine, other ultramafic, and volcanic rock. When rock containing NOA is broken or crushed, asbestos may be released and become airborne, causing a potential health hazard. To reduce exposure to asbestos when these soils are disturbed, CARB adopted the Airborne Toxic Control Measure for Construction, Grading, Quarrying and Surface Mining Operations. This statewide regulation is applicable to grading or any other projects disturbing soil in areas of California where asbestos may exist, as determined by the California Geological Survey. The Airborne Toxic Control Measure applies to any size construction project, although there are additional notification requirements for projects that exceed one acre. The proposed Project is not in a geologic setting with a potential for asbestos to occur (CARB 2000).

4.3.1.4 Sensitive Receptors

Certain population groups are considered more sensitive to air pollution than others. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Sensitive receptor locations include residences, schools, parks and playgrounds, daycare centers, senior care facilities, and hospitals.

The Project Area is in unincorporated San Bernardino County, approximately five miles from the California-Nevada border, and is immediately east of the Mojave National Preserve. Land uses located near the Project Area primarily consist of open space. The nearest sensitive receptor that could be exposed to criteria air pollutants or TACs/HAPs generated by the construction and operation of the Project is a residence located over five miles southwest of the Project Area (Figure 4.3-1). Given this distance, dispersion characteristics, and the short-term nature of construction emissions, sensitive receptors would not be exposed to substantial pollutant concentrations that would exceed applicable health-based standards during construction or operation.

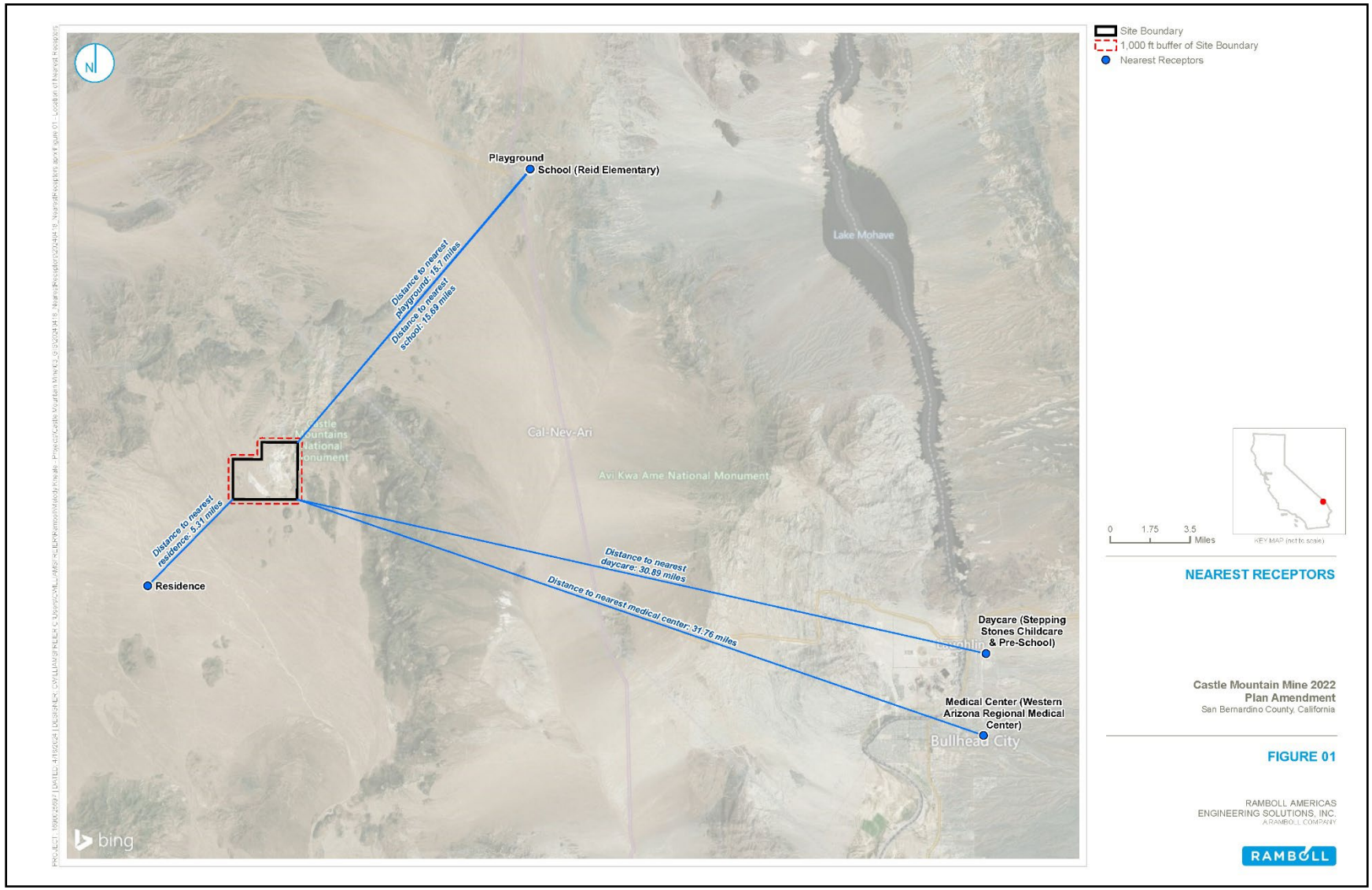


Figure 4.3-1. Nearest Sensitive Receptors

4.3.1.5 Odors

Odors are generally regarded as an annoyance rather than a health hazard. However, reactions to foul odors can range from psychological (i.e., irritation, anger, or anxiety) to physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others may have sensitivities to other substances. In addition, people may react differently to the same odor; an odor such as that of a fast-food restaurant may be offensive to one person but may be perfectly acceptable to another. Importantly, an unfamiliar odor is more easily detected and more likely to cause complaints than a familiar one because of odor fatigue. This phenomenon causes a person to become desensitized to almost any odor, with recognition occurring only when the intensity changes.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience (e.g., a flowery or sweet odor). Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases, weakening the odor intensity to the point that the odor is difficult to detect or recognize. At some point during dilution, the odorant concentration of the odorant reaches a detection threshold; a concentration below this threshold is not detectable by the average human.

4.3.1.6 Existing Air Quality Conditions

REGIONAL ATTAINMENT STATUS

Depending on whether the applicable ambient air quality standards are met or exceeded, MDAQMD is classified on a federal and state level as being in "attainment" or "nonattainment." USEPA and CARB determine the air quality attainment status of designated areas by comparing ambient air quality measurements from state and local ambient air monitoring stations with the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). These designations are determined on a pollutant-by-pollutant basis. Consistent with federal requirements, an unclassifiable or unclassified designation is treated as an attainment designation.

The Project Area is in an area that is designated as a moderate nonattainment area for federal and state PM_{10} standards and state O_3 standards. While other areas within San Bernardino County are also designated as nonattainment areas for federal O_3 and state $PM_{2.5}$ standards, such as the Western Mojave Desert area, the Project Area is outside of these areas (USEPA 2008). Therefore, as shown in Table 4.3-2, the region is considered an "attainment/unclassified" area for all other pollutants. As the Project Area is in a region classified as nonattainment for federal PM_{10} standards, the General Conformity Rule, which is designed to protect ambient air quality within nonattainment and maintenance areas against further degradation, applies to PM_{10} emissions generated during Project construction and operation of the Project. Thus, the proposed Project would be subject to the 100 tons per year *de minimis* threshold for PM_{10} as outlined in 40 Code of Federal Regulations (CFR) 93.153(b)(1).

Table 4.3-2. Federal and State Ambient Air Quality Attainment Status

Pollutant	Federal	State
O_3	Unclassified/Attainment	Nonattainment
NO_2	Unclassified/Attainment	Attainment
CO	Unclassified/Attainment	Attainment
SO_2	Unclassified/Attainment	Attainment
PM_{10}	Nonattainment	Nonattainment
$PM_{2.5}$	Unclassified/Attainment	Attainment

Source: MDAQMD 2025a.

LOCAL AIR QUALITY

Air pollutant emissions are generated in the local vicinity by mobile sources primarily consisting of automobile and heavy-duty truck traffic. Area-wide sources are the primary source of pollutants in the local vicinity. Existing levels of ambient air quality and historical trends and projections in the vicinity of the Project Area have been documented and measured at six air quality monitoring stations throughout the MDAQMD area. MDAQMD and CARB monitors and collects information 24 hours per day, seven days per week on ambient levels of pollutants. CMM is located approximately 110 miles east of Barstow, and the nearest station is the Barstow monitoring station. Data from this monitoring station is summarized in Table 4.3-3. The data show violations of the federal and state O_3 standards and the state PM_{10} standard. The high desert's proximity to South Coast Air Basin and the prevailing southwest winds that transport pollutants from more congested urban areas south of the Cajon Pass into the region causes concern over ground-level O_3 impacting ambient air. Violations of the federal O_3 standard occur several times each summer, as do violations of the state standard for particulate matter (PM_{10}), usually in the fall and winter. The air quality data collected by CARB in Table 4.3-3 include exceptional events, including wind and wildfires. The national and state criteria pollutants and the applicable ambient air quality standards are listed above in Table 4.3-1.

Table 4.3-3. Summary of Ambient Air Quality Monitoring for the Barstow Monitoring Station

Criteria Pollutant	Standard	Year		
		2023	2024	2025
O_3	Maximum 1-hour concentration (ppm)	0.077	0.092	0.094
	Days exceeding CAAQS (0.09 ppm)	0	2	2
	Maximum 8-hour concentration (ppm)	0.085	0.082	0.082
	Days exceeding NAAQS (0.07 ppm)	16	24	22
	Days exceeding CAAQS (0.07 ppm)	16	24	22
PM_{10}	Maximum 24-hour concentration (µg/m^3)	318.7	102.8	82.2
	Days exceeding NAAQS (150 µg/m^3)	1	0	0
	Days exceeding CAAQS (50 µg/m^3)	11	24	6

Source: CARB (2026).
Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter.

EXISTING ON-SITE PARTICULATE MATTER MONITORING

The existing Castle Mountain Mine Facility is currently conducting and will continue to conduct PM_{10} monitoring at four monitoring stations—the Southwest (SW), East Ridge (ER), North (N), and Southeast (SE) stations, as shown in Figure 4.3-2. All four stations collect continuous data for PM_{10} and meteorological parameters. The North station is used as the basis of the PM_{10} background based on the availability of co-located and high-quality meteorological data. The average annual PM_{10} concentration for 2021 at the North Station was 8.4 micrograms per cubic meter ($\mu g/m^3$) (Ramboll Americas Engineering Solutions, Inc. [Ramboll] 2025a; EIR Appendix 4). Background concentrations utilized in modeling (24-hour and annual) are presented in the *Castle Mountain Mine 2022 Plan Amendment Technical Support Document for Air Quality, Climate, and Energy Analyses* (Ramboll 2025a; see EIR Appendix 4) and incorporate exclusion of downwind and high wind periods, as discussed in the modeling protocol. Due to the remote location of the CMM site and limitations of available alternating current (AC) power, this monitoring program utilizes one Met One EBAM monitor (EBAM) configured with a PM_{10} inlet at each location. However, because the ER station has a substantial solar and battery array (for site communications equipment) that can support AC power, this site was also configured with a Met One EBAM Plus, which has been given Federal Equivalency Method (FEM) designation for PM_{10} so that EBAM data can be verified and validated against PM_{10} FEM data. Additional information about station siting, quality assurance and quality control, and data collection and validation procedures are discussed in the *Ambient Air Quality and Meteorological Monitoring Quality Assurance Plan* (Ramboll 2023).

4.3.2 Regulatory Setting

4.3.2.1 Federal

FEDERAL CLEAN AIR ACT

The federal Clean Air Act (CAA), which was passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The CAA delegates primary responsibility for clean air to the USEPA, which develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies. Under the CAA, the USEPA has established the NAAQS for six criteria air pollutants that are pervasive in urban environments and for which national and state health-based ambient air quality standards have been established: CO, O_3, NO_2, SO_2, lead, and particulate matter (PM_{10} and $PM_{2.5}$). O_3 is a secondary pollutant; NO_X and VOCs are of particular interest as they are precursors to O_3 formation. The NAAQS are divided into primary and secondary standards; the primary standards are set to protect human health within an adequate margin of safety, and the secondary standards are set to protect environmental values, such as plant and animal life. The standards for all criteria pollutants are presented in Table 4.3-1.

The CAA requires the USEPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved. The act also mandates that the state submit and implement a State Implementation Plan (SIP) for areas not meeting the NAAQS. These plans must include pollution control measures that demonstrate how the standards will be met.

TOXIC SUBSTANCE CONTROL ACT

The Toxic Substances Control Act (TSCA) provides the USEPA with authority to require reporting, recordkeeping, and testing requirements, and restrictions relating to chemical substances and/or mixtures. The TSCA became law on October 11, 1976, and became effective on January 1, 1977.

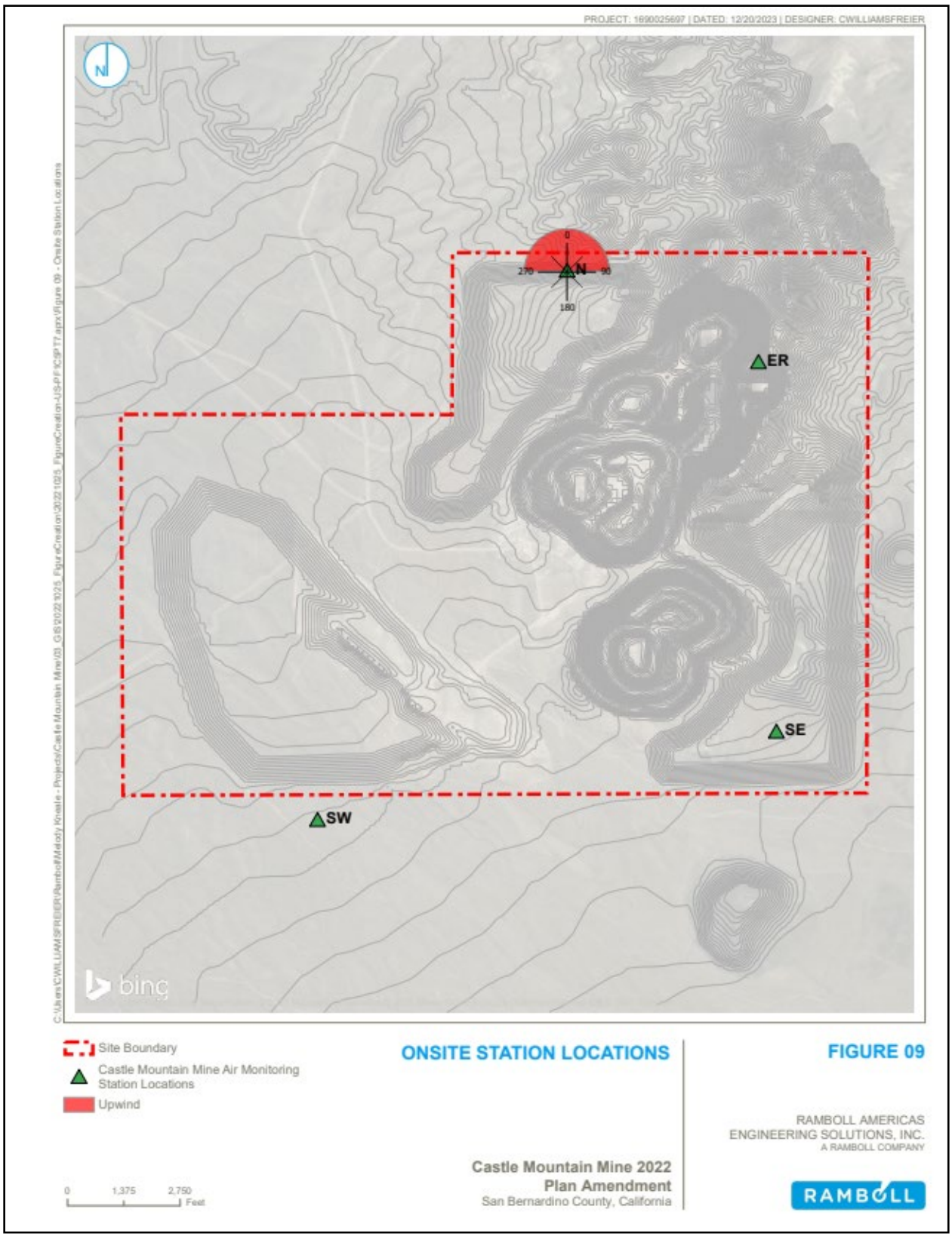


Figure 4.3-2. Existing On-Site Particulate Matter Monitoring Locations

The TSCA authorized the USEPA to secure information on all new and existing chemical substances, as well as to control any of the substances that were determined to cause unreasonable risk to public health or the environment. Congress later added additional titles to the TSCA, with this original part designated Title I – Control of Hazardous Substances. TSCA regulatory authority and program implementation rest predominantly with the federal government (i.e., USEPA).

However, the USEPA can authorize states to operate their own USEPA-authorized programs for some portions of the statute. TSCA Title IV allows states the flexibility to develop accreditation and certification programs and work practice standards for lead-related inspection, risk assessment, renovation, and abatement that are at least as protective as existing federal standards.

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (ASBESTOS)

The USEPA's air toxics regulation for asbestos is intended to minimize the release of asbestos fibers during activities involving the handling of asbestos. Asbestos was one of the first hazardous air pollutants regulated under the air toxics program, as there are major health effects associated with asbestos exposure (lung cancer, mesothelioma, and asbestosis). On March 31, 1971, the USEPA identified asbestos as a hazardous pollutant, and on April 6, 1973, the USEPA promulgated the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP), currently found in 40 CFR Part 61, Subpart M. The Asbestos NESHAP has been amended several times, most comprehensively in November 1990. In 1995, the rule was amended to correct cross-referenced citations to Occupational Safety and Health Administration, U.S. Department of Transportation, and other USEPA rules governing asbestos. Air toxics regulations under the CAA have guidance on reducing asbestos in renovation and demolition of buildings; institutional, commercial, and industrial buildings; large-scale residential demolition; exceptions to the asbestos removal requirements; asbestos control methods; waste disposal and transportation; and milling, manufacturing, and fabrication.

U.S. ENVIRONMENTAL PROTECTION AGENCY

The USEPA is responsible for implementing the programs established under the federal CAA, such as establishing and reviewing the NAAQSs and judging the adequacy of SIPs. The USEPA has delegated its authority to implement many of the federal programs to California while retaining an oversight role to ensure that the programs continue to be implemented.

The MDAQMD is responsible for issuing federal New Source Review (NSR) permits and has been delegated enforcement of the New Source Performance Standards (NSPS). The federal NSR program requires air quality construction and operating permits (i.e., NSR air quality permits) for stationary sources when they exceed specific emissions thresholds for nonattainment pollutants and require Prevention of Significant Deterioration air quality permits when specific emissions thresholds are exceeded for attainment pollutants. The NSPS are emission control/performance standards for specific types of stationary sources, such as boilers, cement kilns, and gas turbines (40 CFR 52; 40 CFR 60).

Pursuant to the 1990 CAA Amendments, the USEPA passed two separate federal conformity rules to ensure that air pollutant emissions associated with federally approved or funded activities do not exceed emission budgets established in the applicable SIP and do not otherwise interfere with the State of California's ability to attain and maintain the NAAQS in areas working to attain or maintain the standards. The rules were set forth at 40 CFR Parts 51 and 93 and include Transportation Conformity, which applies to transportation plans, programs, and projects, and General Conformity, which applies to all other non-transportation related projects, such as the project. A detailed determination of the applicability of the General Conformity Rule is required pursuant to 40 CFR Part 93, Subpart B, when federal actions or funding of non-transportation-related activities in nonattainment areas result in

emissions that exceed *de minimis* threshold levels applicable to the specific nonattainment class. The Project Area is in a federal nonattainment area for PM_{10}, and therefore the proposed Project and alternatives would be subject to the General Conformity regulations if emissions would exceed *de minimis* levels (USEPA 2025b).

CALIFORNIA DESERT CONSERVATION AREA PLAN

The California Desert Conservation Area (CDCA) Plan requires that all areas within the CDCA, regardless of multiple-use class, be managed to protect their air quality and visibility in accordance with Class II objectives of Part C of the CAA Amendments, unless otherwise designated another class by the State of California as a result of recommendations developed by any BLM air quality management plan.

4.3.2.2 State

CALIFORNIA CLEAN AIR ACT

The California Clean Air Act (CCAA) was adopted by CARB in 1988. The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for O_3, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the CCAA provides districts with authority to regulate indirect sources. The CARB and local air districts are responsible for achieving CAAQS, which are to be achieved through district-level Air Quality Management Plans (AQMPs) that would be incorporated into the SIP. In California, the USEPA has delegated authority to prepare SIPs to CARB, which in turn has delegated that authority to individual air districts. Each district plan is required to either (1) achieve a 5% annual reduction, averaged over consecutive 3-year periods, in districtwide emissions of each nonattainment pollutant or its precursors; or (2) provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both federal and state planning requirements.

The State of California began to set its ambient air quality standards (i.e., CAAQS) in 1969, under the mandate of the Mulford-Carrell Act. The CCAA requires all air districts of the state to achieve and maintain the CAAQS by the earliest practical date. Table 4.3-1 shows the CAAQS currently in effect for each of the criteria pollutants, as well as the other pollutants recognized by the state. As shown in Table 4.3-1, the CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, H_2S, vinyl chloride, and visibility-reducing particles.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including the following:

- 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- 24 CCR Part 6: Building Energy Efficiency Standards
- 24 CCR Part 11: Green Building Standards Code

CALIFORNIA CODE OF REGULATIONS

The CCR is the official compilation and publication of regulations adopted, amended, or repealed by the state agencies pursuant to the Administrative Procedure Act. The CCR includes regulations that pertain to air quality emissions. Specifically, 13 CCR 2485 states that the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds) during construction shall be limited to 5 minutes at any location. In addition, 17 CCR 93115 states that operation of any stationary, diesel-fueled, compression-ignition engine shall meet specified fuel and fuel additive requirements and emission standards.

TOXIC AIR CONTAMINANTS REGULATIONS

California regulates TACs primarily through the Toxic Air Contaminant Identification and Control Act of 1983 (AB 1807, also known as the Tanner Air Toxics Act) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588 – Connelly). In the early 1980s, CARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Air Toxics Act (AB 1807) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks (CARB 2011).

In August 1998, CARB identified diesel PM emissions from diesel-fueled engines as a TAC. In September 2000, CARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles (CARB 2000a). The goal of the plan is to reduce diesel particulate matter (DPM) emissions and the associated health risk by 75% in 2010, and by 85% by 2020. The plan identified 14 measures that target new and existing on-road vehicles (e.g., heavy-duty trucks and buses, etc.), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps, etc.), and stationary engines (e.g., stand-by power generators, etc.). During the control measure phase, specific statewide regulations designed to further reduce diesel PM emissions from diesel-fueled engines and vehicles were evaluated and developed. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions. The project would be required to comply with applicable diesel control measures.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled TRUs and TRU Generator Sets and Facilities Where TRUs Operate

The proposed Project would be required to comply with the applicable diesel control measures.

4.3.2.3 Local

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

MDAQMD maintains a set of rules and regulations to improve and maintain healthy air quality for the entire population within its jurisdiction (MDAQMD 2025b). When developing new regulations, MDAQMD must comply with complex procedures established by statutes in federal and state codes. The following are some of the rules that would apply to the proposed Project:

- **Rule 201: Permit to Construct.** A person shall not build, erect, install, alter or replace any equipment, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce or control the issuance of air contaminants without first obtaining written authorization for such construction from the Air Pollution Control Officer. A permit to construct shall remain in effect until the permit to operate the equipment for which the application was filed is granted or denied, or the application is canceled.
- **Rule 203: Permit to Operate.** A person shall not operate or use any equipment, the use of which may cause the issuance of air contaminants or the use of which may reduce or control the issuance of air contaminants, without first obtaining a written permit from the Air Pollution Control Officer. The equipment shall not be operated contrary to the conditions specified in the permit to operate.
- **Rule 204: Permit Conditions.** To assure compliance with all applicable regulations, the Air Pollution Control Officer may impose written conditions on any permit. Commencing work or operation under such a permit shall be deemed acceptance of all the conditions so specified.
- **Rule 401: Visible Emissions.** The purpose of the rule is to provide limits for the visible emissions from sources within the MDAQMD.
- **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.
- **Rule 403: Fugitive Dust Control.** The purpose of this rule is to reduce the amount of PM_{10} entrained in the ambient air from anthropogenic fugitive dust sources within the MDAQMD by requiring actions to prevent, reduce, or mitigate fugitive dust.
- **Rule 1113: Architectural Coatings.** The purpose of this rule is to limit the quantity of VOC in architectural coatings.
- **Rule 1320: New Source Review for Toxic Air Contaminants.** This rule requires preconstruction review for new, modified, or relocated industrial facilities that emit hazardous air pollutants (HAPs) or TACs.

MDAQMD is the local air quality agency and shares responsibility with CARB for ensuring that federal and state ambient air quality standards are achieved and maintained in the MDAB. Furthermore, MDAQMD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs and regulates agricultural burning. Other MDAQMD responsibilities include monitoring ambient air quality, preparing clean air plans, planning activities such as modeling and maintenance of the emission inventory, and responding to citizen air quality complaints.

MDAQMD adopted its *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines* (MDAQMD CEQA Guidelines) in February 2020 (MDAQMD 2020). The MDAQMD CEQA Guidelines provides guidance on how to determine the significance of impacts, including air pollutant emissions, related to the development of residential, commercial, and industrial projects. Where impacts are determined to be significant, the MDAQMD CEQA Guidelines provide guidance to mitigate adverse impacts to air quality from development projects. MDAQMD is the agency principally responsible for comprehensive air pollution control in the region.

Currently, the NAAQS and CAAQS are exceeded in most parts of the MDAB. As previously discussed, with regard to the NAAQS, the region within the MDAB is in nonattainment for O_3 (8-hour) and PM_{10}. For the CAAQS, the Project region within the MDAB is in nonattainment for O_3 (1-hour and 8-hour),

PM_{10}, and $PM_{2.5}$. In response, MDAQMD has adopted a series of AQMPs to meet the federal and state ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and minimize any negative fiscal impacts of air pollution control on the economy.

MDAQMD has adopted a variety of attainment plans for a variety of nonattainment pollutants. The latest plans include the following:

- 1995 Mojave Desert Planning Area PM_{10} Attainment Plan
- 2004 Southeast Desert Modified Air Quality Maintenance Area Ozone Plan
- 2007 Western Mojave Desert Ozone Attainment Plan
- February 2008 Ozone Early Progress Plans
- 2014 Updates to the 1997 8-Hour Ozone Standard SIPs
- 2015 8-Hour Ozone Reasonable Achievable Control Technology SIP Analysis: MDAQMD
- 2016 8-Hour Ozone SIP: Western Mojave Desert Nonattainment Area
- 2022 8-Hour Ozone SIP: Western Mojave Desert Nonattainment Area

To achieve and maintain ambient air quality standards, MDAQMD has adopted various rules and regulations for the control of airborne pollutants. Those rules applicable to the proposed Project include, but are not limited to, MDAQMD Rule 403 Fugitive Dust Control. The purpose of this rule is to reduce the amount of PM_{10} entrained in the ambient air as a result of emissions generated from construction and other earth-moving activities by requiring actions to prevent, reduce, or mitigate PM_{10} emissions. In addition, the proposed Project is required to adopt best available control measures to minimize emissions from surface-disturbing activities to comply with MDAQMD Rule 403.

In addition, there are other MDAQMD rules and regulations, not detailed here, that may apply to the proposed Project but are administrative or descriptive in nature. These include rules associated with fees, enforcement and penalty actions, and variance procedures.

SAN BERNARDINO COUNTYWIDE PLAN

The County Policy Plan, a component of the CWP, contains the long-term goals and policies that will guide County decisions, investments, and improvements toward achieving the countywide vision. The County Policy Plan represents a unique approach to county planning. It serves as the County's General Plan for the unincorporated areas, which is mandated by state law, but it also includes policy direction for adult and child supportive services, healthcare, public safety, and other regional services the County administers in both incorporated and unincorporated areas. Applicable County Policy Plan components are those that set policies regarding natural resources and renewable energy and conservation. Relevant policies in the Natural Resources Element of the CWP are summarized in Table 4.3-4 (County of San Bernardino 2020).

Table 4.3-4. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Natural Resources Element	
Goal NR-1	Air Quality – Air quality that promotes health and wellness of residents in San Bernardino County through improvements in locally-generated emissions.
Policy NR-1.1	Land use. We promote compact and transit-oriented development countywide and regulate the types and locations of development in unincorporated areas to minimize vehicle miles traveled and greenhouse gas emissions.
Policy NR-1.3	Coordination on air pollution. We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source.
Policy NR-1.5	Sensitive land uses. We consider recommendations from the California Air Resources Board on the siting of new sensitive land uses and exposure to specific source categories.
Policy NR-1.6	Fugitive dust emissions. We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions.
Policy NR-1.7	Greenhouse gas reduction targets. We strive to meet the 2040 and 2050 greenhouse gas emission reduction targets in accordance with state law.
Policy NR-1.9	Building design and upgrades. We use the CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions.

SAN BERNARDINO COUNTY CODE

San Bernardino County Municipal Code Section 83.01.040, *Air Quality*, identifies the following standards that would be applicable to the proposed Project (County of San Bernardino 2025):

> (c) *Diesel Exhaust Emissions Control Measures*. The following emissions control measures shall apply to all discretionary land use projects approved by the County on or after January 15, 2009:
>
> (1) *On-Road Diesel Vehicles*. On-road diesel vehicles are regulated by the State of California Air Resources Board.
>
> (2) *Off-Road Diesel Vehicle/Equipment Operations*. All business establishments and contractors that use off-road diesel vehicle/equipment as part of their normal business operations shall adhere to the following measures during their operations in order to reduce diesel particulate matter emissions from diesel-fueled engines:
>
> (A) Off-road vehicles/equipment shall not be left idling on site for periods in excess of five minutes. The idling limit does not apply to:
>
> (I) Idling when queuing;
>
> (II) Idling to verify that the vehicle is in safe operating condition;
>
> (III) Idling for testing, servicing, repairing or diagnostic purposes;
>
> (IV) Idling necessary to accomplish work for which the vehicle was designed (such as operating a crane);
>
> (V) Idling required to bring the machine system to operating temperature; and
>
> (VI) Idling necessary to ensure safe operation of the vehicle.

(B) Use reformulated ultra low-sulfur diesel fuel in equipment and use equipment certified by the U.S. Environmental Protection Agency (EPA) or that pre-dates EPA regulations.

(C) Maintain engines in good working order to reduce emissions.

(D) Signs shall be posted requiring vehicle drivers to turn off engines when parked.

(E) Any requirements or standards subsequently adopted by the South Coast Air Quality Management District, the Mojave Desert Air Quality Management District or the California Air Resources Board.

(F) Provide temporary traffic control during all phases of construction.

(G) On-site electrical power connections shall be provided for electric construction tools to eliminate the need for diesel-powered electric generators, where feasible.

(H) Maintain construction equipment engines in good working order to reduce emissions. The developer shall have each contractor certify that all construction equipment is properly serviced and maintained in good operating condition.

(I) Contractors shall use ultra low-sulfur diesel fuel for stationary construction equipment as required by Air Quality Management District (AQMD) Rules 431.1 and 431.2 to reduce the release of undesirable emissions.

(J) Substitute electric and gasoline-powered equipment for diesel-powered equipment, where feasible.

4.3.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to air quality if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Each of these thresholds is discussed under Section 4.3.5, *Project-Specific Impacts and Mitigation Measures*, below.

4.3.4 Impact Assessment Methodology

This analysis focuses on the potential change in the air quality environment due to implementation of the proposed Project. Air pollution emissions would result from both Project construction and operation. Specific methodologies used to evaluate these emissions are discussed below. The proposed Project's emissions will be evaluated based on significance thresholds and CEQA guidance established by MDAQMD, as discussed above. Daily emissions during construction are estimated by assuming a conservative construction schedule and applying the multiple source and fugitive dust emission factors.

Emission factors and methodologies were selected for each activity utilizing applicable federal, State, and local guidance as appropriate. The Project description, emissions inventory, and modeling inputs/approach are described in detail in the modeling protocol (Ramboll 2025a). The calculations of the emissions generated during Project construction activities reflect the types and quantities of construction equipment that would be used to complete the proposed Project.

4.3.4.1 Criteria Air Pollutant Impacts

Table 4.3-5 presents MDAQMD's recommended regional threshold criteria to determine the significance and appropriate mitigation level for a project's short-term construction emissions and long-term operations emissions. Construction-generated and operational emissions that exceed these thresholds would be considered to have a potentially significant impact (MDAQMD 2020).

Table 4.3-5. MDAQMD Thresholds of Significance, Criteria Air Pollutant Emissions

Pollutant	Daily Threshold (lbs/day)	Annual Threshold (tons/year)
VOC	137	25
NO_X	137	25
CO	548	100
SO_X	137	25
PM_{10}	82	15
$PM_{2.5}$	65	12
H_2S	54	10
Lead	3	0.6

Source: MDAQMD (2020)

Note: lbs = pounds

4.3.4.2 Toxic Air Contaminants Impacts

Potential TAC impacts were evaluated in this analysis by conducting a quantitative analysis. The TAC that is the focus of this analysis is diesel PM because it is known that diesel PM would be emitted during Project construction and operation. Construction-related activities that would result in temporary, intermittent emissions of diesel PM would be from the exhaust of off-road equipment and on-road heavy-duty trucks. Onroad diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they do not operate at any one location for extended periods of time such that they would expose a single receptor to excessive diesel PM emissions. The proposed Project would be consistent with TAC-related rules and regulations, and low-exhaust diesel PM were quantified on a mass emissions basis during construction and operation (Ramboll 2025a). Furthermore, the use of Tier 4 engines for operational mining fleets would result in the reduction of diesel PM exhaust emissions in addition to criteria pollutant emissions.

4.3.4.3 Applicant-Proposed Measures

The Applicant has identified and committed to implementing the following applicant-proposed measures (APMs) as part of the proposed Project to avoid or substantially lessen potentially significant impacts to air quality, to the extent feasible.

APM-AQ-1	During Project construction, the disturbed soil will be wetted, chemically treated, or treated by other means satisfactory to the Authorized Officer, sufficiently to effectively reduce airborne dust and reduce soil erosion. Additionally, prudent vehicle speeds will be maintained to minimize fugitive dust created by travel.
APM-AQ-2	Construction and maintenance activities will be conducted to minimize disturbance to vegetation adjacent to the Right-of-Ways.
APM-AQ-3	All construction vehicle movement outside the Right-of-Ways will be restricted.
APM-AQ-4	Water and dust-inhibiting agents shall be employed as needed to reduce the potential visual impact of fugitive dust during the operational period.
APM-DF-1	Water will be used during construction activities to minimize fugitive dust to the extent practicable. Additionally, prudent vehicle speeds will be maintained to minimize fugitive dust created by travel on unpaved surfaces.
APM-HAZMAT-15	All construction, operation, and maintenance activities will comply with all applicable federal, state, and local laws and regulations regarding the use of hazardous substances. CMV will be responsible for maintaining compliance with all applicable laws and regulations.

4.3.5 Project-Specific Impacts and Mitigation Measures

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

IMPACT AQ-1: THE PROJECT WOULD NOT CONFLICT WITH AN APPLICABLE AIR QUALITY PLAN. *(LESS THAN SIGNIFICANT)*

A project would conform with applicable adopted plans if it complies with the rules, regulations, and emission control strategies in the applicable air quality attainment plans. The proposed Project would comply with the applicable rules and regulations, including the use of standard control measures for construction equipment and fugitive PM_{10}.

Consistency with air quality plans is typically conducted based on a comparison of project-generated growth in employment, population, and vehicle miles traveled within the region, which is used for development of the emissions inventories contained in the air quality plans. The region's SIP comprises the MDAQMD air quality plans: 2022 8-Hour Ozone SIP, 2016 8-Hour Ozone SIP, 2015 8-Hour Ozone Reasonable Available Control Technology SIP, 2014 Updates to the 1997 8-Hour Ozone SIP, February 2008 Ozone Early Progress Plan, 2004 Southeast Desert Modified Air Quality Maintenance Area Ozone Plan, and 1995 Mojave Desert Planning Area PM_{10} Attainment Plan. Project compliance with all MDAQMD rules and regulations results in conformance with MDAQMD air quality plans. These air quality attainment plans are a compilation of new and previously submitted plans, programs (e.g., monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards. These SIPs and associated control measures are based on information derived from projected growth in an air district in order to project future emissions and then determine strategies and regulatory controls for the reduction of emissions.

Growth projections are based on the general plans developed by the counties and incorporated cities in each county.

As discussed in Section 4.14, *Population and Housing*, the proposed Project would not significantly increase employment, population, or growth within the region. The proposed Project does not include residential development or large local or regional employment centers and thus would not result in significant population or employment growth.

The proposed Project would be in an area that is designated as a nonattainment area for federal and state PM_{10} standards and state O_3 standards. While other areas within San Bernardino County are also designated as nonattainment areas for federal O_3 and state $PM_{2.5}$ standards, such as the Western Mojave Desert area, the proposed Project would be located outside of these areas. As the proposed Project would be in a region classified as nonattainment for the PM_{10} standard, the proposed Project is subject to general conformity review by the MDAQMD. According to a letter dated October 8, 2025, Alan J. De Salvio, the MDAQMD Deputy Air Pollution Control Officer, conducted a review of the proposed Project's air quality emission modeling and concluded that the proposed Project would not obstruct implementation of any applicable air quality plan:

> . . . the District finds that areawide and local air quality modeling of proposed emissions demonstrates that the action conforms to the applicable State Implementation Plan (SIP) and would not cause or contribute to any new violation of any air quality standard in any area, or increase the frequency or severity of any existing violation of any standard in any area (MDAQMD 2025c).

Based on the air modeling data reviewed and the preliminary recommendation from the MDAQMD, the BLM concluded that general conformity has been demonstrated and is in the process of issuing a formal General Conformity Determination. As the proposed Project would be in a region classified as nonattainment for federal PM_{10} standards, under the General Conformity Rule, the proposed Project demonstrates conformity through modeling, which shows that the proposed Project would not result in an exceedance of the applicable PM_{10} NAAQS when combined with existing background concentrations. As discussed in further detail in Impact AQ-2, under the General Conformity Rule, the proposed Project would not result in a direct exceedance of any applicable NAAQS or CAAQS when combined with existing background criteria air pollutant emissions in the surrounding area (see Tables 4.3-9 and 4.3-10). Therefore, impacts related to the implementation of applicable air quality plans would be *less than significant*, and mitigation is not necessary.

Impact AQ-1
The Project would not conflict with an applicable air quality plan.
Mitigation Measures
Mitigation is not necessary. Impact AQ-1 would be less than significant.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

IMPACT AQ-2: DESPITE IMPLEMENTATION OF APMS AQ-1, AQ-2, AQ-3, DF-1, AND DF-6, THE PROJECT COULD RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF CRITERIA POLLUTANTS THAT WOULD EXCEED APPLICABLE MDAQMD THRESHOLDS DURING CONSTRUCTION AND OPERATION. *(SIGNIFICANT AND UNAVOIDABLE)*

MDAQMD's thresholds of significance represent the allowable emissions a project can generate without generating a cumulatively considerable contribution to regional air quality impacts. Therefore, a project that would not exceed MDAQMD's thresholds of significance on a project level also would not be considered to result in a cumulatively considerable contribution to these regional air quality impacts. The region is designated as a nonattainment area for federal and state PM_{10} standards and state O_3 standards. Impacts related to construction and operation of the proposed Project are addressed separately below.

The proposed Project involves expanding mine pits adjacent to and surrounding ore deposits previously approved under the 1990 and 1998 Plans. The proposal includes adjustments to the sequence and extent of mining at existing deposits, with an emphasis on pit backfilling to enhance operational efficiency, reduce environmental impacts, and facilitate effective reclamation. Key features of the proposed expanded operations include:

- Expanded mine pits and waste rock sites located near ore bodies to minimize haul distances, fuel use, and air emissions.
- Primary crushing plants positioned close to pits and extensive use of overland conveyors to further reduce diesel equipment travel and associated emissions.
- Overburden sites designed to mimic natural terrain, simplifying final reclamation.
- Heap leach pads and the comminution plant sited on gentle slopes to maximize gravity flow, minimize grading, and reduce impacts on natural drainage and floodplains.

The expanded facilities, as proposed in the Phase II Expansion, would increase land disturbance in the mine plan boundary by approximately 1,434 acres, resulting in a total project disturbance of approximately 3,288 acres. The proposed Project also includes two long-term right-of-way (ROW) authorization requests for the Ivanpah Underground Water Line and the 69 kV Overhead Power Line, a short-term ROW for construction and staging, as well as an authorization for continued maintenance and use of the existing Walking Box Ranch Road.

Construction

Criteria air pollutant emissions were quantified for the two years of mine construction. Construction is expected to occur over an 18-month period and was conservatively assumed to start as early as 2026. Construction may commence after this time and thus the emission estimates presented here are conservative. Emission-generating activities during construction would include fugitive dust emissions from bulldozing, scraping, and grading; fugitive dust and exhaust emissions from off-road equipment, off-road trucks, and on-road mobile vehicles; and fugitive dust emissions from wind erosion of disturbed areas. The APMs discussed above and the requirements of MM-AQ-1 and MM-AQ-2 were included in the *Castle Mountain Mine 2022 Plan Amendment Technical Support Document for Air Quality, Climate,*

And Energy Analyses modeling where applicable. As such, the estimated mitigated emissions from construction of the Phase II Expansion phase of the proposed Project are summarized in Table 4.3-6. The estimated mitigated emissions from construction of the Utilities ROW phase of the proposed Project are summarized in Table 4.3-7. The detailed assumptions and calculations, as well as AERMOD outputs, are provided in the *Castle Mountain Mine 2022 Plan Amendment Technical Support Document for Air Quality, Climate, And Energy Analyses* (Ramboll 2025a).

Table 4.3-6. Construction Emissions Summary – Phase II Expansion

Construction Year	Mitigated Construction Emissions					
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Pollutant Emission (short tons per year)						
Total Annual Emissions (2026)	*3.3*	*52*	*50*	*56*	*13*	*0.11*
Total Annual Emissions (2027)	*1.7*	*26*	*25*	*28*	*6.3*	*0.053*
MDAQMD annual significance thresholds	*25*	*25*	*100*	*15*	*12*	*25*
Threshold exceeded?	***No***	***Yes***	***No***	***Yes***	***Yes***	***No***
General Conformity *de minimis* thresholds	*n/a*	*n/a*	*n/a*	*100*	*n/a*	*n/a*
Threshold exceeded?	***n/a***	***n/a***	***n/a***	***No***	***n/a***	***n/a***

Source: Ramboll (2025a).

Table 4.3-7. Construction Emissions Summary – Utilities ROW

Construction Year	Mitigated Construction Emissions					
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Pollutant Emission (short tons per year)						
Total Annual Emissions	*0.42*	*7.0*	*7.6*	*18*	*3.8*	*0.021*
MDAQMD annual significance thresholds	*25*	*25*	*100*	*15*	*12*	*25*
Threshold exceeded?	***No***	***No***	***No***	***Yes***	***No***	***No***
General Conformity *de minimis* thresholds	*n/a*	*n/a*	*n/a*	*100*	*n/a*	*n/a*
Threshold exceeded?	***n/a***	***n/a***	***n/a***	***No***	***n/a***	***n/a***

Source: Ramboll (2025a).

As shown in Table 4.3-6, even with incorporation of dust control practices, estimated mitigated construction emissions would exceed the applicable MDAQMD annual indistinct thresholds for NO_X, PM_{10} and $PM_{2.5}$. As presented above, the proposed Project could violate applicable air quality significance thresholds and could contribute substantially to an existing or projected air quality violation. As such, the proposed Project would have a *potentially significant impact* with respect to an increase in criteria pollutant emissions during construction.

Operations

Criteria air pollutant emissions were quantified for a peak year of mine operation. Emission-generating activities during operation would include fugitive dust emissions from crushing and screening, fugitive dust and exhaust emissions from off-road trucks and on-road mobile vehicles, exhaust emissions from diesel generators primarily during emergency use, emissions from LNG turbines, indirect emissions from

water and electricity use, and fugitive dust emissions from wind erosion of stockpile areas. To conservatively capture variations in year-to-year operations and to present a potential peak year of operation, maximum annual activity data was selected from each activity type, regardless of overlapping year. For example, maximum hauling operations used in the inventory and maximum equipment counts used in the inventory are projected to occur in different years but are conservatively used together in this inventory development.

Maximum annual operations evaluated account for up to 19.2 million tons of ore processed and up to 60.6 million tons of overburden material mined, which include the portions of ore and overburden processing that are currently approved (6.25 million tons annually and 16.3 million tons annually, respectively). Power demands assume up to a 20 megawatt (MW) on-site load plus a 1,314 kilowatt (kW) off-site pump station in Nipton, California. The on-site load is assumed to be met with 10 MW of energy generated on-site using natural gas turbines and 10 MW of grid power provided by Nevada Energy (NV Energy). In addition, 1,314 kW of grid power provided by Southern California Edison (SCE) would be used for an off-site water pump station.

The estimated emissions increase as a result of the proposed 2022 Plan (i.e., the change between the proposed 2022 Plan and approved 1998 Plan operations, when using the same emission factors and methodologies) are summarized in Table 4.3-8.

Table 4.3-8. Operational Emissions Summary – Increase from 1998 Plan Emissions

Emission Source	Mitigated Operational Emissions Summary					
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Pollutant Emission (short tons per year)						
On-site Stationary Exhaust and Fugitive Sources	3.98	74	291	7.2	3.63	0.103
On-site Mobile Exhaust Sources	21	333	369	4.0	4.0	0.70
On-site Fugitive Dust Sources	n/a	n/a	n/a	168	17.8	n/a
Off-site Mobile Exhaust Sources	0.093	1.2	3.7	0.19	0.076	0.015
Off-site Fugitive Dust Sources	n/a	n/a	n/a	12	12	n/a
Total	**25**	**408**	**663**	**190**	**27**	**0.82**
MDAQMD significance thresholds	*25*	*25*	*100*	*15*	*12*	*25*
Threshold exceeded?	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***No***
General Conformity *de minimis* thresholds	*n/a*	*n/a*	*n/a*	*100*	*n/a*	*n/a*
Threshold exceeded?	***n/a***	***n/a***	***n/a***	***Yes***	***n/a***	***n/a***

Source: Ramboll (2025a).

As Table 4.3-8 shows, estimated annual mitigated operational emissions would exceed applicable MDAQMD significance thresholds for VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$ as well. Therefore, based on the above criteria, the proposed Project would have a *potentially significant impact* related to increased air pollutant emissions during operation.

General Conformity

As previously discussed, the proposed Project would be in an area that is designated as a moderate nonattainment area for federal and state PM_{10} standards and state O_3 standards. As the proposed Project would be in a region classified as nonattainment for federal PM_{10} standards, the General Conformity Rule,

which is designed to protect ambient air quality within nonattainment and maintenance areas against further degradation, applies to PM_{10} emissions generated during Project construction and operation. Thus, the proposed Project would be subject to the 100 tons per year *de minimis* threshold for PM_{10} as outlined in 40 CFR 93.153(b)(1).

As shown above in Table 4.3-6, annual PM_{10} emissions during construction of the proposed Project would not exceed the applicable General Conformity *de minimis* threshold of 100 tons per year. However, as shown above in Table 4.3-8, annual PM_{10} emissions during operation of the proposed Project would exceed the applicable General Conformity *de minimis* threshold of 100 tons per year. Therefore, in accordance with MDAQMD Rule 2002(H) and (I), an analysis of air quality impacts at and beyond the site boundary from air emissions generated during the proposed Project was prepared that combined the modeled concentrations due to the proposed Project's maximum PM_{10} emissions with existing background concentrations based on data on-site monitoring stations.

As discussed in Section 4.3.1.6, *Existing Air Quality Conditions*, the existing CMM facility is currently conducting PM_{10} monitoring at four monitoring stations: Southwest (SW), East Ridge (ER), North (N), and the Southeast (SE) station, as shown in Figure 4.3-2. All four stations collect continuous data for PM_{10} and meteorological parameters. The North station is used as the basis of the PM_{10} background based on the availability of co-located and high-quality meteorological data. The average annual PM_{10} concentration for 2021 at the North Station was 8.4 $\mu g/m^3$ (Ramboll 2025a). The background concentrations utilized in modeling (24-hour and annual) are presented in the *Castle Mountain Mine 2022 Plan Amendment Technical Support Document for Air Quality, Climate, and Energy Analyses* and incorporate exclusion of downwind and high wind periods, as discussed in the modeling protocol (see EIR Appendix 4).

The modeling results for comparison to the applicable NAAQS and CAAQS for the Maximum Emissions Scenario are summarized below in Table 4.3-9 and Table 4.3-10, respectively. These results represent a scenario with maximum hourly blasting emissions always occurring with worst-case meteorology and should be considered conservative. This analysis is consistent with the MDAQMD's general conformity review discussed above in Impact AQ-1 (MDAQMD 2025c; EIR Appendix 3).

Table 4.3-9. Maximum Emissions Scenario – NAAQS Results

Pollutant	Averaging Time	Rank	Impact ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Percent of Standard
SO_2	1-hr	99th Percentile	0.4	11	11.4	196	6%
NO_2	1-hr	98th Percentile	101.6	64.9	166.5	188	89%
	Annual	Maximum	5.9	6.8	12.7	100	13%
CO	1-hr	H2H*	3,164	2,406	5,570	40,000	14%
	8-hr	H2H*	487	1,948	2,435	10,000	24%
PM_{10}	24-hr	H2H*	28.7	(included)	28.7	150	19%
$PM_{2.5}$	24-hr	98th Percentile	1.5	16.6	18.1	35	52%
	Annual	Maximum	0.46	4.8	5.3	9	58%

Source: Ramboll (2025a). Emissions were modeled using AERMOD Version 24142 (USEPA 2024).

* H2H = Highest-second-high

Table 4.3-10. Maximum Emissions Scenario – CAAQS Results

Pollutant	Averaging Time	Rank	Impact (µg/m^3)	Background (µg/ m^3)	Total Concentration (µg/m^3)	CAAQS (µg/ m^3)	Percent of Standard
SO_2	1-hr	Maximum	0.9	19.3	20.2	655	3%
	24-hr	Maximum	0.1	19.3	19.4	105	18%
NO_2	1-hr	Maximum	164.1	82	246.1	339	73%
	Annual	Maximum	5.9	6.8	12.7	57	22%
CO	1-hr	Maximum	9,011	2,635	11,646	23,000	51%
	8-hr	Maximum	1,145	1,948	3,093	10,000	31%
PM_{10}	24-hr	Maximum	29.7	(included)	29.7	50	59%
	Annual	Maximum	3.5	6.3	9.8	20	49%
$PM_{2.5}$	Annual	Maximum	0.46	5.1	5.6	12	46%

Source: Ramboll (2025a). Emissions were modeled using AERMOD Version 24142 (USEPA 2024).

Secondary ozone formation from on-site Project emissions of NO_X and VOC emissions were estimated using methodology based on the Modeled Emission Rates for Precursors (MERPs) guidance. Using the USEPA MERPs Qlik tool, the hypothetical source closest to the Project is in Las Vegas, Nevada, which is approximately 129 kilometers (km) (80 miles) from the Project Area. The total Project emissions and data extracted from the USEPA MERPs database for the 10-meter stack for this source are provided in Table 4.3-11. Use of the 10-meter stack is representative of the majority of Project emissions, which are fugitive or low-level releases. As summarized in in Table 4.3-11, the estimated impacts for the Project are below the ozone Significant Impact Level (SIL) value of 1.0 parts per billion (ppb).

Table 4.3-11. USEPA MERP Modeling Results for a Hypothetical Source in Las Vegas, Nevada

State	County	Metric	Precursor	MERP Emissions (typ)	Onsite Project Emissions (tpy)	MERP Impact	Estimated Project Impact by Precursor	Combined Estimated Project Impact
Nevada	Clark County	8-hr Ozone	NOx	1000	569	0.636 ppb	0.362 ppb	0.373 ppb
Nevada	Clark County	8-hr Ozone	VOC	500	35	0.160 ppb	0.011 ppb	

As shown above in Table 4.3-9 and Table 4.3-10, the proposed Project would not result in an exceedance of the applicable NAAQS or CAAQS for the region and Table 4.3-11 shows the proposed Project emissions are also below the ozone SIL. Therefore, the proposed Project would not cause or contribute to any new violation of any air quality standard in any area, or increase the frequency or severity of any existing violation of any standard in any area, and impacts related to the General Conformity Rule would be *less than significant*. This conclusion is consistent with the general conformity review provided by MDAQMD in the letter dated October 8, 2025 (MDAQMD 2025c).

Conclusion

As shown in Table 4.3-6, estimated mitigated construction emissions for NO_X, PM_{10}, and $PM_{2.5}$ would exceed the applicable MDAQMD daily significance thresholds. Additionally, as shown in Table 4.3-8, estimated daily mitigated operational emissions for VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$ exceed applicable MDAQMD significance thresholds, and annual mitigated operational emissions would exceed applicable MDAQMD significance thresholds for VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$ as well. Therefore, based on the

above criteria, the proposed Project would have a *potentially significant impact* related to increased air pollutant emissions during construction and operation. However, as discussed above, these emissions would not result in an exceedance of the applicable NAAQS or CAAQS for the region, and impacts related to the General Conformity Rule would be *less than significant*.

Impact AQ-2	
Despite implementation of APMs AQ-1, AQ-2, AQ-3, DF-1, and DF-6, the Project could result in a cumulatively considerable net increase of criteria pollutants that would exceed applicable MDAQMD thresholds during construction and operation.	
Mitigation Measures	
MM-AQ-1	***Dust Control Measures**. The Project shall implement the following dust control measures outlined in the 1997 Castle Mountain Mine Expansion Project Environmental Impact Statement/Environmental Impact Report (EIS/EIR):* *a. Haul roads within the site boundary shall be surfaced with durable gravel and shall be well maintained.* *b. Water or surface binding agents shall be applied to haul and access roads within the site boundary as needed, depending on traffic volumes, ambient wind, and climatological conditions.* *c. Speed restrictions of 35 miles per hour or less shall be enforced on mine roads to minimize surface disturbance of the roadways.* *d. Vehicle travel shall be restricted within the site boundary to minimize surface disturbance of the roadways.* *e. Vehicle travel to and from the Project site shall be reduced by the promotion of van pools/busing for workers.* *f. During all drilling operations, air drilling equipment shall be shrouded with standard debris collection devices and/or wet drilling techniques. Manufacturer specifications for all shrouding devices shall be submitted to the Mojave Desert Air Quality Management District (MDAQMD) for review before use. The debris collection devices shall have a minimum design efficiency of 90%.* *g. The live storage portion of the coarse ore stockpile shall be covered to minimize windblown dust.* *h. Blasting during high winds shall be minimized or curtailed to minimize windblown dust.* *i. The primary, secondary, and tertiary crushers, screens, and all transfer points shall be completely enclosed or shrouded to minimize exposure to wind and, at a minimum shall use spray bars to control fugitive dust emissions. Conveyors shall be enclosed in selected areas where the moisture content and/or consistency of the material would allow generation of wind blown dust.* *j. Dust suppression for secondary/tertiary ore crushing operations shall be controlled using baghouses constructed to specifications acceptable to the MDAQMD.*
MM-AQ-2	***Emission Control Measures**. Potential emissions associated with the Project shall be controlled by various methods and technologies. Emissions from the operation of generators and off-road equipment shall be minimized through the use of engines which meet Federal Tier 4 Final standards during construction and operations when feasible. Potential emissions associated with the crushers, screens, and select material transfer handling points shall be either controlled with moisture, enclosure, and/or vented to baghouses and bin vents. Fugitive dust from disturbed operational areas and off-road areas with vehicular traffic shall be controlled using water application on an hourly basis. Unpaved road fugitive dust emissions from the access road and primary haul roads shall be controlled by applying a chemical suppressant. On-site haul roads shall also be controlled with watering. Blast hole drilling and blasting particulate matter emissions shall be reduced because the pit in which blasting activities take place will effectively act as a windscreen. Mercury emissions from the retort system shall be controlled with carbon scrubbers.*

Impact AQ-2
Impacts Following Mitigation
With implementation of Mitigation Measures MM-AQ-1 and MM-AQ-2, criteria air pollutant emissions would be reduced during the construction period and during operational activities. However, emissions of NO_X, VOC, CO, PM_{10}, and $PM_{2.5}$ would likely continue to exceed the applicable MDAQMD significance thresholds during construction and operation, and impacts would be significant and unavoidable.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

IMPACT AQ-3: THE PROJECT WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS. *(LESS THAN SIGNIFICANT)*

According to the MDAQMD CEQA Guidelines, a project may be considered significant if it exposes sensitive receptors to pollutant concentrations resulting in a cancer risk of 10 in a million or greater, and/or a Hazard Index of one or greater. The guidelines identify sensitive receptor land uses as existing or planned residences, schools, daycare centers, playgrounds, and medical facilities. For industrial projects such as the proposed Project, health risks must be evaluated for significance if a sensitive receptor land use is within 1,000 feet of the Project boundary (MDAQMD 2020).

Figure 4.3-1 shows the locations of the nearest residence, school, daycare center, playground, and medical facility relative to the Project site. The closest sensitive receptor land use is a residential property situated more than 28,000 feet (5.3 miles) from the Project boundary. Given this considerable distance, further evaluation of potential health risks was not conducted.

NOA has been identified as a TAC by CARB. In accordance with the CARB Air Toxics Control Measure (ATCM), prior to any grading activities, a geologic evaluation should be conducted to determine if NOA is present within the area that would be disturbed. If NOA is not present, an exemption request form, along with a copy of the geologic report, must be filed with the MDAQMD. If NOA is found at the site, the applicant must comply with all requirements outlined in the Asbestos ATCM. Based on a review of the U.S. Geological Survey (USGS) map depicting potential areas of NOA, the proposed Project would not be in or near an area that has been identified as having potential for NOA (CARB 2000).

As the proposed Project is within the MDAQMD, the facility is subject to numerous federal, state, and local regulations that limit hazardous air pollutant emissions and require ongoing evaluation of potential health risks from site operations. MDAQMD Rule 1320 mandates State Toxic New Source Review for any new or modified emission units with the potential to emit TACs or those subject to the ATCM The initial step in this review is calculating prioritization scores for carcinogenic effects, noncarcinogenic acute effects, and noncarcinogenic chronic effects for each new or modified emission unit. This is done using the most recent California Air Pollution Control Officers Association (CAPCOA) Facility Prioritization Guidelines and the latest OEHHA unit risk factors for cancer potency and reference exposure levels for non-cancer acute and chronic effects.

State Toxic New Source Review has been completed for all new and modified emission units. To date, the prioritization score for the existing mining facility has remained below 10, which is the threshold for classification as a High Priority Facility (Ramboll 2025a). A health risk assessment is only required if this threshold is exceeded. The 2022 Plan proposes to use grid power for half of the stationary equipment's on-site power needs, which will eliminate most diesel generators currently operating at the site and reduce potential health risks associated with diesel PM emissions from stationary sources. Additionally, the

CAPCOA Facility Prioritization Guidelines provide receptor proximity adjustments only for distances up to 1.2 miles (CAPCOA 2025). As previously discussed, the nearest sensitive receptor is over 5 miles from the Project site; therefore, the resulting health risks and prioritization scores would be even lower than those quantified to date. Therefore, construction- and operation-generated emissions of TACs would be *less than significant*, and mitigation is not necessary.

Impact AQ-3
The Project would not expose sensitive receptors to substantial pollutant concentrations.
Mitigation Measures
Mitigation is not necessary. Impact AQ-3 would be less than significant.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

IMPACT AQ-4: THE PROJECT WOULD NOT RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE. *(LESS THAN SIGNIFICANT)*

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding (Agency for Toxic Substances and Disease Registry 2026). Project construction and operation could result in emission of odors from construction equipment and vehicles. During construction and operation, a limited number of diesel engines would be operated on the Project site for limited durations. Diesel exhaust and VOCs from these diesel engines would be emitted; however, emissions would be limited in extent at any given time and distributed throughout the Project site. In addition, emissions would disperse rapidly from the Project site and diesel exhaust odors would be consistent with existing vehicle odors in the area. As previously discussed, the nearest sensitive receptor is over 5 miles from the Project site; therefore, it would be unlikely that any odors related to diesel exhaust would adversely affect any nearby residents.

The proposed project does not include any uses identified as being associated with odors. In addition, beyond one residence adjacent to the Project site, there are not substantial numbers of people within the vicinity. Considering this information, construction and operation of the proposed Project would not create other emissions or odors adversely affecting a substantial number of people; impacts would be *less than significant*, and mitigation is not necessary.

Impact AQ-4
The Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
Mitigation Measures
Mitigation is not necessary. Impact AQ-4 would be less than significant.

4.3.6 Cumulative Impacts

IMPACT AQ-5: THE PROJECT WOULD CONTRIBUTE TO CUMULATIVE IMPACTS RELATED TO AIR QUALITY. *(SIGNIFICANT AND UNAVOIDABLE)*

The MDAQMD relies on SCAQMD guidance for determining cumulative impacts. SCAQMD has recognized that there is typically insufficient information to quantitatively evaluate the cumulative contributions of multiple projects because each project applicant has no control over nearby projects. SCAQMD published a report on how to address cumulative impacts from air pollution: *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution* (SCAQMD 2003). In this report, AQMD clearly states (page D-3):

> . . . the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.
>
> Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2003).

Individual projects that generate operational or construction emissions exceeding MDAQMD's recommended thresholds for project-specific impacts may also contribute substantially to cumulative emissions of pollutants for which the MDAB is in nonattainment. As a result, such projects would be considered to have a significant adverse impact on air quality. As discussed above in Impact AQ-2, the proposed Project would exceed MDAQMD's recommended daily and annual thresholds for NO_X, PM_{10}, VOC, CO, and $PM_{2.5}$, which are pollutants in nonattainment in the region of the proposed Project. As previously noted, despite implementation of MM-AQ-2.1, the proposed Project construction-source and operational-source air pollutant emissions would still exceed applicable MDAQMD regional thresholds. As such, Project construction and operational-source emissions are considered *significant and unavoidable* and would be *cumulatively considerable.*

Impact AQ-5 (Cumulative Impacts)
The Project would contribute to cumulative impacts related to air quality.
Mitigation Measures
Implement MM-AQ-1 and MM-AQ-2.

Impact AQ-5 (Cumulative Impacts)
Impacts Following Mitigation
With implementation of Mitigation Measures MM-AQ-1 and MM-AQ-2, criteria air pollutant emissions would be reduced during the construction period and during operational activities. However, emissions of NO_X, PM_{10}, VOC, CO, and $PM_{2.5}$, for which the district in designated as nonattainment, would likely continue to exceed the applicable MDAQMD significance thresholds during construction and operation, and impacts would be cumulatively considerable.

4.4 BIOLOGICAL RESOURCES

This section of the EIR analyzes potential impacts to biological resources resulting from the implementation of the proposed Project. The analysis is based on a review of existing resources, technical data, and applicable laws, regulations, and guidelines, including Appendix G of the State CEQA Guidelines, as well as technical reports prepared for the proposed Project.

4.4.1 Existing Conditions

4.4.1.1 Regional Setting

The Project Area is located in the Mojave Desert, approximately 100 miles east of the city of Barstow, California; 60 miles south of the city of Las Vegas, Nevada; and 40 miles northwest of the BLM NFO, near the border of California and Nevada. The Project is located in both Clark County, Nevada, and San Bernardino County, California. The Mojave Desert's western boundary is formed by the convergence of the Tehachapi and San Gabriel Mountains, and its southern boundary extends east of the San Bernardino and San Gabriel Mountains toward Lake Havasu City in Arizona along the boundary with the Sonoran Desert. Most of the Mojave Desert lies at roughly 3,000 to 6,000 feet above mean sea level (amsl), and it is therefore considered a high desert. However, the Mojave Desert encompasses a broad elevation range, including peaks that exceed 11,000 feet amsl and Death Valley, which has the lowest recorded elevation in North America, at 282 feet below mean sea level (bmsl).

Much of the Mojave Desert consists of typical mountain and basin topography where basin-to-mountain transition zones support high levels of biodiversity and endemic species. Flatter portions of the desert floor are characterized by expansive playas, dry lakes, and other ephemeral waters interspersed with dunes. This geomorphology is referred to as pan and dune complexes, which are characterized by yucca species (*Yucca* spp.), saltbush species (*Atriplex* spp.), and Great Basin sagebrush (*Artemisia tridentata*). Fine wind-blown sand from dry lakebeds and river channels can create hummocks and dunes that support unique species of insects, plants, and reptiles. Slopes and bajadas in the region are covered with creosote bush (*Larrea tridentata*), saltbush, bursage (*Ambrosia* spp.), and bladdersage (*Salazaria mexicana*). In years with sufficient rainfall, the desert floor vegetation communities will include an abundance of annual wildflowers. Most succulent species are found in areas with coarse, well-drained soils, including western and eastern Joshua trees (*Yucca brevifolia* and *Y. jaegeriana*, respectively). Higher elevations support additional succulents such as blackbrush (*Coleogyne ramosissima*) and banana yucca (*Y. baccata*).

The Mojave Desert is characterized by hot summer temperatures (average daily highs above 100 degrees Fahrenheit) and low annual precipitation (approximately 5 inches). Daily temperature ranges of 40 degrees Fahrenheit can occur, with lows in the winter below or near freezing. Precipitation extremes are also common, with variations of 80% in annual precipitation and occasional high-volume storm events. Summer monsoons can drop more precipitation on a site in one event than the mean yearly precipitation for that location. High winds can occur, with velocities that regularly exceed 50 miles per hour (mph) in some areas and that can reach 100 mph on rare occasions (U.S. Geological Survey [USGS] 2004).

Deserts in general are defined by low levels of precipitation, and the Mojave Desert's latitude and location east of the southern Sierra Nevada and north of the Transverse Ranges result in a rain shadow on the desert side of the mountains, where precipitation is far less than on the coastal side. During the summer, the western edge of the Mojave Desert is heavily influenced by the dry southwest airflows, resulting in typically dry weather. The influence of the southwest winds diminishes toward the eastern

Mojave Desert, and the central portion of the Mojave Desert experiences a more continental influence and monsoon weather patterns (USGS 2004).

4.4.1.2 Project Site

The proposed Project would occupy desert habitats in both California and Nevada. The analysis herein solely considers impacts on land in California pursuant to CEQA. The Project Area is in the Mojave Desert near the border of California and Nevada, approximately 100 miles east of Barstow, California, and 60 miles south of Las Vegas, Nevada. The proposed power and water lines traverse land in both California and Nevada (see Figure 2-1 in Chapter 2, *Project Description*).

4.4.1.3 Biological Resource Study Areas

The Project Area includes the mine expansion area, access areas, and utility improvement ROWs as described in Section 2.4, *Project Components*, in Chapter 2, *Project Description* (see Figure 2-2). For purposes of this analysis, the project area (Project Area) for the proposed expansion encompasses the full extent of proposed ground disturbance for all project components (1,833.38 acres; see Table 4.4-1). The biological resources study area (study area) encompasses the Project Area, in whole or in part, and may also include adjacent areas surveyed to satisfy species-specific survey protocols and applicable buffer requirements (see Table 4.4-1). The study area may be larger than the Project Area or individual ROWs because it includes relevant survey buffers beyond the limits of direct disturbance. The study areas for each technical report are included in Table 4.4-2.

Table 4.4-1. Project Disturbance Area (California Only)

Project Disturbance	Acreage
Long-term, Proposed	1,237.1
Short-term Proposed	321.60
Currently Developed (Existing Mine Facilities)	274.68
Total	**1,833.38**

Table 4.4-2. Biological Surveys Conducted for the Castle Mountain Mine Site and/or ROWs

Surveyor(s)	Technical Study	Survey Date(s)	Study Area
BioResource Consultants Inc. (BRC)	*Bat Habitat Assessment, Castle Mountain Mine Project*	February 2018	Fourteen potential habitat features within Mine Area (existing and proposed)
Brown-Berry Biological Consulting	*Mine Surveys for Bats and Other Wildlife at Castle Mountain Mine Project, San Bernardino County, California*	June 2018	Abandoned Mine Features within Mine Area (existing and proposed)
Brown-Berry Biological Consulting	*Winter Mine Surveys for Bats and Other Wildlife At Castle Mountain Mine Project*	January–February 2019	Abandoned Mine Features within Mine Area (existing and proposed)
California Department of Fish and Wildlife	*October 2019 Desert Bighorn Sheep Helicopter Surveys*	October 2019	Predetermined polygons within the Castle and Piute Mountains, Clipper Mountains, Granite Mountains, Newberry/Rodman/Ord Mountains, Orocopia Mountains, Resting Spring Range, and Wood/Hackberry Mountains

Surveyor(s)	Technical Study	Survey Date(s)	Study Area
ECORP	*Focused Fall Rare Plant and Desert Bighorn Sheep Survey and Habitat Assessment Report*	October 2020	Pedestrian Rare Plant Survey: 1,700 acres within central, western, and southern portions of Approved Mine Boundary Drone Rare Plant Survey: 700 acres within eastern and northeastern portion of Approved Mine Boundary Drone Bighorn Sheep Survey: 1,400 acres within northeastern portion of Approved Mine Boundary
Bio Logical, LLC	*Castle Mountain Mine [Desert Tortoise] Presence/Absence Survey and Density Estimate*	October 2020	Within eastern, western, and northern portions of Approved Mine Boundary
ELMT Consulting	*Results of the Inventory/ Assessment of Joshua Trees (Yucca jaergeriana) within the South Over Burden Target Area at the Castle Mountain Mining Site, San Bernardino County, California*	April 2021	South Overburden Footprint within Approved Mine Boundary
ECORP	*Addendum Report for Focused Rare Plant Survey (Spring 2021)*	May 2021	2,400 acres within eastern, central, and western portions of Approved Mine Boundary
Glenn Lukos Associates, Inc.	*Jurisdictional Delineation of the Castle Mountain Mine Phase II Expansion Project Site, Located at the Castle Mountain Mine, San Bernardino County, California*	July, October 2021	3,662 acres within eastern, central, and western portions of Approved Mine Boundary
ECORP	*Results of a Creosote Bush Ring Survey for the Castle Mountain Mine Expansion Project, San Bernardino County, California*	November-December 2021	2,400 acres within eastern, central, and western portions of Approved Mine Boundary
BRC	*[Golden Eagle tracking]* *Progress Report #1* *Update on Golden Eagle Movements and Trapping in 2022* *Progress Report BRC_Castle202301*	January 2022-March 2023	Trapping Site near Hart Mountain, 10-mile buffer around Approved Mine Boundary
SWCA	*Bureau of Land Management Special-Status Plant Surveys for the Castle Mountain Mine Project*	November 2023	Proposed utility ROW corridor from Nipton, California, to Walking Box Ranch Road (120-foot buffer) and from Walking Box Ranch Road to Approved Mine Boundary (100-foot buffer)
Glenn Lukos Associates, Inc.	*Report of Biological Surveys for the Ivanpah Underground Waterline and 69kV Overhead Powerline Rights-of-Way Project, Located in Unincorporated San Bernardino County, California, and Unincorporated Clark County, Nevada*	December 2023-July 2024	404 acres along proposed utility ROW corridor from Nipton, California, to Approved Mine Boundary

Surveyor(s)	Technical Study	Survey Date(s)	Study Area
Glenn Lukos Associates, Inc.	*Jurisdictional Delineation of the Ivanpah Underground Waterline and 69kV Overhead Powerline Rights-of-Way Project, an Approximately 30- Mile Linear study area in San Bernardino County, California, and Clark County, Nevada, Associated with Castle Mountain Mine*	December 2023, April 2024	Proposed utility ROW corridor
SWCA	*Bureau of Land Management Special-Status Plant Surveys for the Castle Mountain Mine Project*	May-June 2025	Unsurveyed areas of utility corridor along Walking Box Ranch Road/ Castle Mountain Mine Road between Approved Mine Boundary and SR-164 (ranging between 33 and 164 feet in width) and along SR-164 between walking Box Ranch Road and Nipton, California (ranging between 33 and 98 feet in width), as well as laydown yards

4.4.1.4 Existing Conditions Methodology

An SWCA biologist compiled vegetation community data for the study area from the *Vegetation Classification and Mapping Program* (VegCAMP) (California Department of Fish and Wildlife [CDFW] 2026c) vegetation layer. Information from prior vegetation surveys completed at the study site was also reviewed to inform the existing conditions; however, those reports did not include a vegetation map. Vegetation mapping units from VegCamp were then cross-referenced to alliance nomenclature in *A Manual of California Vegetation* online (MCV) (California Native Plant Society [CNPS] 2026a) and the U.S. National Vegetation Classification (USNVC) (USNVC 2025). A mapping discrepancy was identified, and some VegCAMP vegetation labels did not crosswalk directly to alliance-level classifications. Accordingly, vegetation community assignments reflect the best-available VegCAMP-to-MCV/USNVC crosswalk.

Previous biological studies completed for the project site were reviewed to characterize biological resources and to compile the special status species previously reported. For the purposes of a comprehensive and current analysis herein, SWCA biologists conducted an additional desktop review of species occurrence records from the CDFW California Natural Diversity Database (CNDDB) RareFind 5 and the CNPS Rare Plant Inventory to update the list of special status plant and wildlife species with potential to occur in the study area (CDFW 2026a; CNPS 2026b). The CNDDB queries focused on the nine USGS 7.5-minute quadrangles that contain and surround the study area: Hart, Crescent Peak, West of Juniper Mine, East of Grotto Hills, Grotto Hills, Castle Peaks, Pinto Valley, Ivanpah, and Nipton.

Potential for occurrence of special status species within the proposed Project Area and the immediate vicinity was assessed based on previous biological studies and database searches. Special status species evaluated in this study include plants and animals in one or more of the following categories:

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA) (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [FR] [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under ESA (U.S. Fish and Wildlife Service [USFWS] 2026a).
- Species listed by the BLM as sensitive (BLM 2019, 2023)

- Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (14 California Code of Regulations [CCR] 670.5).
- Species that meet the definitions of rare or endangered under the CEQA (State CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.).
- Plants listed in CNPS California Rare Plant Rank (CRPR) system (Ranks 1A, 1B, 2A, or 2B) (CNPS 2026b).
- Animals listed on the California Special Animals List (CDFW 2025b).
- Animals fully protected in California (California Fish and Game Code Sections 3511 [birds], 4700 [mammals], 5050 [amphibians and reptiles], and 5515 [fish]).

If a species was previously surveyed for and observed, it was assigned a "Present" designation. If a species was previously surveyed but not observed, it was assigned a potential to occur based on habitat suitability. Given the temporal gaps and inconsistent study areas, this species potential to occur methodology accounts for species and timing exclusions that occurred during surveys for the proposed expansion areas. The methodology accounts for which species were surveyed for during each survey, and which may have been excluded based on possibly having missed the appropriate season of detectability relevant to each species. Further, any species not included in previous focus species lists and/or desktop reviews/literature searched have been assigned to one of the categories described below.

- **High Potential:** The species has been documented in the vicinity (within 5 miles of the study area based on recent [within 20 years] CNDDB or other records or based on professional expertise specific to the area or species) and there is suitable habitat within the study area that makes the probability of the species occurring there high. Alternatively, there is suitable habitat within the study area and within the known range of the species. Bird species in this category were differentiated based on their occurrence within the study area as breeding, foraging only, and/or transients.
- **Moderate Potential:** Species is known to occur within the study area (based on nonhistorical [within 40 years] CNDDB or other records or based on professional expertise specific to the area or species) and there is moderate-quality habitat at the study area that makes the probability of the species occurring there moderate. Alternatively, there is moderate-quality habitat in the part of the study area that falls within the known range of the species.
- **Low Potential:** The study area is within the species' currently known range, but vegetation communities, soils, etc., do not resemble those known to be used by the species; conditions appear suitable, but the study area is beyond the species' currently known range; or species was recorded more than 40 years ago within the study area.
- **Presumed Absent:** The study area is outside of the species known elevation range, and suitable habitat does not occur within the study area(s).

4.4.1.5 Vegetation Communities

Vegetation within the study area is characterized by intermittent native desert scrub. Four vegetation communities were mapped based on the VegCAMP layer and subsequent MCV:/USNVC crosswalk: Creosote Bush Mixed Scrub (*Larrea tridentata* Shrubland Alliance), Desert Wash System (*Hymenoclea*

salsola Desert Wash Shrubland Alliance), Joshua Tree Woodland (*Yucca brevifolia*[1] Woodland Alliance), and Mojave Yucca Scrub (*Yucca schidigera* Scrub Alliance) (Table 4.4-3; Figure 4.4-1). Areas associated with existing mine facilities and other disturbed features were mapped as Developed landcover.

Sensitive vegetation communities are defined by CDFW as those "communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects" (CDFW 2018). Vegetation communities with a State Rank of 1, 2, or 3 are considered sensitive by CDFW. Based on the mapped alliance-level communities, Joshua Tree Woodland (State Rank S3.2) is considered a sensitive vegetation community. In addition, the Desert Wash System community was mapped as State Rank S1 within temporary disturbance areas and is therefore also considered sensitive.

A focused rare plant survey conducted in Spring 2021 verified that the Project Area is still characterized by desert scrub vegetation common in the eastern Mojave Desert (ECORP 2021b).

Table 4.4-3. Vegetation Communities and Land Cover Types (California)

Vegetation Community	Global Rank*	State Rank†	Acres within the Project Area‡
Creosote Bush Mixed Scrub (*Larrea tridentata* Shrubland Alliance)	G5	S5	6.82
Desert Wash System (*Hymenoclea salsola* Desert Wash Shrubland Alliance)**	G4	S4	46.38
Joshua Tree (*Yucca brevifolia* Woodland Alliance)**	G4	S3.2	639.31
Mojave Yucca (*Yucca schidigera* Scrub Alliance)	G4	S4	866.19
Subtotal			*1,558.7*
Developed (Existing Mine Facilities)	-	-	274.68
Total			**1,833.38**

* Global Rank (NatureServe 2026): Indicates the vegetation alliance's rarity and threat globally.

** Sensitive vegetation communities considered by CDFW (CDFW 2025a)

† State Rank (NatureServe 2026): Indicates the vegetation alliance's rarity and threat in California.

‡ Project Area indicates the overall disturbed area, past, present, and proposed expansion.

[1] The MCV references the previous Jepson Manual scientific name for Joshua trees prior to splitting into western Joshua tree (*Y. brevifolia*) and eastern Joshua tree (*Y. jaegeriana*) in the treatment of Joshua Tree Woodland. Eastern Joshua tree (*Y. jaegeriana*) was previously included as *Y. brevifolia* var. *jaegeriana*.

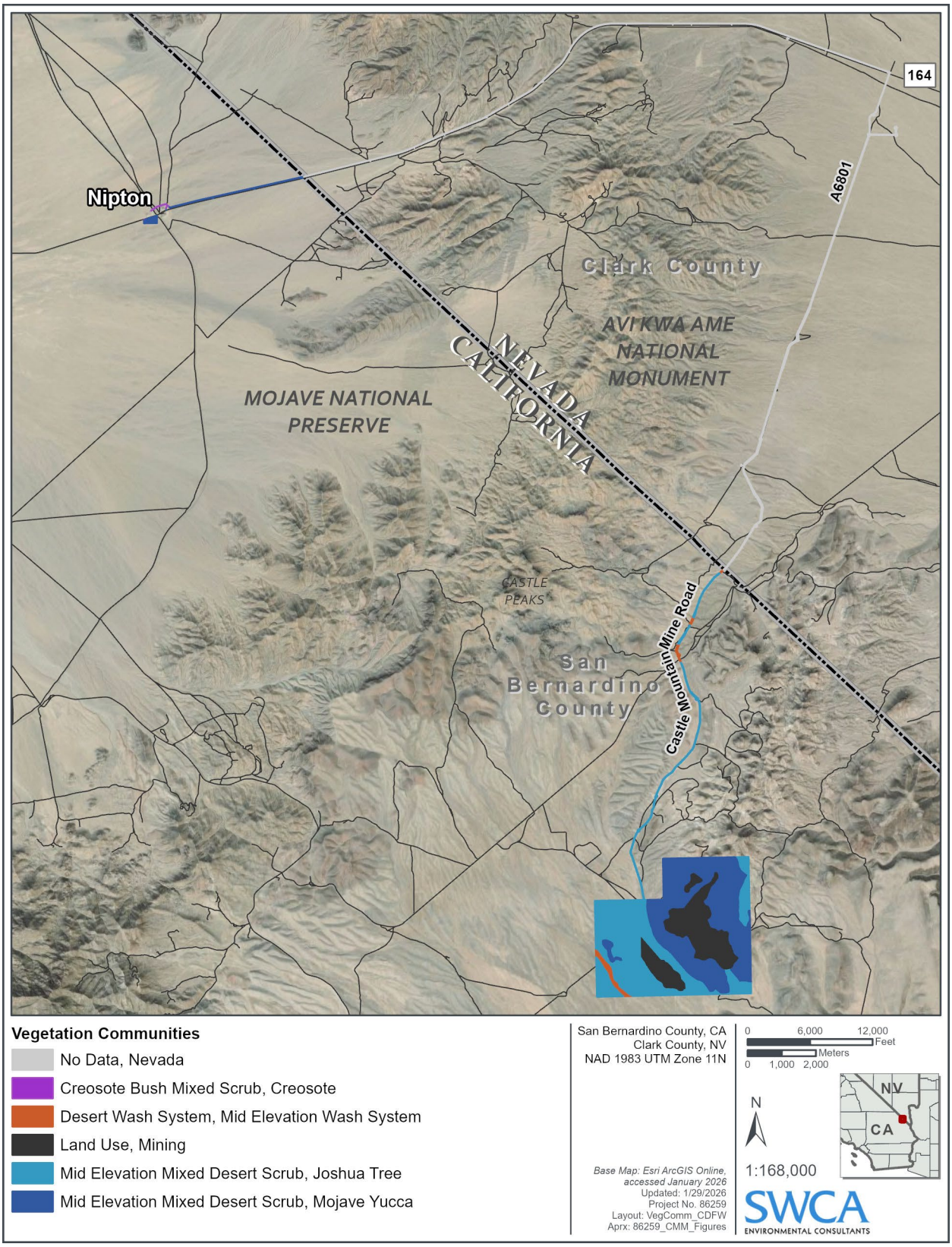


Figure 4.4-1. MCV Vegetation Communities

CREOSOTE BUSH MIXED SCRUB

Creosote Bush Mixed Scrub (*Larrea tridentata* Shrubland Alliance) is a widespread Mojave Desert scrub community characterized by an open to intermittent shrub canopy dominated by creosote bush, often with associated shrubs such as white bursage (*Ambrosia dumosa*), cheesebush (*Ambrosia salsola*), ephedra (*Ephedra* spp.), and saltbush. This alliance typically occurs on well-drained alluvial fans, bajadas, upland slopes, and minor intermittent washes, sometimes with desert pavement. The *Larrea tridentata* Shrubland Alliance is ranked State Rank S5 and is not considered sensitive. This alliance comprises 6.82 acres of the Project Area.

DESERT WASH SYSTEM

Desert Wash System (*Hymenoclea salsola* Desert Wash Shrubland Alliance) represents wash and drainage-channel scrub where burrobrush (*Ambrosia salsola*) occurs with other desert shrubs along braided washes, arroyos, and drainage channels. Stands generally occur on coarse-textured alluvial substrates (sand to loam, often gravelly) on flat to gently sloping wash surfaces, and may include a mix of desert scrub associates (including creosote bush) depending on local geomorphology and moisture availability. In the study area, this community is associated with ephemeral drainages and wash features and may be more limited in extent than surrounding upland scrub. Desert Wash System community is ranked State Rank S1 within temporary disturbance areas and is therefore also considered sensitive. This alliance comprises 46.38 acres of the Project Area.

JOSHUA TREE WOODLAND

Joshua Tree Woodland (*Yucca brevifolia*[2] Woodland Alliance) is characterized by a sparse to open tree layer of eastern Joshua trees (*Yucca jaegeriana*) over an understory of desert shrubs and herbaceous annuals/perennials, typically on alluvial fans, flats, and gentle slopes within the Mojave Desert transition to woodland structure. The Joshua Tree Woodland Alliance is ranked State Rank S3.2, indicating it is uncommon to rare at the state level and therefore considered a sensitive vegetation community. This alliance comprises 639.31 acres of the Project Area.

MOJAVE YUCCA SCRUB

Mojave Yucca Scrub (*Yucca schidigera* Shrubland Alliance) is defined by Mojave yucca as a characteristic emergent shrub/small tree over an open to intermittent shrub and grass layer, commonly occurring on upper bajadas, alluvial fans, and rocky slopes with well-drained sandy loam soils. This community is typically intergraded with other Mojave Desert scrub alliances (e.g., creosote bush scrub and mixed scrub) depending on soils and slope position. The Mojave Yucca Scrub Shrubland Alliance is ranked State Rank S4 and is not considered sensitive. This alliance comprises 866.19 acres of the Project Area.

DEVELOPED

Developed landcover includes existing mine facilities and other areas of concentrated ground disturbance such as maintained dirt roads, pads, and staging or storage areas. Vegetation in these areas is sparse to absent and is dominated by bare ground, compacted soils, and ruderal or non-native herbaceous species where soils remain suitable for colonization. Developed landcover comprises 274.68 acres of the Project Area.

[2] The MCV references the previous Jepson Manual scientific name for Joshua trees prior to splitting into western Joshua tree (*Y. brevifolia*) and eastern Joshua tree (*Y. jaegeriana*) in the treatment of Joshua Tree Woodland. Eastern Joshua tree (*Y. jaegeriana*) was previously included as *Y. brevifolia* var. *jaegeriana*.

4.4.1.6 Special Status Plants

Between 2020 and 2025, four plant surveys have been conducted for various areas of the Project Area. ECORP conducted a focused pedestrian fall rare plant survey and a fall rare plant habitat assessment small Unmanned Aerial System (sUAS) survey in 2020, and spring rare plant surveys in 2021 for the study area (ECORP 2021a, 2021b; Table 4.4-4). SWCA conducted a focused pedestrian survey for BLM special-status plants in 2023 and again in 2025 (SWCA 2025; Table 4.4-4). All surveys were consistent with the following resources: *Survey Protocols Required for NEPA and ESA Compliance for BLM Special Status Plant Species*; *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants*; *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*; and *CNPS Botanical Survey Guidelines* (BLM 2009; USFWS 2000; CDFW 2018; CNPS 2001). Point and polygon data were recorded using GPS equipment with submeter accuracy. Special-status plants surveys conducted for the Project between 2020 and 2025 are depicted in Figure 4.4-2.

Table 4.4-4. Rare Plant Surveys Conducted for the Castle Mountain Mine Site and/or ROWs

Surveyor(s)	Technical Study	Survey Date(s)
ECORP	*Focused Fall Rare Plant and Desert Bighorn Sheep Survey and Habitat Assessment Report*	October 26–30, 2020
ECORP	*Addendum Report for Focused Rare Plant Survey (Spring 2021)*	May 17–21, 2021
SWCA	*Bureau of Land Management Special-Status Plant Surveys for the Castle Mountain Mine Project*	November 17, 20, 22, 27, and 28, 2023
SWCA	*Bureau of Land Management Special-Status Plant Surveys for the Castle Mountain Mine Project*	May 28–31 and June 1, 16, 17, 19, 20, 23–25, 2025

From October 26 through 30, 2020, a team of four ECORP biologists surveyed an approximately 2,400-acre study area (see Table 4.4-4). Pedestrian surveys were completed across approximately 1,700 acres of the proposed expansion area, and a small unmanned aerial system (sUAS) habitat assessment was conducted over the remaining approximately 700 acres to identify areas with potential rare plant habitat. The fall 2020 pedestrian survey targeted 15 fall-blooming special-status plant species and was timed to coincide with the period when those species would be most detectable and identifiable. None of the 15 fall-blooming target species were observed during the 2020 survey. However, three species included on the spring target list were documented during the fall 2020 effort: Parish's club-cholla (*Grusonia parishii*), viviparous foxtail cactus (*Coryphantha vivipara var. Rosea*), and rosy two-toned beardtongue (*Penstemon bicolor* ssp. *roseus*) (ECORP 2021a; Table 4.4-5). The potential for occurrence determinations for fall rare plant species and additional detailed information can be found in the *Focused Fall Rare Plant and Desert Bighorn Sheep Survey and Habitat Assessment Report for the Castle Mountain Mine Expansion Project* (ECORP 2021a).

From May 17 through 21, 2021, a team of five ECORP biologists conducted a focused spring rare plant survey within the study area. The spring 2021 survey targeted 29 special-status plant species and was timed to coincide with the blooming period when those species would be most readily detectable and identifiable. During the spring 2021 survey, six spring target species and one fall target species were observed: rosy two-toned beardtongue, Mojave milkweed (*Asclepias (cf.) nyctaginifolia*), black grama (*Bouteloua (cf.) eriopoda*), viviparous foxtail cactus, Parish's club-cholla, thorny milkwort (*Polygala acanthoclada*), and Clark Mountain buckwheat (*Eriogonum* (cf.) *heermannii* var. *floccosum*) (ECORP 2021b; see Table 4.4-5). The potential for occurrence determinations for spring rare plant species and additional detailed information can be found in the *Addendum Report for Focused Rare Plant Survey (Spring 2021) for the Castle Mountain Mine Expansion Project* (ECORP 2021b).

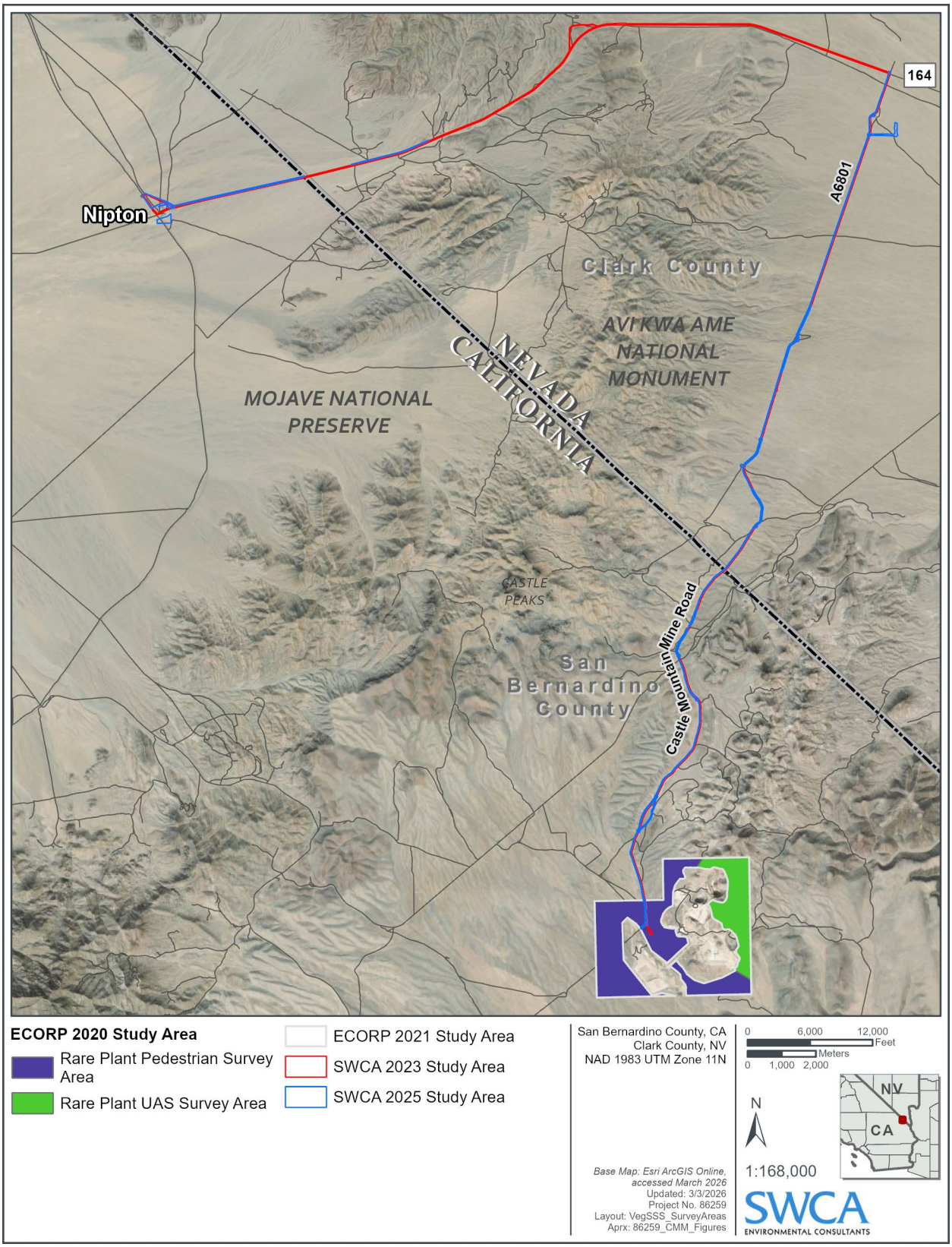


Figure 4.4-2. Special Status Plants Study Areas

In total, seven unique special-status plant species were documented across the 2020 and 2021 surveys (Table 4.4-5; Figure 4.4-3). Three of these species—Parish's club-cholla, viviparous foxtail cactus, and rosy two-toned beardtongue—were recorded during both survey efforts. Clark Mountain buckwheat, a fall-blooming species, was observed during the spring 2021 survey.

SWCA conducted fall surveys for BLM special-status plant species within the proposed water pipeline/utility (ROW) corridor on November 17, 20, 22, 27, and 28, 2023 (SWCA 2023). Surveys were conducted within the proposed utility corridor from Nipton, California, to Walking Box Ranch Road (120-foot buffer) and from Walking Box Ranch Road to the Approved Mine Boundary (100-foot buffer). After the ROW alignment was shifted, follow-up spring surveys for BLM special-status species occurred on May 28–31, 2025, and June 1, 16, 17, 19, 20, 23–25, 2025 to cover all previously unsurveyed portions of the revised corridor (SWCA 2023). This survey included segments along Walking Box Ranch Road/Castle Mountain Mine Road between the Approved Mine Boundary and SR-164 (approximately 33 to 164 feet wide) and along SR-164 between Walking Box Ranch Road and Nipton (approximately 33 to 98 feet wide), as well as associated laydown yards. Areas overlapping the previously surveyed corridor were not resurveyed.

Fall 2023 and spring 2025 survey results documented two BLM special-status plant species within the surveyed areas. Parish's club-cholla was observed by SWCA during both the fall 2023 and spring 2025 surveys, consistent with prior detections during Ecorp's 2020 and 2021 surveys. Scarlet four o'clock (*Mirabilis coccinea*) was documented only during the spring 2025 surveys along Walking Box Ranch Road and had not been recorded during previous botanical surveys conducted for the Project Area (SWCA 2025).

Table 4.4-5. Special Status Plant Species with Potential to Occur within the Study Area

Common Name (Species Name)	Special Status*	Range / Habitat Requirements	Potential in the Study Area
Rosy two-toned beardtongue (*Penstemon bicolor* ssp. *roseus*)	CRPR 1B.1	Blooming period: May. Perennial herb. Occurs at 2,295–4,920 feet amsl in Joshua tree woodland and Mojavean desert scrub.	**Present.** Previous studies documented this species within the study area; used during revegetation efforts; observed during the 2020 fall and 2021 spring surveys.
Wright's beebrush (*Aloysia wrightii*)	CRPR 4.3	Blooming period: April–October. Perennial evergreen shrub. Occurs at 2,955–5,250 feet amsl in Joshua tree woodland and pinyon and juniper woodland.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Watson's amaranth (*Amaranthus watsonii*)	CRPR 4.3	Blooming period: April–September. Annual herb. Occurs at 65–5,580 feet amsl in Mojavean desert scrub and Sonoran desert scrub.	**High potential to occur.** Suitable habitat occurs within the study area.
Mojave milkweed (*Asclepias nyctaginifolia*)	CRPR 2B.1	Blooming period: May–June. Perennial herb. Occurs at 2,870–5,580 feet amsl in Mojavean desert scrub and Sonoran desert scrub.	**Present.** Suitable habitat occurs within the study area; observed during 2021 spring surveys.
San Bernardino milk-vetch (*Astragalus bernardinus*)	CRPR 1B.2; BLM Sensitive	Blooming period: April–June. Perennial herb. Occurs at 2,955–6,560 feet amsl in Joshua tree woodland and pinyon and juniper woodland.	**High potential to occur.** Suitable habitat occurs within the Study Area. Species was not detected during surveys.
Cima milk-vetch (*Astragalus cimae* var. *cimae*)	CRPR 1B.2	Blooming period: April–May. Perennial herb. Occurs at 2,920–6,070 feet amsl in Great Basin scrub, Joshua tree woodland, and pinyon and juniper woodland.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.

Common Name (Species Name)	Special Status*	Range / Habitat Requirements	Potential in the Study Area
Providence Mountains milk-vetch (*Astragalus nutans*)	CRPR 4.3	Blooming period: March–June. Perennial herb. Occurs at 1,475–6,400 feet amsl in pinyon-juniper woodland, Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Black grama (*Bouteloua eriopoda*)	CRPR 4.2	Blooming period: May–August. Perennial grass. Occurs at 2,955–6,235 feet amsl in Joshua tree woodland and pinyon-juniper woodland.	**Present.** Suitable habitat occurs within the study area; 2021 spring surveys.
Desert pincushion (*Coryphantha chlorantha*)	CRPR 2B.1	Blooming period: April–September. Perennial stem. Occurs at 150–5,595 feet amsl in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Viviparous foxtail cactus (*Coryphantha vivipara* var. *rosea*)	CRPR 2B.2	Blooming period: May–June. Perennial stem. Occurs at 4,100–8,860 feet amsl in Mojavean desert scrub and pinyon and juniper woodland.	**Present.** Suitable habitat occurs within the study area; observed during the 2020 fall and 2021 spring surveys.
New York Mountains cryptantha (*Cryptantha tumulosa*)	CRPR 4.3	Blooming period: April–June. Annual herb. Occurs at 3,000–6,990 feet amsl in pinyon-juniper woodland and Mojavean desert scrub.	**High potential to occur.** Suitable Mojavean desert scrub habitat occurs within the study area, but juniper woodland does not. Species was not detected during surveys.
Purple-nerve cymopterus (*Cymopterus multinervatus*)	CRPR 2B.2	Blooming period: March–April. Perennial herb. Occurs at 2,590–5,905 feet amsl in Mojavean desert scrub and pinyon and juniper woodland.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Parish's club-cholla (*Grusonia parishii*)	CRPR 2B.2	Blooming period: May–June (July). Perennial stem. Occurs at 985–5,000 feet amsl in Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub.	**Present.** Suitable habitat occurs within the study area; observed across all surveys from 2020-2025.
Plains flax (*Linum puberulum*)	CRPR 2B.3	Blooming period: May–July (October). Annual herb. Occurs at 3,280–8,205 feet amsl in Mojavean desert scrub, Great Basin scrub, Joshua tree woodland, and pinyon and juniper woodland.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Rough menodora (*Menodora scabra* var. *scabra*)	CRPR 2B.3	Blooming period: May–June. Perennial herb. Occurs at 3,935–5,905 feet amsl in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Utah beardtongue (*Penstemon utahensis*)	CRPR 2B.3	Blooming period: April–May. Perennial herb. Occurs at 3,495–8,205 feet amsl in chenopod scrub, pinyon-juniper woodland, Great Basin scrub, and Mojavean desert scrub.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Thorny milkwort (*Polygala acanthoclada*)	CRPR 2B.3	Blooming period: May–August. Perennial shrub. Occurs at 2,495–7,495 feet amsl in chenopod scrub, Joshua tree woodland, and pinyon and juniper woodland.	**Present.** Suitable habitat occurs within the study area; observed during 2021 spring surveys.

Common Name (Species Name)	Special Status*	Range / Habitat Requirements	Potential in the Study Area
Dwarf abutilon (*Abutilon parvulum*)	CRPR 2B.3	Blooming period: April–May. Annual herb. Occurs at 2,955–4,460 feet amsl in chenopod scrub.	**Low potential to occur.** Suitable habitat does not occur within the study area. Species was not detected during surveys.
Scrub lotus (*Acmispon argyraeus* var. *multicaulis*)	CRPR 1B.3; BLM Sensitive	Blooming period: April–June. Perennial herb. Occurs at 3,935–4,920 feet amsl in pinyon-juniper woodland.	**Low potential to occur.** Suitable habitat does not occur within the study area. Species was not detected during surveys.
Nevada onion (*Allium nevadense*)	CRPR 2B.3	Blooming period: April–May. Perennial bulbous herb. Occurs at 2,660–5,580 feet amsl in pinyon and juniper woodland.	**Low potential to occur.** Suitable habitat does not occur within the study area. Species was not detected during surveys.
Narrow-leaved yerba santa (*Eriodictyon angustifolium*)	CRPR 2B.3	Blooming period: May–August. Perennial evergreen shrub. Occurs at 4,920–6,235 feet amsl in pinyon and juniper woodland.	**Low potential to occur.** Suitable habitat does not occur within the study area. Species was not detected during surveys.
Red four o'clock (*Mirabilis coccinea*)	CRPR 2B.3	Blooming period: May–July. Perennial herb. Occurs at 3,510–5,905 feet amsl in pinyon-juniper woodland.	**Present.** Suitable habitat occurs within the study area; observed during 2025 spring surveys.
Appressed muhly (*Muhlenbergia appressa*)	CRPR 2B.2	Blooming period: April–May. Perennial grass. Occurs at 65–5,250 feet amsl in coastal scrub, Mojavean desert scrub, and valley and foothill grassland.	**Moderate to occur.** Moderately suitable habitat occurs within the study area. Species was not detected during surveys.
Spiny cliffbrake (*Pellaea truncata*)	CRPR 2B.3	Blooming period: April–June. Perennial rhizomatous herb. Occurs at 3,935–7,055 feet amsl in pinyon and juniper woodland on granitic, rocky, or volcanic substrates.	**Low potential to occur.** Suitable habitat does not occur within the study area. Species was not detected during surveys.
Aven Nelson's phacelia (*Phacelia anelsonii*)	CRPR 2B.3	Blooming period: April–May. Annual herb. Occurs at 3,935–6,495 feet amsl in Joshua tree woodland and pinyon and juniper woodland.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Sky-blue phacelia (*Phacelia coerulea*)	CRPR 2B.3	Blooming period: April–May. Annual herb. Occurs at 4,595–6,560 feet amsl in Mojavean desert scrub and pinyon-juniper woodland.	**Moderate to high potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Coyote gilia (*Aliciella triodon*)	CRPR 2B.2	Blooming period: April–June. Annual herb. Occurs at 2,000–5,580 feet amsl in Great Basin scrub and pinyon and juniper woodland.	**Low potential to occur.** Limited habitat occurs within the study area. Species was not detected during surveys.
Cove's cassia (*Senna covesii*)	CRPR 2B.2	Blooming period: March–June (August). Annual herb. Occurs at 740–4,250 feet amsl in Sonoran desert scrub.	**Low potential to occur.** Limited habitat occurs within the study area. Species was not detected during surveys.
Harwood's eriastrum (*Eriastrum harwoodii*)	CRPR 1B.2; BLM Sensitive	Blooming period: March–June. Annual herb. Occurs at 410–3,000 feet amsl in desert dunes.	**Presumed absent.** No suitable habitat occurs within the study area, and the study area is outside of the known elevation range for the species. Species was not detected during surveys.

Common Name (Species Name)	Special Status*	Range / Habitat Requirements	Potential in the Study Area
Clark Mountain buckwheat (*Eriogonum* (cf.) *heermannii* var. *floccosum*)	CRPR 4.3; BLM Sensitive	Blooming period: May–October. Perennial deciduous shrub. Occurs at 2,950–7,550 feet amsl in Calcareous (carbonate) gravelly washes and slopes in saltbush and creosote bush communities; occasionally in juniper woodlands.	**Present.** Suitable habitat occurs within the study area; observed during 2021 spring surveys.
Small-flowered bird's-beak (*Cordylanthus parviflorus*)	CRPR 2B.3	Blooming period: August–October. Annual herb (hemiparasitic). Occurs at 2,295–7,220 feet amsl in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Abrams' spurge (*Euphorbia abramsiana*)	CRPR 2B.2	Blooming period: September–November. Annual herb. Occurs below 656 feet amsl on sandy flats in desert scrub.	**Presumed absent.** No suitable habitat occurs within the study area, and the study area is outside of the known elevation range for the species. Species was not detected during surveys.
Clark Mountain spurge (*Euphorbia exstipulata* var. *exstipulata*)	CRPR 2B.1	Blooming period: September. Perennial herb. Occurs at 4,190–6,570 feet amsl in Mojavean desert scrub, sometimes on rocky substrates.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Revolute spurge (*Euphorbia revoluta*)	CRPR 4.3	Blooming period: August–October. Perennial herb. Occurs on rocky slopes in desert scrub; reported below 10,170 feet amsl.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Nine-awned pappus grass (*Enneapogon desvauxii*)	CRPR 2B.2	Blooming period: August–September. Perennial herb. Occurs at 4,185–5,990 feet amsl in pinyon and juniper woodland on carbonate, rocky substrates.	**Low to occur.** Pinyon and juniper woodland do not occur within the study area. Species was not detected during surveys.
Warty caltrop (*Kallstroemia parviflora*)	CRPR 4.2	Blooming period: August–November. Annual herb. Occurs at 2,805–5,595 feet amsl in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland; sometimes in disturbed areas.	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Caespitosa evening-primrose (*Oenothera cespitosa* ssp. *crinita*)	CRPR 4.2	Blooming period: June–September. Perennial herb. Occurs on calcium (carbonate) soils in desert scrub and pinyon-juniper woodland; reported from approximately 8,000–10,200 feet amsl.	**Presumed absent.** No suitable habitat occurs within the study area, and the study area is outside of the known elevation range for the species. Species was not detected during surveys.
False buffalo-grass (*Munroa squarrosa*)	CRPR 2B.2	Blooming period: October. Annual grass. Occurs at 4,920–5,905 feet amsl in pinyon and juniper woodland on gravelly, rocky substrates.	**Low to occur.** Pinyon and juniper woodland do not occur within the study area. Species was not detected during surveys.
Thorne's buckwheat (*Eriogonum thornei*)	CRPR 1B.2	Blooming period: (June) July-August. Perennial shrub. Copper-rich quartzite gravel substrates on ridges/gravelly slopes within pinyon–juniper woodland; known from a very limited area in the New York Mountains (Mojave Desert) around ~1,800–1,830 feet amsl.	**Presumed absent.** No suitable habitat occurs within the study area, and the study area is outside of the known elevation range for the species. Species was not detected during surveys.

Common Name (Species Name)	Special Status*	Range / Habitat Requirements	Potential in the Study Area
Roughstalk witch grass (*Panicum hirticaule* ssp. *hirticaule*)	CRPR 2B.1	Blooming period: August–December. Annual grass. Occurs at 150–4,315 feet amsl in desert dunes, Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub; typically in sandy depressions/silt.	**Low potential to occur.** Suitable habitat occurs within the study area, but the study area is mostly outside the known elevation range for the species. Species was not detected during surveys.
Lobed ground-cherry (*Physalis lobata*)	CRPR 2B.3	Blooming period: September–January (sometimes as early as May). Perennial herb. Occurs at 1,640–2,630 feet amsl in Mojavean desert scrub (sometimes in decomposed granite) and on playas.	**Presumed absent.** No suitable habitat occurs within the study area, and the study area is outside of the known elevation range for the species. Species was not detected during surveys.
Abert's sanvitalia (Sanvitalia abertii)	CRPR 2B.2	Blooming period: August–September (October). Annual herb. Occurs at 5,150–5,905 feet amsl in pinyon and juniper woodland.	**Presumed absent.** No suitable habitat occurs within the study area, and the study area is outside of the known elevation range for the species. Species was not detected during surveys.
Burro grass (*Scleropogon brevifolius*)	CRPR 2B.3	Blooming period: October. Perennial grass. Occurs at 4,460–5,250 feet amsl in Joshua tree woodland and Mojavean desert scrub (decomposed granitic).	**High potential to occur.** Suitable habitat occurs within the study area. Species was not detected during surveys.
Delicate muhly (*Muhlenbergia fragilis*)	CRPR 2B.3	Blooming period: October. Perennial grass. Occurs at 5,250 feet amsl in pinyon and juniper woodland on carbonate, gravelly substrates.	**Presumed absent.** No suitable habitat occurs within the study area, and the study area is outside of the known elevation range for the species. Species was not detected during surveys.

* CNPS Rare Plant Ranks:
1B: Plants rare, threatened, or endangered in California and elsewhere.
2B: Plants rare, threatened, or endangered in California, but more common elsewhere.
4: Plants of limited distribution; a watch list.

CNPS Threat Ranks:
0.1: Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2: Fairly threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)
0.3: Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known

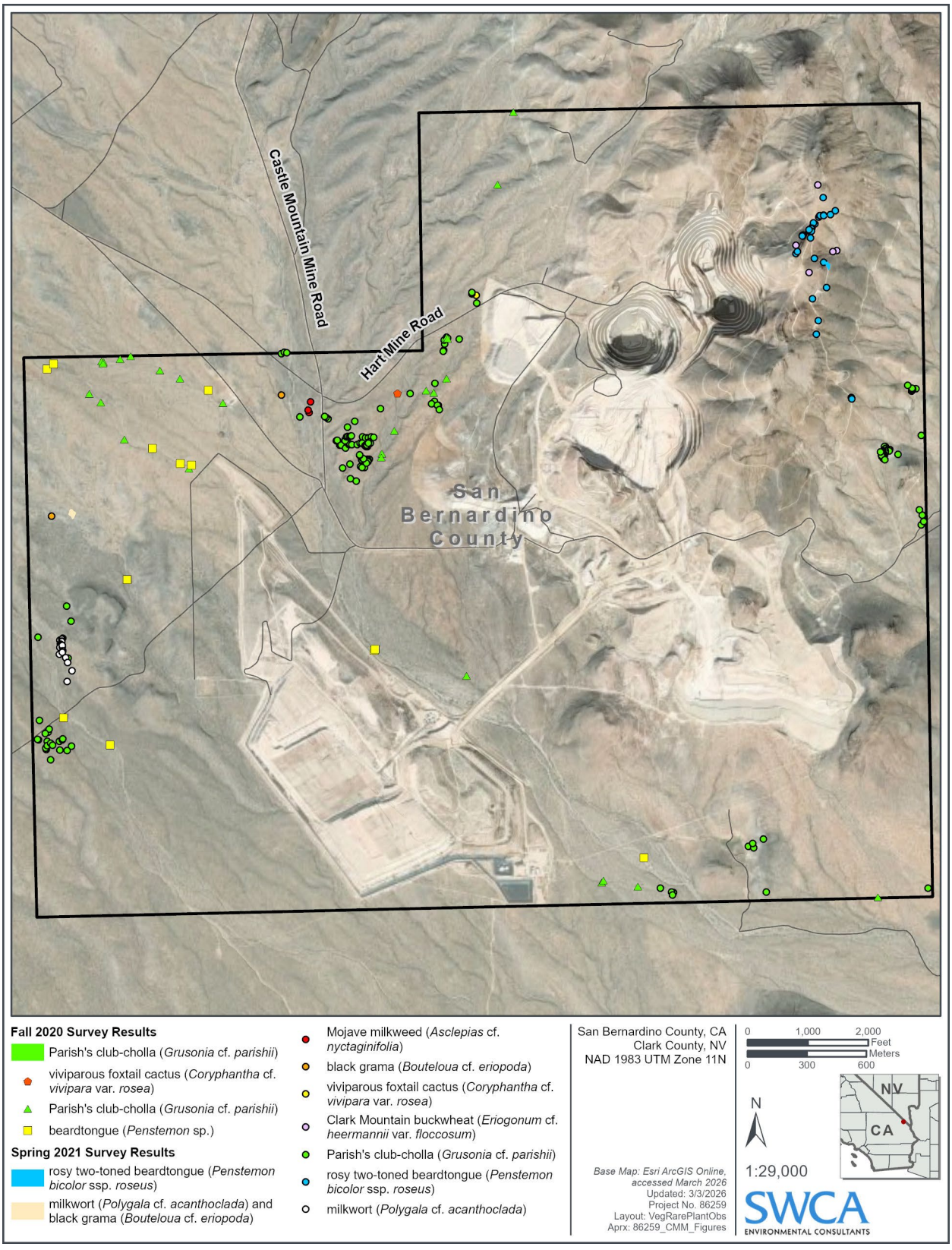


Figure 4.4-3. Special Status Plants Fall 2020 and Spring 2021 Survey Observations

ROSY TWO-TONED BEARDTONGUE

Rosy two-toned beardtongue is a CRPR 1B.1 perennial herb that blooms in May. CRPR 1B plants are rare, threatened, or endangered in California and elsewhere, and a 1B.1 threat rank indicates the species is seriously threatened in California. Rosy two-toned beardtongue occurs in Joshua tree woodland and Mojavean desert scrub at elevations between 2,295 and 4,920 feet amsl. Previous studies have documented this species within the study area, and it has been used in revegetation efforts. The species was observed during the 2020 fall and 2021 spring surveys. Based on documented presence and suitable habitat, rosy two-toned beardtongue is present in the study area.

MOJAVE MILKWEED

Mojave milkweed is a CRPR 2B.1 perennial herb that blooms between May and June. CRPR 2B plants are rare, threatened, or endangered in California but more common elsewhere, and a 2B.1 threat rank indicates the species is seriously threatened in California. Mojave milkweed occurs in Mojavean desert scrub and Sonoran desert scrub at elevations between 2,870 and 5,580 feet amsl. Suitable habitat occurs within the study area, and the species was documented during the 2021 spring surveys. Based on suitable habitat and survey observations, Mojave milkweed is present in the study area.

BLACK GRAMA

Black grama is a CRPR 4.2 perennial grass that blooms between May and August. CRPR 4 plants are watch-list plants of limited distribution, and a CRPR 4.2 threat rank indicates the species is fairly threatened in California. Black grama occurs in Joshua tree woodland and pinyon-juniper woodland at elevations between 2,955 and 6,235 feet amsl. Suitable habitat occurs within the study area, and the species was observed during the 2021 spring surveys. Based on suitable habitat and survey observations, black grama is present in the study area.

VIVIPAROUS FOXTAIL CACTUS

Viviparous foxtail cactus is a CRPR 2B.2 cactus that blooms between May and June. CRPR 2B plants are rare, threatened, or endangered in California but more common elsewhere, and a 2B.2 threat rank indicates the species is fairly threatened in California. Viviparous foxtail cactus occurs in Mojavean desert scrub and pinyon and juniper woodland at elevations between 4,100 and 8,860 feet amsl. Suitable habitat occurs within the study area, and the species was observed during the 2020 fall and 2021 spring surveys. Based on suitable habitat and survey observations, viviparous foxtail cactus is present in the study area.

PARISH'S CLUB-CHOLLA

Parish's club-cholla is a CRPR 2B.2 cactus that blooms between May and June, and occasionally into July. CRPR 2B plants are rare, threatened, or endangered in California but more common elsewhere, and a 2B.2 threat rank indicates the species is fairly threatened in California. Parish's club-cholla occurs in Joshua tree woodland, Mojavean desert scrub, and Sonoran Desert scrub at elevations between 985 and 5,000 feet amsl. Suitable habitat occurs within the study area, and the species was observed during the 2020 fall and 2021 spring surveys. Based on suitable habitat and survey observations, Parish's club-cholla is present in the study area.

THORNY MILKWORT

Thorny milkwort is a CRPR 2B.3 shrub that blooms between May and August. CRPR 2B plants are rare, threatened, or endangered in California but more common elsewhere, and a 2B.3 threat rank indicates the species is not very threatened in California. Thorny milkwort occurs in chenopod scrub, Joshua tree woodland, and pinyon and juniper woodland at elevations between 2,495 and 7,495 feet amsl. Suitable habitat occurs within the study area, and the species was observed during the 2021 spring surveys. Based on suitable habitat and survey observations, thorny milkwort is present in the study area.

RED FOUR O'CLOCK

Red four o'clock is a CRPR 2B.3 perennial herb with a typical blooming period of May through July. CRPR 2B plants are considered rare, threatened, or endangered in California, but are more common outside the state, and a 2B.3 threat rank indicates the species is not very threatened in California. It is generally associated with pinyon-juniper woodland habitats at elevations ranging from approximately 3,510 to 5,905 feet above mean sea level. Suitable habitat for this species occurs along Walking Ranch Box Road within the study area, and the species was observed during the 2025 spring surveys.

CLARK MOUNTAIN BUCKWHEAT

Clark Mountain buckwheat is a CRPR 4.3 perennial buckwheat and a BLM Sensitive species that blooms between May and October. CRPR 4 plants are watch-list plants of limited distribution, and a 4.3 threat rank indicates the species is not very threatened in California. Clark Mountain buckwheat occurs on calcareous (carbonate) gravelly washes and slopes in saltbush and creosote bush communities, and occasionally in juniper woodlands, at elevations between 2,950 and 7,550 feet amsl. Suitable habitat occurs within the study area, and the species was observed during the 2021 spring surveys. Based on suitable habitat and survey observations, Clark Mountain buckwheat is present in the study area.

4.4.1.7 Special Status Wildlife

Based on the results of the literature and database review, 39 species of special status wildlife were found to have occurrences within the nine-quadrangle query search. After this assessment, 21 occur, 13 are considered likely to occur, and five are not likely to occur within the study area, each of which is included in Table 4.4-6 and are discussed in detail below.

Various surveys were conducted for special status wildlife with the potential to occur in the study area. The field surveys were performed according to existing protocols, guidelines, and methodologies, and in coordination with CDFW, USFWS, and BLM. Species and resources survey methods included:

- The Mojave Desert Tortoise Pre-Project Survey Protocol (USFWS 2019)
- Revised Recovery Plan for the Mojave population of the desert tortoise (*Gopherus agassizii*) (USFWS 2011)
- *Recommender Buffer Zones for Ground-based Human Activities around Nesting Sites of Golden Eagles in California and Nevada* (USFWS 2021)
- *Interim Golden Eagle Inventory and Monitoring Protocols*; and other recommendations in support of golden eagle management and permit issuance (USFWS 2010)
- *Updated Eagle Nest Survey Protocol* (USFWS 2020)
- *Bats and Mines: Evaluating Abandoned Mines for Bats: Recommendations for Survey and Closure* (Bat Conservation International and Wildlife Habitat Management Institute 2015)
- *Staff Report on Burrowing Owl Mitigation* (CDFW 2012)

Table 4.4-6. Special Status Wildlife Species with Potential to Occur within the Study Area

Common Name (Species Name)	Special Status*	Range or Habitat Requirements	Presence in the Study Area
Invertebrates			
Monarch butterfly – California overwintering population (*Danaus plexippus* pop. 1)	FC	Found in coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia*, Clarkia, Dendromecon, Eschscholzia,* and *Eriogonum*.	**Moderate potential to occur.** The study area is outside of the known wintering range for this species; thus, focused surveys were not conducted for this monarch population. Although this species has not been documented within the analysis area, the presence of Mojave milkweed within the Project boundary suggests that suitable summer breeding and foraging habitat may be present (ECORP 2021b).
Reptiles			
Banded gila monster (*Heloderma suspectum cinctum*)	BLM_S	Inhabits the lower slopes of rocky canyons and arroyos, but is also found on desert flats among scrub and succulents. Eggs are laid in soil in excavated nests; thus, soil must be sandy or friable.	**Low potential to occur.** Desert scrub may provide some cover/foraging, but habitat features and local suitability appear limited. Species not observed during surveys.
Desert tortoise (*Gopherus agassizii*)	FT, SCE, BLM_S	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Desert horned lizard (*Phrynosoma platyrhinos*)	BLM_S	Occurs in open, sparsely to moderately vegetated desert flats and valleys with sandy to gravelly soils, including alluvial fans, washes, and dunes; commonly associated with creosote-bursage flats and Mojave Desert scrub where loose soils support burrowing/cover and prey availability.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Desert iguana (*Dipsosaurus dorsalis*)	BLM_S	Associated with warm desert scrub and wash habitats, with greatest abundance in sandy creosote flats; also uses desert washes, succulent shrub habitats, and alkaline scrub, and may occur in rocky or hilly areas where suitable cover is present. Not available in CNDDB element descriptions.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Birds			
Bendire's thrasher (*Toxostoma bendirei*)	SSC, BLM_S	Migratory; local spring/summer resident in flat areas of desert succulent shrub/Joshua tree habitats in Mojave Desert. Nests in cholla, yucca, palo verde, thorny shrub, or small tree, usually 0.5 to 20 feet above ground.	**Present.** Desert scrub nesting/foraging species; documented as present.

Common Name (Species Name)	Special Status*	Range or Habitat Requirements	Presence in the Study Area
Black-chinned sparrow (*Spizella atrogularis*)	BLM_S	Arid brushlands on rugged mountain slopes, open chaparral, and sagebrush.	**Low potential to occur.** Habitat is typically chaparral/rocky brushy slopes; not anticipated in the desert scrub study area and not expected. Species not observed during surveys.
Common nighthawk (*Chordeiles minor*)	BLM_S	Mountains and plains in open and semi-open areas, consisting of open coniferous forests, savanna, grasslands, fields, and in the vicinity of cities and towns.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Ferruginous hawk (wintering) (*Buteo regalis*)	BLM_S	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	**High potential to occur** (foraging only). Suitable foraging habitat is present during the wintering season; nesting is not expected within the study area. Species not observed during surveys.
Gray vireo (*Vireo vicinior*)	--	Nests in pinyon pine-juniper, mesquite scrub, oak scrub, and chaparral habitats of the Southwest, from lowlands into foothills and mountains as high as 7,800 feet elevation, including portions of the Mojave, Sonoran, and Chihuahuan Deserts. Their hot, arid habitats usually have dense brush from near the ground to about 6 feet high.	**Low potential to occur.** Marginally suitable habitat
Le Conte's thrasher (*Toxostoma lecontei*)	SSC (active CDFW petition), BLM_S	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	**Low potential to occur.** Suitable desert scrub habitat is present; species may occur at low frequency and detectability may be seasonal. Species not observed during surveys.
Loggerhead shrike (nesting) (*Lanius ludovicianus*)	SSC, BLM_S	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Phainopepla (*Phainopepla nitens*)	BLM_S	Desert scrub, mesquite, juniper and oak woodland, tall brush, riparian woodland and orchards.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Pinyon jay (*Gymnorhinus cyanocephalus*)	BLM_S	Piñon-juniper woodland, and less frequently pine woodland.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys/observations.
Sagebrush sparrow (*Artemisiospiza nevadensis*)	BLM_S	Breeds in shrubsteppe habitats consisting of big sagebrush, saltbush, rabbitbrush, shadscale, and bitterbrush.	**High potential to occur.** Suitable habitat may be present depending on local shrub composition; species may occur seasonally or intermittently. Species not observed during surveys.
Burrowing owl (*Athene cunicularia*)	SC, BLM_S	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**High potential to occur.** Suitable habitat is present; occupancy depends on suitable burrows/colonial ground squirrels and confirmation per CDFW (2012). Suitable burrows were observed during protocol surveys.

Common Name (Species Name)	Special Status*	Range or Habitat Requirements	Presence in the Study Area
Swainson's hawk (*Buteo swainsoni*)	ST, BLM_S	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**High potential to occur.** Suitable habitat is present, and the species has potential to forage on site. Species not observed during surveys.
Golden eagle (*Aquila chrysaetos*)	FP, BGEPA, BLM_S	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**Present.** Suitable foraging habitat is present, and the species was confirmed present during surveys.
Mammals			
Desert bighorn sheep (*Ovis canadensis nelsoni*)	FP, BLM_S	Widely distributed from the White Mtns in Mono Co. to the Chocolate Mts in Imperial Co. Open, rocky, steep areas with available water and herbaceous forage.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Mountain lion (*Puma concolor*)	SC	Occupies a broad range of California habitats (including redwood and mixed forests, coastal brushlands, and mountainous terrain), generally using areas that provide cover and an adequate prey base and occurring over large home ranges.	**High to occur.** Suitable habitat is present, the Project is within the mountain lion range, and supports suitable habitat, including vegetation and topography. Species not observed during surveys.
American badger (*Taxidea taxus*)	SSC, BLM_S	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Desert kit fox (*Vulpes macrotis arsipus*)	CPF	Desert kit fox occurs in a wide range of desert habitats consisting of desert scrub and washes, and may also occur in grasslands or ruderal habitats.	**Present**[3]**.** Suitable habitat is present, and the species was confirmed present during surveys.
California myotis (*Myotis californicus*)	BLM_S	Variety of habitats including desert, chaparral, woodland, and forest. The species forages insects in canyon areas, woodlands, forests, and shrublands.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys (Brown-Berry 2018).
Canyon bat (*Parastrellus hesperus*)	BLM_S	Occurs in deserts, grasslands, and woodlands, and is the most abundant bat species in desert habitats. The species forages insects in canyon/cliff areas and over water. Roosting and maternal colonies occur in rock crevices.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys (Brown-Berry 2018).

[3] Kit fox was detected during Nevada surveys only. Kit fox were not determined present during surveys for the Project in California.

Common Name (Species Name)	Special Status*	Range or Habitat Requirements	Presence in the Study Area
Mexican free-tailed bat (*Tadarida brasiliensis*)	BLM_S.	Occurs in open habitats in grasslands, shrublands, woodlands, and forests. The species forages insects at higher flying elevations (around 100-feet-high) around waterbodies and other occupied habitats. Roosting and maternal colonies occur in caves, mines, buildings, and crevices.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys. Species not observed during surveys.
Hoary bat (*Lasiurus cinereus*)	BLM_S	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**High potential to occur.** Suitable foraging habitat is present; occurrence may be seasonal/transient (Brown-Berry 2018). Species not observed during surveys.
Pallid bat (*Antrozous pallidus*)	SSC, BLM_S	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys (Brown-Berry 2018).
Big brown bat (*Eptesicus fuscus*)	BLM_S	variety of habitats, except for the hottest deserts and highest mountain slopes. The species forages for insects in open habitats. Roosting and material colonies occur primarily in buildings, although some records have indicated that caves, mines, and trees may also be utilized.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	SSC	Variety of arid areas in Southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. Rocky areas with high cliffs.	**Low potential to occur.** Suitable foraging habitat is present; however, the project is outside of the range for this species. Species not observed during surveys.
Townsend's big-eared bat (*Corynorhinus townsendii*)	SSC, BLM_S	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Yuma myotis (*Myotis yumanensis*)	BLM_S	Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Western mastiff bat (*Eumops perotis californicus*)	SSC, BLM_S	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	**High potential to occur.** Suitable foraging habitat is present; roosting potential depends on availability of appropriate roost features within the study area. Species not observed during surveys.
Western yellow bat (*Lasiurus xanthinus*)	SSC	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	**Low potential to occur.** Suitable foraging habitat is present; however, the project is outside of the range for this species. Species not observed during surveys.

Common Name (Species Name)	Special Status*	Range or Habitat Requirements	Presence in the Study Area
Spotted bat (*Euderma maculatum*)	SSC, BLM_S	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water and along washes. Feeds almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.	**High potential to occur.** Suitable foraging habitat is present; roosting potential depends on availability of appropriate roost features within the study area. Species not observed during surveys.
California leaf-nosed bat (*Macrotus californicus*)	SSC, BLM_S	Desert riparian, desert wash, desert scrub, desert succulent scrub, alkali scrub and palm oasis habitats. Needs rocky, rugged terrain with mines or caves for roosting.	**High potential to occur.** Suitable foraging habitat is present; roosting potential depends on availability of appropriate roost features within the study area. Species not observed during surveys.
Fringed myotis (*Myotis thysanodes*)	BLM_S	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer. Uses caves, mines, buildings or crevices for maternity colonies and roosts.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Small-footed myotis (*Myotis ciliolabrum*)	BLM_S	Wide range of habitats mostly arid wooded and brushy uplands near water. Seeks cover in caves, buildings, mines, and crevices. Prefers open stands in forests and woodlands. Requires drinking water. Feeds on a wide variety of small flying insects.	**Present.** Suitable habitat is present, and the species was confirmed present during surveys.
Long-legged myotis (*Myotis volans*)	BLM_S	Most common in woodland and forest habitats above 4000 ft. Trees are important day roosts; caves and mines are night roosts. Nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.	**High potential to occur.** Suitable foraging habitat is present; roosting potential depends on availability of appropriate roost features within the study area. Species not observed during surveys.
Big free-tailed bat (*Nyctinomops macrotis*)	SSC, BLM_S	Low-lying arid areas in Southern California. Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	**High potential to occur.** Suitable foraging habitat is present; roosting potential depends on availability of appropriate roost features within the study area. Species not observed during surveys.

Sources: Habitat and range descriptions were taken directly from the CNDDB (CDFW 2026a), Audubon Guide to North American Birds (Audubon 2026d), and California Herps (California Herps 2026)

*Status Codes:

Federal Status: FE = Federally Listed Endangered; FT = Federally Listed Threatened; BGEPA = Bald and Golden Eagle Protection Act; BLM_S = Bureau of Land Management: Sensitive

California State Status: ST = California State-Listed Threatened; SC = California Candidate Species; FP = CDFW Fully Protected; SSC = CDFW Species of Special Concern; CPF = California Protected Furbearer; “active CDFW petition” = pending FGC evaluation/recommendation for listing as a candidate under CESA

REPTILES

Mojave Desert Tortoise

The desert tortoise (*Gopherus agassizii*) is a federally and state threatened species, as well as a CESA candidate for endangered. USFW-designated critical habitat for desert tortoise intersects the northern portion of the analysis area, along the ROW for the proposed utilities.

Qualified Bio Logical, LLC, biologists performed desert tortoise presence/absence surveys between October 19 and October 31, 2020. The surveys were performed in accordance with the USFWS' *Mojave Desert Tortoise Pre-Project Survey Protocol* and *Revised Recovery Plan for the Mojave population of the desert tortoise* (USFWS 2019, 2011). The purpose of the surveys was to determine the presence, abundance and distribution of desert tortoises on the approximately 1,959 acre study area. The study area includes previously explored and partially disturbed areas to the north and east of the existing Mine Area, undisturbed potential habitat to the south and west of the existing Mine Area, and the remaining approved mine boundary areas that have not yet been developed or fenced. During the surveys, three areas of special concern were encountered and thus excluded from the surveys. These exclusion areas include: less than 0.5 acres of impassable vegetation, previously surveyed areas in the southwest portion of the study area, and a 147-acre area of avoidance in the north and northeast portion of the study area.

A team of three biologists and additional authorized biologists walked transects spaced approximately 10m apart throughout the entire study area. Live desert tortoise and sign, including carcasses, scat, and burrows were recorded using handheld GPS units. Surveys were performed during the fall, but were not conducted on October 26 and 27, 2020 as a result of cold daytime temperatures and projected overnight low temperatures between 30 and 40°F. Each potential desert tortoise burrow was assigned one of five condition classes. The condition classifications are as follows:

- **Class 1:** Active with Desert Tortoise or sign
- **Class 2:** Recently active with Desert Tortoise, no current sign
- **Class 3:** Deteriorated or collapsed, definitely tortoise
- **Class 4:** Good condition, possibly tortoise
- **Class 5:** Deteriorated condition, possibly tortoise

Consistent with the 2019 USFWS survey protocol, desert tortoise is considered present within the study area based on observations of tortoise sign including scat, as well as detections of live tortoises, carcasses, and Class 1–5 burrows (Appendix C). Additional tortoise indicators such as pallets, tracks, drinking depressions, courtship rings, and signs of ephemeral plant herbivory were not documented during surveys. Based on the survey results, tortoise use appears concentrated in the eastern portion of the study area. Detailed methods, results, and species observations are provided in the *Castle Mountain Mine Presence/Absence Survey and Density Estimate* (Bio Logical 2020).

Desert Horned Lizard

The desert horned lizard (*Phrynosoma platyrhinos*) is a BLM special-status species associated with open, sparsely to moderately vegetated desert flats and valleys with sandy to gravelly soils. Suitable habitat for this species includes alluvial fans, washes, dunes, creosote-bursage flats, and Mojave Desert scrub, where loose soils provide opportunities for burrowing, cover, and foraging. Suitable habitat is present within the study area, and the species was confirmed during surveys.

Desert Iguana

The desert iguana (*Dipsosaurus dorsalis*) is a BLM special-status species associated with warm desert scrub and wash habitats and is most commonly found in sandy creosote flats. It may also occur in desert washes, succulent shrub habitats, alkaline scrub, and rocky or hilly areas where suitable cover is available. Suitable habitat is present within the study area, and the species was confirmed during surveys.

AVIAN USE

Special status avian species with potential to occur on-site, as determined through observations during biological surveys, the presence of suitable habitat, and a review of CNDDB, include Bendire's thrasher (*Toxostroma bendirei*), Le Conte's thrasher (*Toxostoma lecontei*), loggerhead shrike (nesting) (*Lanius ludovicianus*), black-chinned sparrow (*Spizella atrogularis*), common nighthawk (*Chordeiles minor*), phainopepla (*Phainopepla nitens*), pinyon jay (*Gymnorhinus cyanocephalus*), and sagebrush sparrow (*Artemisiospiza nevadensis*). These species have variable Federal and state statuses, which are provided in Table 4.4-6.

General biological and reconnaissance surveys for avian species were conducted for the Ivanpah Underground Waterline and 69kV Overhead Powerline Rights-Of-way (ROW) Project by Glenn Lukos Associates, Inc. (GLA 2024a). The study area for these surveys included 30 linear miles of approximately (403.9 acres) of the Ivanpah ROW (Ivanpah ROW study area). GLA biologists conducted surveys for avian species within each habitat type throughout the Ivanpah ROW study area. Avian species were evaluated and detected by direct observation and vocalizations. Descriptions of the special status avian species observed, detected, or with potential to occur within the study area are included below. Detailed methods, results, and species observations are provided in the *Report of Biological Surveys for the Ivanpah Underground Waterline and 69kV Overhead Powerline Rights-Of-Way Project, Located in Unincorporated San Bernardino County, California and Unincorporated Clark County, Nevada* (GLA 2024a).

Bendire's Thrasher

Bendire's thrasher is federally designated as a Bird of Conservation Concern, California state designated as a Species of Special Concern, and designated as a Special Status Species by the BLM. Bendire's thrasher is currently being considered as a Candidate under CESA following the submission of a petition on September 23, 2025. Bendire's thrasher was observed during the general surveys east of Walking Box Ranch Road (GLA 2024a). The species also has known occurrences in Nipton (eBird 2025). The breeding range of Bendire's thrasher includes Southeastern California, southern Nevada, southern Utah, southern Colorado, and western and central New Mexico south to central Sonora. Non-breeding Bendire's thrashers also inhabit southern Arizona, extreme southwestern New Mexico south through Sonora to northern Sinaloa, California deserts, and the Central Valley. Typical habitat for this species includes desert habitats with fairly large shrubs or cacti and open ground, or open woodland habitats with scattered shrubs and trees, with elevations between 0 and 550 m.

Bendire's thrasher does not typically inhabit dense vegetation, such as riparian woodland, but it may be found along the edges. They also do not inhabit uninterrupted brushy cover and continuous grassland. They are found in sagebrush (*Artemisia* sp.) and scattered junipers (*Juniperus* sp.) in the northern range and at higher elevations. They are found in desert grassland and shrubland with spiny shrubs or cacti, such as cholla (*Opuntia* sp.), Joshua tree (*Yucca brevifolia/jaegeriana*), Spanish bayonet (*Y. schidigera*), palo verde (*Cercideum* sp.), mesquite (*Prosopis* sp.), desert-thorn (*Lycium* sp.) or agave species at lower elevations. Bendire's thrasher was observed within the Ivanpah ROW study area (GLA 2024a), and the study area supports suitable foraging and nesting habitat; therefore, Bendire's thrasher is considered present within the study area.

Black-Chinned Sparrow

Black-chinned sparrow is designated as a Special Status Species by the BLM. Black-chinned sparrow was not observed during the general surveys (GLA 2024a). The breeding range of this species includes Baja California, Arizona, New Mexico, and small portions of southern Nevada and southwestern Utah (USFWS 2026b). Typical habitat for black-chinned sparrow includes arid brushlands on rugged mountain slopes, open chaparral, and sagebrush (Audubon 2026a). The study area supports desert scrub habitat, and rocky terrain at the reclaimed mine site, and there is steep terrain east and northeast of the mine site. Black-chinned sparrows are often found in open thickets of manzanita, scrub oak, sagebrush, chamise, and other low shrubs, as well as mesquite thickets in the winter. This species forages on the ground or in low shrubs. They nest close to the ground in low shrubs, such as sagebrush. Black-chinned sparrow is not anticipated to nest or forage in the study area and it was not observed within the Ivanpah ROW study area (GLA 2024a); therefore, they have low potential to occur within the study area.

Common Nighthawk

The common nighthawk is designated as a Special Status Species by the BLM. This species was observed at several locations during the general surveys (GLA 2024a). The breeding range of this species includes central Canada southward to Nova Scotia and through most of United States, and winters in the tropics. Typical habitat includes mountains and plains in open and semi-open areas, consisting of open coniferous forests, savanna, grasslands, fields, and in the vicinity of cities and towns. The study area supports open areas and grassland habitat in a small portion of the lower elevations. Common nighthawk commonly nest on the ground in open areas, and prefer areas with sandy soils. The common nighthawk forages at night or during the day by catching insects high in the air or close to the ground. The common nighthawk was observed within the Ivanpah ROW study area and the study area supports suitable foraging and nesting habitat (GLA 2024a); therefore, the common nighthawk is considered present within the study area.

Le Conte's Thrasher

Le Conte’s thrasher is federally designated as a Bird of Conservation Concern, California state designated Species of Special Concern, and designated as a Special Status Species by the BLM. Le Conte’s thrasher is currently being considered as a Candidate under CESA following the submission of a petition on September 23, 2025. This species was not observed during the general surveys (GLA 2024a). The Le Conte’s thrasher range includes southern California deserts from southern Mono County south to the Mexican border and western and southern San Joaquin Valley (CDFW 2005). Typical habitat includes open desert wash, desert scrub, alkali desert scrub, desert succulent shrub, and Joshua tree habitat with scattered shrubs. The study area supports desert scrub and Joshua tree habitat. They commonly nest in dense, spiny shrubs or densely branched cacti in desert wash habitat. Le Conte’s thrasher forages on the ground by probing and digging in the soil and litter with their bill. The nearest CNDDB record is approximately 23 miles southwest of the Project Area. Although Le Conte’s thrasher was not observed within the Ivanpah ROW study area, the study area supports suitable foraging and nesting habitat (GLA 2024a); therefore, Le Conte’s thrasher is likely to occur within the study area.

Loggerhead Shrike

The loggerhead shrike is federally designated as a Bird of Conservation Concern, California state designated as a Species of Special Concern, and designated as a Special Status Species by the BLM. The loggerhead shrike range occurs from southern Canada through the Great Basin and California, to Baja California, Mexico and the Gulf coast. In western North America, the species breeds from southeastern Alberta, western Montana, northwest Wyoming, southern Idaho, southcentral Washington, eastern Oregon, and California south to southern Baja California. Typical habitat includes desert and arid habitats, fields, meadows, grasslands, forests and woodlands, shrublands, savannas, thickets, and urban

and suburban habitats (Audubon 2026b). The study area supports desert habitat, and grassland habitat in a small portion of the lower elevations. They commonly nest in dense and thorny trees or shrubs above the ground. The loggerhead shrike forages over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs. The loggerhead shrike, including nests and family groups, was observed at several locations within the Ivanpah ROW study area and the study area supports suitable nesting habitat (GLA 2024a); therefore, the loggerhead shrike is considered present within the study area.

Phainopepla

The phainopepla is designated as a Special Status Species by the BLM. Within its northern range, this species migrates south during the winter. In California, some bird species that breed in the desert from March-April migrate in April-May to wetter coastal areas and breed again from late May-July. Phainopepla often reside in the Sonoran Desert during October-April, then migrate to semiarid habitats to the north, east, and west of the Sonoran Desert in late spring through fall. Typical habitat includes desert scrub, mesquite, juniper and oak woodland, tall brush, riparian woodland and orchards. The study area supports desert scrub and juniper woodland habitats. The phainopepla commonly nests in the center of mistletoe or in the fork of branches and nest heights vary between low above the ground in desert mesquites or higher up in streamside oaks or sycamores (Audubon 2026c). They forage mainly on berries, specifically mistletoe, in desert habitats. The phainopepla was detected and observed at several locations within the Ivanpah ROW study area in Nevada and the study area supports suitable foraging and nesting habitat (GLA 2024a); therefore, the phainopepla is considered present within the study area.

Pinyon jay

Pinyon jay is designated as a Special Status Species by the BLM. The pinyon jay is endemic to western North America where it resides year-round. The pinyon jay range extends from the U.S. in Oregon, east to southern Montana, south to within 250 km of the U.S.-Mexico border in New Mexico and Arizona, west to eastern California, and only reaching into Mexico in Baja California Norte. Typical habitat includes piñon-juniper woodland, and less frequently pine woodland. During the non-breeding season, they also occur in scrub oak and sagebrush. The study area supports juniper woodland habitat. The pinyon jay nests in shrubs or trees, such as pine, oak, or juniper, at least 1.5 m above the ground. They forage on pinyon-pine seeds, acorns, juniper berries, other wild berries, cultivated grains, and occasionally insects, lizards, snakes, nestling birds, and small mammals on the ground (Cornell 2026a). Pinyon jay was observed within the Ivanpah ROW study area in California and the study area supports suitable foraging and nesting habitat (GLA 2024a); therefore, the pinyon jay is considered present within the study area.

Sagebrush sparrow

Sagebrush sparrow is designated as a Special Status Species by the BLM. This species was not observed during the general surveys (GLA 2024). Sagebrush sparrow range extends from the southwestern U.S. to northwestern Mexico. They typically breed in shrubsteppe habitats consisting of big sagebrush, saltbush, rabbitbrush, shadscale, and bitterbrush. They nest in mixed sagebrush-juniper habitat that borders open sagebrush steppe. The study area supports juniper habitat. Sagebrush sparrow forages on insects, seeds, small fruits, and succulent vegetation under dense shrubs. Although sagebrush sparrow was not observed within the Ivanpah ROW study area, there is suitable habitat present within the study area (GLA 2024a); therefore, sagebrush sparrow is likely to occur within the study area.

RAPTORS

California state-protected raptor species with potential to occur on-site include Swainson's hawk (*Buteo swainsoni*), golden eagle (*Aquila chrysaetos*), and burrowing owl (*Athene cunicularia*).

No site-specific raptor surveys have been conducted for the current project. Available information on raptor use in the surrounding area is based on historical aerial nesting surveys and regional telemetry data. During a 2018 aerial survey within a 10-mile radius of the mine, BRC documented active nests of prairie falcon (*Falco mexicanus*) and red-tailed hawk (*Buteo jamaicensis*), as well as observations of adult golden eagles, indicating that surrounding mountain slopes and rock features support nesting by multiple raptor species (BRC 2018). In addition, telemetry data collected between 2021 and 2023 indicate continued use of the broader project vicinity by large raptors, supporting the conclusion that the surrounding landscape functions as both nesting and foraging habitat, even though no current project-specific raptor observation surveys have been conducted (BRC 2023).

Burrowing Owl

Burrowing owl is currently a candidate for listing under CESA and therefore warrants the same protection as state-listed species. GLA biologists conducted site-specific, protocol-level burrowing owl surveys in all suitable habitat within the Ivanpah ROW study area (GLA 2024a). Suitable burrows were documented; however, no burrowing owls or evidence of burrowing owl occupancy were observed during the surveys. The Project Area contains open, sparsely vegetated habitats with soils suitable for ground-dwelling mammals, which may support burrows that could be used by burrowing owls. Burrowing owls are known to occupy modified and natural open landscapes in desert and agricultural regions, particularly where ground squirrel or other small mammal burrow systems are present. Although nesting habitat is typically associated with active burrow complexes rather than vegetation structure, suitable conditions occur within or adjacent to the Project Area. Based on habitat characteristics and the regional distribution of the species, burrowing owls are likely to occur within the Project Area for nesting or foraging.

Swainson’s Hawk

Swainson’s hawk is a CDFW threatened species, and a BLM sensitive species. No site-specific Swainson’s hawk surveys have been conducted for the current project, and they have not been observed incidentally. This species typically breeds in western North America, and migrates south to Argentina for the winter (Cornell 2026b). Swainson’s hawk primarily breeds in California in the Central Valley and the Great Basin, but there are also known territories in the Mojave Desert (CDFW 2026a).

Swainson’s hawks' nest in trees near agricultural fields and grasslands, which are not present in the study area (Cornell 2026b). Swainson’s hawks require open habitats, such as grasslands and hayfields for foraging. A small portion of the study area’s lower elevations provide suitable foraging habitat and may support a suitable prey base. Their diet is mostly comprised of insects and mammals, such as grasshoppers, crickets, dragonflies, ground squirrels, gophers, mice, voles, and rabbits, but their diets can vary regionally. They also prey on bats, snakes, lizards, and birds. The study area supports small mammal species, bats, snakes, lizards, and birds. Although Swainson’s hawk is generally considered to be extirpated in Southern California according to CNDDB, the Project Area provides moderate potential for foraging and low potential for nesting; therefore, Swainson’s hawk is likely to occur within the Project Area.

Golden Eagle

The golden eagle is a CDFW fully protected species, is protected pursuant to the federal BGEPA, and is considered sensitive by the BLM. This species has a global range that includes much of North America,

Eurasia, and parts of northern Africa. The golden eagle is an uncommon but widespread resident in California and is known to nest in the Mojave Desert. Territories regularly span 5 to 10 miles depending on the availability of prey, nest sites, and wind resources. Breeding adults in desert settings may range up to 10 miles from the nest while foraging. Golden eagles nest on cliffs, rock outcrops, or in large trees, none of which are present in the study area. Foraging golden eagles require large amounts of open space for hunting, such as grasslands, deserts, and savannahs. The entire study area provides suitable foraging habitat and may support a suitable prey base. Mid-sized mammals such as rabbits and marmots are preferred, but prey may be as small as California ground squirrels (*Otospermophilus beecheyi*) or as large as deer (rarely), and golden eagles will consume carrion when it is available. The study area supports various mid-sized mammalian prey species, including black-tailed jackrabbit, desert cottontail (*Sylvilagus audubonii*), chukar (*Alectoris chukar*), and Gambel's quail (*Callipepla gambelii*) (Crescent Peak Renewables 2018).

No site-specific golden eagle surveys have been conducted for the current project; however, available regional data indicate that the surrounding landscape supports both nesting and foraging by golden eagles. Aerial nesting surveys conducted by BRC in 2018 within a 10-mile radius of the mine documented adult eagles and historical nest sites, as well as one active nest just beyond the survey boundary, indicating that breeding individuals occur in the region in some years (BRC 2018). Telemetry studies conducted by BRC between 2021 and 2023 further demonstrate repeated use of the broader project vicinity by adult golden eagles, including individuals likely associated with breeding territories, and regular use of surrounding open habitats for foraging (BRC 2023). Although nesting habitat is not present within the project footprint, suitable nesting habitat occurs in adjacent mountainous terrain. The Project Area provides high potential for foraging and no potential for nesting; therefore, golden eagle is considered present within the Project Area.

MAMMALS

Desert Bighorn Sheep

The *Bighorn Sheep Use of Mine Sites* was prepared to explore the historical and potential future impacts of mining at Castle Mountain Mine on bighorn sheep (*Ovis canadensis nelsoni*) and to integrate bighorn sheep habitat enhancement into mine closure and reclamation plans (WestLand 2022a). This literature search was revised in 2024 in accordance with Section 508 Compliance (WestLand 2024).

The 2024 literature review is based on annual health assessments, collaring, and species tracking of bighorn sheep conducted by CDFW and researchers associated with Oregon State University for the Project Area. The most recent survey, a bighorn sheep habitat assessment sUAS survey conducted by ECORP for the proposed Project was performed over a 1,400-acre area located in the northeast portion of the proposed mine expansion area. The sUAS survey was conducted from October 19 through 21, 2020 during the rutting season, but no rutting behavior was observed during the surveys. During the survey, six discrete locations within the study area were detected to be occupied by desert bighorn sheep (ECORP 2021a). Small groups of males were primarily observed, but one group contained males, females, and juveniles. As a result of the survey, the entirety of the study area was determined to provide suitable habitat for bighorn sheep, including breeding, foraging, and escape activities.

Bighorn sheep is considered present in the study area and populations within the Project Area continue to grow as a result of stable water supply, suitable escape habitat provided by pit highwalls, and decreased mountain lion (*Puma concolor*) predation due to human presence and activity (WestLand 2024). Detailed methods, results, and species observations are provided in the *Focused Fall Rare Plant and Desert Bighorn Sheep Survey and Habitat Assessment Report* (ECORP 2021a).

Mountain Lion

The mountain lion is a CDFW specially protected mammal, as it is designated as a candidate species under CESA within a proposed evolutionary significant unit (ESU) located in Southern California and the California Central Coast (WestLand 2022b). The Project Area occurs within the Southern California/Central Coast ESU. Mountain lions have an extensive range, spanning from the Canadian Yukon to the Strait of Magellan in Chile (NWF 2025). They can be found in a variety of habitats, such as mountains, forests, deserts, and wetlands. The Project Area supports suitable habitat and vegetation communities, including blackbrush scrub at higher elevations and Joshua tree woodlands and creosote bush scrub at lower elevations.

Mountain lions have not been included in analyses for prior mining activities within the Project Area, so no surveys have been conducted. However, the Project Area overlaps with the ESU area for mountain lions, is within the mountain lion range, and supports suitable habitat, including vegetation and topography (Westland 2022b). Surveys for mountain lions within the Project Area are ongoing, but CMV has installed six game cams and two wildlife drinkers to assess the presence of mountain lions within the Project Area. Although no direct observations or detections of mountain lions have been made, they are likely to occur within the Project Area.

Desert Kit Fox

Desert kit fox (*Vulpes macrotis arsipus*) is classified as a protected furbearing mammal under Fish and Game Code Section 4000 and may not be taken at any time pursuant to California FGC Sections 460 and 4000-4003. Much of the Mojave Desert provides habitat for this species, although its population status and trends are uncertain. Desert kit fox can be found in a wide range of habitat types, including desert scrub, washes, and arid grasslands. In the western Mojave Desert, desert kit fox dens are frequently located on west- and northwest-facing slopes on friable soils with an absence of stones, caliche, or hardpan. Kit foxes use multiple dens and switch dens frequently throughout the year. Breeding typically occurs in December and January, and pups usually leave the natal den by May. This species primarily exhibits carnivorous behavior, with its diet primarily consisting of black-tailed jackrabbit (*Lepus californicus*) and desert cottontail (*Sylvilagus audubonii*), kangaroo rat (*Dipodomys* spp.), and ground squirrel (*Otospermophilus* spp.) (Sheldon 1992). Additionally, the species consumes insects, reptiles, some birds, bird eggs, and vegetation (Egoscue 1962; Laughrin 1970; Morrell 1971; Orloff et al. 1986). Potential threats to this species include habitat loss and fragmentation, disease, predation, and vehicle collisions (Kadaba 2014).

CNDDB does not maintain records for this species, so no historic location records are available for reference, although it is regularly encountered in Mojave Desert habitats. The majority of the study area is suitable habitat for desert kit fox, as it is consistent with the open desert, shrubby, or shrub-grass habitat that desert kit fox typically occurs in. Desert kit fox burrows and sign were detected at two locations within the study area in Nevada along Highway 164 and at the intersection of Highway 164 and Walking Box Ranch Road during surveys and are considered present on site (GLA 2024a).

American Badger

American badger (*Taxidea taxus*) is a CDFW Species of Special Concern and is listed as sensitive by the BLM. This species is generally found in open areas, including open woodlands, desert scrub, and grasslands. This burrowing mammal uses friable soil to construct burrows for cover and protection. While they often reuse existing burrows, some individuals may create new dens nightly, particularly during the summer months (Messick and Hornocker 1981). Badger dens are distinctive due to their size and the presence of claw marks on the sides created when the den was dug. As obligate carnivores, American badgers primarily rely on a diet composed of fossorial (burrowing) rodents, including rats, mice, chipmunks, ground squirrels, and pocket gophers. Additionally, they consume reptiles, insects, earthworms, bird eggs, small birds, and carrion. The composition of their diet experiences seasonal and yearly variations, influenced by the availability and abundance of prey in their habitat. Recent trends for this species indicate a significant reduction in both range and abundance, particularly in areas where it was once common (Williams 1986).

The study area is considered suitable habitat for this species, which is widespread throughout North America. American badger was detected during surveys and is considered present on site (GLA 2024a).

Bats

Special status bat species with the potential to occur on-site include pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), California myotis (*Myotis californicus*), Yuma myotis (*Myotis yumanensis*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), western small-footed myotis (*Myotis ciliolabrum*), canyon bat (*Parastrellus hesperus*), hoary bat (*Lasiurus cinereus*), Mexican free-tailed bat (*Tadarida brasiliensis*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), big free-tailed bat (*Nyctinomops macrotis*), western mastiff bat (*Eumops perotis californicus*), spotted bat (*Euderma maculatum*), big brown bat (*Eptesicus fuscus*), and California leaf-nosed bat (*Macrotus californicus*) (BRC 2018; Brown-Berry 2018; GLA 2022). The federal and State statuses of these species are included in Table 4.4-6.

Bat surveys have been conducted within the study area since the late 1980s. BRC conducted a bat habitat assessment at historic mining operations surrounding the study area in accordance with *Bats and Mines: Evaluating Abandoned Mines for Bats: Recommendations for survey and closure* guidance provided by Bat Conservation International and Wildlife Habitat Management Institute (BRC 2018). A qualified bat biologist from BRC performed a daytime habitat assessment on February 16 and 17, 2018. The primary objective was to identify structures or environmental features within and immediately beyond the study area that could serve as suitable roosting, foraging, or commuting habitat for bats. In addition, the survey aimed to identify suitable locations for conducting further surveys, focusing on areas that would account for all representative habitat types within the study area. Attention was focused on rock crevices, tree cavities, and human-made structures, where the biologist searched for specific signs indicating the presence of bats such as guano, insect carapaces, urine staining, or deceased specimens to determine the status of potential roost locations. Two potential roosting sites were observed during the daytime habitat assessment.

Brown-Berry Biological Consulting conducted mine surveys in 2018 for bats at historic abandoned mine features within the study area and mine features of the Green and Gold Mine, located approximately 0.35 mile southeast of the study area. A team of four biologists conducted daytime and nighttime bat surveys from June 25 through 28, 2018. The primary objective was to conduct internal surveys of the mine features of interest for bats, guano, and other signs of wildlife. In addition, nighttime acoustic surveys were conducted to document bat activity and determine the species present. Attention was focused on recording internal temperatures, collecting guano, assessing airflow, counting exiting and entering bats, and recording bat calls. The nighttime acoustic surveys took place at the entrances to 15 mine features,

and detectors recorded seven different bat species (California myotis, western small-footed myotis, canyon bat, Mexican free-tailed bat, pallid bat, big brown bat, and Townsend's big eared bat). Bat calls were recorded using acoustic monitoring equipment including Titley Electronics Express and Anabat SD2 ultrasound detectors outside of the majority of mine portals and a Titley Swift detector recording in full spectrum mode in a wildlife guzzler southeast of the mine buildings. Calls were analyzed to species level. No bats were observed in the mines during the daytime internal surveys. Between seven and nine species of bats were detected during acoustic surveys: yuma myotis, fringed myotis, California myotis, small-footed myotis, Canyon bat/Western pipistrelle, big brown bat, Townsend's big-eared bat, pallid bat, and Mexican free-tailed bat. It cannot be concluded whether all of the bat species detected during the nighttime acoustic surveys were roosting in the mines because acoustic signals may have recorded bats exiting or entering a mine or flying in the surrounding area.

Brown-Berry Biological Consulting conducted additional daytime winter sheltering surveys of the mine on January 31 and February 1, 2019. The primary objective was to conduct internal surveys of the nine mine features for bats, guano, and other signs of wildlife. Attention was focused on recording internal temperatures, collecting guano, and assessing airflow. Three individual Townsend's big eared bats were observed in two different mine features during the daytime internal surveys.

GLA (2024a) performed biological surveys within the ROW study area established for the underground water pipeline and overhead powerline ROWs which was approximately 30-miles-long and located within both the California and Nevada portions of the study area. Bat species were evaluated through a habitat assessment and a site-specific survey performed on December 19, 2023 where observations or signs of species were recorded. The results included the observation of canyon bats foraging at dusk at the south end of Walking Box ranch road.

The special status bat species that have been observed around the study area during surveys are described below using information from Zeiner et al. (1990). The federal and State statuses of these species are included in Table 4.4-6.

California Myotis

The California myotis occurs in a variety of habitats including desert, chaparral, woodland, and forest. The species forages for insects in canyon areas, woodlands, forests, and shrublands. Roosting and maternal colonies occur in the crevices of buildings, vegetation, caves, and mines, and maternal colonies will form in similar areas. Suitable habitat is present in the study area, and California myotis was confirmed present during surveys (Brown-Berry 2018).

Western Small-Footed Myotis

The western small-footed myotis occurs in arid upland habitats in areas near water sources. The species forages for insects around trees and waterbodies. Roosting and maternal colonies occur in crevices, buildings, caves, and mines. Suitable habitat is present in the study area, and Western small-footed myotis was confirmed present during surveys (Brown-Berry 2018).

Canyon Bat

The canyon bat occurs in deserts, grasslands, and woodlands, and is the most abundant bat species in desert habitats. The species forages for insects in canyon/cliff areas and over water. Roosting and maternal colonies occur in rock crevices. Suitable habitat is present in the study area, and canyon was confirmed present during surveys (Brown-Berry 2018).

Mexican Free-Tailed Bat

The Mexican free-tailed bat occurs in open habitats in grasslands, shrublands, woodlands, and forests. The species forages for insects at higher flying elevations (around 100-feet-high) around waterbodies and other occupied habitats. Roosting and maternal colonies occur in caves, mines, buildings, and crevices. Suitable habitat is present in the study area, and Mexican free-tailed bat was confirmed present during surveys (Brown-Berry 2018).

Pallid Bat

The pallid bat occurs in open habitats in grasslands, shrublands, woodlands, and forests. The species forages for insects in open habitats. Roosting and maternal colonies occur in crevices, mines, trees, and buildings. Suitable habitat is present in the study area, and pallid was confirmed present during surveys (Brown-Berry 2018).

Big Brown Bat

The big brown bat occurs in a variety of habitats, except for the hottest deserts and highest mountain slopes. The species forages for insects in open habitats. Roosting and maternal colonies occur primarily in buildings, although some records have indicated that caves, mines, and trees may also be utilized. Suitable habitat is present in the study area, and big brown bat was confirmed present during surveys (Brown-Berry 2018).

Townsend's Big-Eared Bat

The Townsend’s big-eared bat occurs in a variety of mesic habitats, except for alpine areas. The species forages for insects along habitat edges. Roosting and maternal colonies occur in caves, mines, tunnels, and buildings. Suitable habitat is present in the study area, and Townsend’s big-eared bat was confirmed present during surveys (Brown-Berry 2018).

Yuma Myotis

Yuma myotis is a BLM Sensitive bat species most closely associated with open forests and woodlands that provide nearby water sources for foraging and drinking. Its distribution is strongly tied to waterbodies, where it typically feeds over open water or along riparian corridors. Maternal colonies and day roosts may occur in caves, mines, buildings, or rock crevices. Suitable habitat is present in the study area, and Yuma myotis was confirmed present during surveys (Brown-Berry 2018).

Fringed Myotis

Fringed myotis is a BLM Sensitive bat species that occurs across a wide variety of habitats, with optimal conditions in pinyon-juniper woodland, valley foothill hardwood, and hardwood-conifer communities. The species forms maternity colonies and roosts in caves, mines, buildings, and rock crevices, using available natural or anthropogenic structures where present. Suitable habitat is present in the study area, and fringed myotis was confirmed present during surveys (Brown-Berry 2018).

Small-Footed Myotis

Small-footed myotis is a BLM Sensitive bat species that occupies a broad range of habitats, most often arid, wooded, and brushy uplands in proximity to water. The species uses caves, buildings, mines, and rock crevices for cover and roosting, and typically favors open stands within forests and woodlands. Access to drinking water is an important habitat component, and the species forages on a wide variety of

small flying insects. Suitable habitat is present in the study area, and small-footed myotis was confirmed present during surveys (Brown-Berry 2018).

4.4.1.8 Surface Water Features

In May 2025, CMV obtained an Approved Jurisdictional Determination (AJD) based on the 2022 aquatic resources delineation for the mine site confirming that Waters of the United States (WOTUS) do not occur in the evaluated area and that U.S. Army Corps of Engineers (USACE) regulations and permitting would not apply to this portion of the project (GLA 2022; USACE 2025). A second aquatic resources delineation for the utility corridors was completed in December 2023, April 2024, and August 2025 (GLA 2025), and an AJD request is being reviewed by the USACE to determine if interstate waters are resent and regulated as of December 2025. Under the Conforming Rule currently in effect, interstate water resources may be regulated by the USACE and require permitting; however, under the USACE/EPA proposed new rule for WOTUS anticipated to take effect in or after March 2026, "interstate waters" may be removed as a standalone category for determining a WOTUS, Because the resources mapped by GLA (2022, 2025) are not relatively permanent, the project will likely not support WOTUS, however permitting process with the USACE and regulatory rules at the time of permit review (if deemed necessary), as well as their AJD review (currently under review) will further determine if interstate waters are present.

Aquatic resources mapped within the review area are categorized as non-wetland waters. Potential wetlands are not present, and areas mapped were absent the three parameter wetland indicators: hydric soils, hydrophytic vegetation, and/or hydrology. Potential federal jurisdiction was assessed pursuant to the current WOTUS Conforming Rule, which took effect September 8, 2023 (USACE and U.S. Environmental Protection Agency 2023) and is currently in effect in the State of California. Aquatic features on-site were also evaluated to determine if they were potential waters of the State subject to the California State Water Resources Control Board (SWRCB) and its Regional Board's (RWQCB) jurisdiction and/or CDFW Section 1602 jurisdiction.

In total, 24.94 acres of potentially regulated aquatic resources were mapped within the Project Area in California (GLA 2022, 2025) (Table 4.4-7). This includes 19.81 acres (168,006) linear feet) of ephemeral surface water features and approximately 5.13 acres of CDFW-associated riparian habitat. Potential RWQCB-regulated resources consist of 19.81 acres (168,006 linear feet) of which 18.54 acres (124,892 linear feet) are within the mine site and 1.27 acres (8,555 linear feet) are within the utility ROW. CDFW-regulated resources include RWQCB-regulated resources. Additionally, potential CDFW-jurisdictional resources include 4.25 acres of associated riparian habitat within the mine site and 0.88 acre within the utility ROW. Total potentially regulated CDFW resources consist of 24.94 acres (168,006 linear feet).

Table 4.4-7. Potentially Regulated Aquatic Resources

	CDFW Jurisdiction		RWQCB Jurisdiction	
Aquatic Resource Type	**Acres**	**Linear Feet**	**Acres**	**Linear Feet**
Ephemeral Drainage	19.81	168,006	19.81	168,006
Associated Riparian Habitat	5.13*	--	0	--
Total	**24.94**	**168,006**	**19.81**	**168,006**

* Riparian habitat linear foot acreage accounted for in associated ephemeral drainage

4.4.1.9 Wildlife Movement and Migratory Corridors

Wildlife movement corridors are defined on both a regional and local basis. Regionally, the study area lies between the Castle Mountains/Piute Range and the New York Mountains northeast of Lanfair Valley and into the Ivanpah Valley to the northwest within the Mojave Desert. The Wildlands Conservancy and BLM drafted *A Linkage Network for the California Deserts* to present an analysis of potential threats and impacts to wildlife mobility from development on public lands (Penrod et al. 2012). Least-cost modeling evaluates the relative cost for a species to move between targeted "Landscape Blocks" (more specifically, potential cores and patches of breeding habitat within each block) based on how each species is affected by various landscape characteristics (Penrod et al. 2012). Further, the Castle Mountains provide an ecological link between the Piute Range and the New York Mountains.

"Caltrans and CDFW commissioned the California Essential Habitat Connectivity Project because these agencies consider a functional network of connected wildlands to be essential to the continued support of California's diverse natural communities in the face of human development and climate change" (Spencer et. al. 2010).

On a local basis, the study area currently provides unrestricted wildlife movement, as there are no inaccessible fences or other obstructions to wildlife passage. Migratory birds may utilize the study area and vicinity for breeding, nesting, and foraging, or as transient rest sites during migration flights. Desert kit fox, American badger, mountain lion and coyote may travel across the study area in search of prey opportunities, and to access higher-quality habitat in the area for both prey and cover. Desert bighorn sheep may traverse the study area to travel between the Castle Mountains/Piute Range and the New York Mountains northeast of Lanfair Valley and into the Ivanpah Valley to the northwest. They also forage within the existing mine facility and proposed expansion areas, and drink from existing guzzlers.

4.4.2 Regulatory Setting

4.4.2.1 Federal

FEDERAL LAND POLICY AND MANAGEMENT ACT (FLPMA) (43 USC 1701–1787)

The Federal Land Policy and Management Act (FLPMA) (43 United States Code [USC] 1701–1787) establishes the statutory framework for the management and protection of federal public lands, principally those administered by the Bureau of Land Management (BLM). FLPMA is applicable to all proposed actions occurring on federal lands, including the expansion of mining operations. FLPMA requires that all activities on BLM-managed lands conform to approved Resource Management Plans (RMPs). Under FLPMA and associated regulations (43 CFR Subpart 3809), expansion of mining activities requires submission and approval of a Plan of Operations.

ENDANGERED SPECIES ACT (16 USC 1531–1543)

The federal Endangered Species Act (FESA) (16 USC 1531–1543) provides the legal framework for the listing and protection of species and their habitats recognized as endangered, threatened with extinction, or candidates for endangered or threatened status. The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA with the USFWS primarily implementing the FESA for freshwater and terrestrial species and the NMFS primarily implementing the ESA for anadromous species. Projects that may result in the "take" of any endangered or threatened animal species, or of threatened or endangered plant species occurring on federal land, are required to obtain permits from the USFWS or the NMFS, as appropriate. Permitting is conducted under Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the FESA,

depending on the extent of federal involvement in funding, authorizing, or implementing the project. The permitting process evaluates whether the proposed project would jeopardize the continued existence of a listed species and identifies measures necessary to prevent jeopardizing the species. Under federal law, "take" is defined as actions that harass, harm (including habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. While proposed or candidate species are not afforded the full protections of the FESA, USFWS, and NMFS advise project proponent that these species could be listed in the future, potentially affecting project requirements.

EXECUTIVE ORDER 13112 – INVASIVE SPECIES

Executive Order 13112 was signed in February 1999 and established the National Invasive Species Council. This Order requires agencies to identify actions that may affect the status of invasive species. It also directs federal agencies not to authorize, fund, or carry out actions that they believe are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that the agency has prescribed, it has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize the risk of harm will be taken in conjunction with the actions.

PLANT PROTECTION ACT OF 2000

The Plant Protection Act of 2000 (7 USC 104) established a federal program to control the spread of noxious weeds. The Secretary of Agriculture is authorized to publish a list of plants designated as noxious weeds (7 USC 7712(f)). The movement of all such weeds in interstate or foreign commerce is prohibited except under a permit.

LACEY ACT, AS AMENDED

The Lacey Act (16 USC 3371–3378) protects plants and wildlife by creating civil and criminal penalties for a wide variety of violations including illegal take, possession, transport, or sale of protected species.

BALD AND GOLDEN EAGLE PROTECTION ACT

The Bald and Golden Eagle Protection Act (BGEPA) prohibits the take, possession, and commerce of bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). Under the act and subsequent rules published by USFWS, "take" may include actions that injure an eagle or affect reproductive success (productivity) by substantially interfering with normal behavior or causing nest abandonment. USFWS can authorize incidental take of bald and golden eagles for otherwise lawful activities.

CLEAN WATER ACT

Congress enacted the Clean Water Act (CWA) "to restore and maintain the chemical, physical, and biological integrity" of the WOTUS. WOTUS are broadly defined to include navigable waters, relatively permanent streams, lakes, rivers, and ponds, as well as wetlands, marshes, and wet meadows.

Section 404

The discharge of dredged or fill material into WOTUS is regulated by the USACE under CWA Section 404. CWA Section 404 grants authority to the USACE to issue permits regulating the discharge of dredged or fill materials into WOTUS. The primary purpose of Section 404 is to ensure such discharges of dredged or fill material are not authorized if practical, less environmentally damaging alternatives are

available, or if the waters of the United States would be substantially degraded. Impacts to jurisdictional resources necessitate authorization through either a nationwide permit or an individual permit, contingent upon the magnitude of the impact. Individual permits are required for potentially significant impacts and are evaluated based on the type of action such as the amount of fill. Nationwide permits are subject to approval if a project meets the required conditions set forth in a nationwide permit. As a condition of the Section 404 permit, mitigation measures are required and may involve on-site or off-site wetland preservation, creation, restoration, or enhancement. To achieve no net loss of wetlands, the ecological characteristics of restored or enhanced wetlands must be equivalent to or superior to those of the wetlands affected by the proposed activity.

Section 401

CWA Section 401 requires every applicant for a federal permit or license for any activity which may result in a discharge to a WOTUS to obtain State Water Quality Certification (CWA Section 401) that the proposed activity would comply with state water quality standards. If a Section 401 Certification is issued, it may include binding conditions, which are incorporated either through the certification itself or through the requested federal license or permit.

BUREAU OF LAND MANAGEMENT SENSITIVE SPECIES

BLM Sensitive Species are designated by the BLM State Director. This list includes species that may be federally listed, proposed, or candidate species, or state-listed (BLM 2019, BLM 2023). The BLM's policy is to "ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered" (BLM 2014). Various offices of the BLM maintain a list of special status plant and wildlife species that are to be considered as part of the management activities carried out by the BLM on the lands that they administer.

MIGRATORY BIRD TREATY ACT

The federal Migratory Bird Treaty Act of 1918 is intended to ensure the sustainability of populations of all protected migratory bird species and prohibits any person, unless permitted by regulations, to:

pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatsoever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird. (16 USC 703)

The MBTA prohibits the "take" of protected migratory bird species without prior authorization by the USFWS. A migratory bird species is listed as a protected species if it meets one or more of the following criteria:

- Occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family protected by one of the four international treaties or their amendments;
- Revised taxonomy results in the species being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes; or
- New evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

The Migratory Bird Treaty Reform Act (MBTRA) of 2004 narrowed the scope of the MBTA by further defining species protected under the act and excluding all nonnative species to the United States or its territories. Native migratory bird species are defined as those present due to natural biological or ecological processes. The MBTRA directs the USFWS to maintain and publish a list of non-native, human-introduced bird species to which the MBTA does not apply. The most recent list, published in 2020, identifies species within biological families referenced in the treaties implemented by the MBTA, but excludes those species whose occurrence in the U.S. or its territories is solely attributable to intentional or unintentional human-assisted introduction (USFWS 2025).

CALIFORNIA DESERT CONSERVATION AREA PLAN

The CDCA Plan (BLM 1999) covers approximately 25 million acres of land in southern and southeastern California, with approximately 10 million acres being administered by the BLM. The CDCA Plan is a comprehensive, long-range plan with goals and specific actions for the management, use, development and protection of the resources and public lands within the CDCA and is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality.

DESERT RENEWABLE ENERGY CONSERVATION PLAN

In September 2016, BLM adopted the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA) to the CDCA Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan (BLM 2016a). The DRECP addresses solar, wind, geothermal energy generation, and transmission projects on 10.8 million acres of BLM-administered lands in the desert regions of southern California. The LUPA eliminates the Multiple Use Classes (MUCs) in the CDCA Plan and replaces them with specific land use designations (California Energy Commission 2026).

The DRECP establishes several land use classifications, including Development Focus Areas (DFAs), Variance Process Lands (VPLs), Recreation Management Areas, General Public Lands, and various conservation land use designations. In DFAs, renewable energy projects are incentivized, and permitting is streamlined. BLM Conservation Areas include National Landscape Conservation System lands, Areas of Critical Environmental Concern (ACECs), and Wildlife Allocations. Recreation Management Areas are designated for recreation actions. This designation includes Extensive Recreation Management Areas (ERMA), which entail management specifically to address recreation use and demand; and Special Recreation Management Areas (SRMA), which are high-priority areas for recreation and have unique value and importance for recreation. General Public Lands are BLM administered lands that do not have any of the above designations.

The DRECP includes a list of over 200 Conservation and Management Actions (CMAs) that prescribe avoidance, minimization, and compensatory mitigation actions that are applicable to new projects on BLM-administered lands in the DRECP plan area. The applicability of each CMA to a particular project depends on the BLM land designation(s) at the project area, project type, and resources present at the site.

FISH AND WILDLIFE COORDINATION ACT

The Fish and Wildlife Coordination Act (16 USC 661–666) applies to any federal project where the waters of any stream or other body of water are impounded, diverted, deepened, or otherwise modified. Project proponents are required to consult with the USFWS and the appropriate state wildlife agency. These agencies prepare reports and recommendations that document project effects on wildlife and identify measures that may be adopted to prevent loss or damage to wildlife resources. The term "wildlife" includes both animals and plants. Provisions of the Act are implemented through the Section 404 permit process.

NOXIOUS WEED ACT OF 1974

The Noxious Weed Act of 1974 (7 USC 2801 et seq.), under the authority of the Secretary of Agriculture, establishes a federal program to control the spread of noxious weeds. The Noxious Weed Act gives the Secretary of Agriculture authorization to work with other federal, state, and local agencies; agricultural organizations; and private individuals to implement measures to control, eradicate, and/or prevent the spread of noxious weeds.

4.4.2.2 State

CALIFORNIA ENDANGERED SPECIES ACT

CESA establishes the State's policy to conserve, protect, and restore threatened and endangered species and their habitats. CESA (California Fish and Game Code Section 2050 et seq.) prohibits take of State-listed threatened or endangered species. Take under CESA is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

This definition does not prohibit indirect harm resulting from habitat modification, except in cases where such harm is the proximate cause of mortality of a listed species. In situations where incidental take may occur as a result of construction or other lawful activities, the CESA authorizes the CDFW to issue an Incidental Take Permit, provided that, among other criteria, the impacts to the species are minimized and fully mitigated. In contrast to FESA, CESA's protections also apply to candidate species during the interim period, which is typically one year, while the California Fish and Game Commission evaluates whether the species warrants formal listing under CESA.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

Under CEQA, the lead agency is required to identify the project's potentially significant impacts on biological resources and ways to avoid, minimize, or mitigate these impacts. CEQA's guidelines and thresholds should be used by the lead agency to evaluate the significance of proposed impacts.

Special Status Plants and Wildlife

Under the State CEQA Guidelines, endangered animals or plants are defined as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors" (14 CCR 15380(b)(1)). State CEQA Guidelines Section 15380(b)(2) defines a rare animal or plant as a species that, although not currently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or … [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Furthermore, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing as defined in State CEQA Guidelines Section 15380(c).

Special Status Vegetation Communities

Section IV, Appendix G (Environmental Checklist Form) of the State CEQA Guidelines (14 CCR 15000 et seq.) requires impacts to "any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or the USFWS" to be evaluated.

CALIFORNIA FISH AND GAME CODE SECTIONS 3511, 4700, 5050, AND 5515 (FULLY PROTECTED SPECIES)

Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. CDFW cannot issue permits or licenses that authorize the "take" of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock. Furthermore, it is the responsibility of the CDFW to maintain viable populations of all native species. To that end, the CDFW has designated certain vertebrate species as Species of Special Concern because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

CALIFORNIA FISH AND GAME CODE SECTIONS 3503, 3503.5, AND 3513

California Fish and Game Code Section 3503 prohibits take, possession, or the needless destruction of the nest or egg of any bird, except as otherwise provided by the code or regulation made pursuant thereto. Section 3503.5 provides it is unlawful to take, possess, or destroy birds of prey, or to take, possess, or destroy the nest or eggs of any such bird, except as otherwise provided by the code or related regulation. Section 3513 prohibits take or possession of any migratory nongame bird, as designated in the federal MBTA and its implementing regulations, except as provided by rules and regulations adopted by the U.S. Secretary of the Interior under the federal act.

CALIFORNIA NATIVE PLANT PROTECTION ACT

The Native Plant Protection Act (CNPPA) of 1977 directs the CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The CNPPA gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take. The CESA expanded on the original CNPPA and enhanced legal protection for plants, but the CNPPA remains part of the Fish and Game Code. To align with federal regulations, the CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Because rare plants are not included in the CESA, mitigation measures for impacts to rare plants would be specified in a formal agreement between CDFW and the project proponent.

CALIFORNIA DESERT NATIVE PLANTS ACT

The purpose of the California Desert Native Plants Act (CDNPA) is to protect certain species of California desert native plants from unlawful harvesting on both public and privately owned lands. The CDNPA only applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego Counties. Within these counties, the CDNPA prohibits the harvest, transport, sale, or possession of specific native desert plants unless a person has a valid permit or wood receipt, and the required tags and seals.

CALIFORNIA FISH AND GAME CODE SECTION 1602

Section 1602 of the California Fish and Game Code states that it is unlawful for any person to "substantially divert or obstruct the natural flow of or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake" without first notifying the CDFW in writing of that activity. Thereafter, if the CDFW determines that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. Conversely, if the CDFW

determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain a Streambed Alteration Agreement (SAA) from the CDFW in accordance with Section 1602, which will include reasonable measures necessary to protect the affected resource(s), before the entity may conduct the activity described in the notification. Upon receiving a complete Notification of Lake/Streambed Alteration, the CDFW has 60 days to present the entity with a draft SAA. Upon review of the draft SAA by the applicant, any problematic terms are negotiated with the CDFW, and a final SAA is executed.

CALIFORNIA MIGRATORY BIRD PROTECTION ACT (AB 454)

The California Migratory Bird Protection Act (AB 454) permanently prohibits the take or possession of migratory nongame birds in California by codifying protections that align with the federal Migratory Bird federal MBTA. Enacted in 2025 as an urgency statute, AB 454 makes it unlawful to hunt, capture, kill, or possess any migratory nongame bird—or parts thereof—designated under the federal MBTA, including species listed prior to January 1, 2017 and any added thereafter (California Fish and Game Code Section 3513; AB 454, 2025). The law was adopted to eliminate gaps created by prior sunset provisions and to ensure continued state-level protections regardless of changes in federal enforcement policy (California Assembly Water, Parks, and Wildlife Committee 2025).

AB 454 strengthens regulatory certainty for conservation and environmental compliance by maintaining consistent protections for over 1,000 migratory bird species and reinforcing California's independent enforcement authority. Exceptions are limited to activities authorized under federal MBTA regulations or applicable provisions of the California Fish and Game Code, including permitted or mitigated actions approved by CDFW. The Act has direct relevance to CEQA review and project permitting, as projects with potential to affect migratory birds must incorporate avoidance, minimization, and mitigation measures to comply with state law (CalMatters, 2025; AB 454, 2025).

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act is the principal law governing water quality regulation in California. The Porter-Cologne Act establishes a comprehensive program to protect water quality as well as the beneficial uses of water and applies to surface waters, wetlands, and groundwater in addition to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code Section 13000 et seq.), the policy of the State is as follows:

- The quality of all the waters of the State shall be protected,
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason, and
- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation.

Based on watershed boundaries, the Porter-Cologne Act established nine RWQCBs, which, along with the SWRCB, have primary responsibility for implementing its provisions and protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds and rights to the use of surface water, and reviews decisions made by the RWQCBs. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of the nine hydrologic regions. The SWRCB and RWQCBs have numerous nonpoint source related responsibilities, including monitoring and assessment, financial assistance, planning, and management.

4.4.2.3 Local

SAN BERNARDINO COUNTYWIDE PLAN

The County Policy Plan, a component of the *San Bernardino Countywide Plan* (CWP), contains the long-term goals and policies that will guide County decisions, investments, and improvements toward achieving the countywide vision. It serves as the County's General Plan for the unincorporated areas and includes policy direction for regional services the County administers in both incorporated and unincorporated areas. Relevant policies in the Natural Resources Element of the CWP are summarized in Table 4.4-8 (County of San Bernardino 2020).

Table 4.4-8. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Natural Resources Element	
Goal NR-5	**Biological Resources.** An interconnected landscape of open spaces and habitat areas that promotes biodiversity and healthy ecosystems, both for their intrinsic value and for the value placed on them by residents and visitors.
Policy NR-5.1	**Coordinated habitat planning.** The County participates in landscape-scale habitat conservation planning and coordinates with existing or proposed habitat conservation and natural resource management plans for private and public lands to increase certainty for both the conservation of species, habitats, wildlife corridors, and other important biological resources and functions; and for land development and infrastructure permitting.
Policy NR-5.2	**Capacity for resource protection and management.** The County coordinates with public and nongovernmental agencies to seek funding and other resources to protect, restore, and maintain open space, habitat, and wildlife corridors for threatened, endangered, and other sensitive species.
Policy NR-5.3	**Multiple-resource benefits.** The County prioritizes conservation actions that demonstrate multiple resource preservation benefits, such as biology, climate change adaptation and resiliency, hydrology, cultural, scenic, and community character.
Policy NR-5.6	**Mitigation banking.** The County supports the proactive assemblage of lands to protect biological resources and facilitate development through private or public mitigation banking. We require public and private conservation lands or mitigation banks to ensure that easement and fee title agreements provide funding methods sufficient to manage the land in perpetuity.
Policy NR-5.7	**Development review, entitlement, and mitigation.** The County complies with state and federal regulations regarding protected species of animals and vegetation through the development review, entitlement, and environmental clearance processes.

4.4.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to biological resources if the project would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.4.4 Impact Assessment Methodology

This analysis focuses on evaluating estimated direct, indirect, permanent, and/or temporary impacts to biological and aquatic resources due to project implementation, including operations and maintenance and reclamation. Impacts are project-related actions that destroy, injure, modify, or otherwise affect biological resources. This may include damage, death, or nuisance to plant or wildlife species. Impacts may also include the destruction, modification, or disturbance of habitats for plant and wildlife species.

Direct, indirect, permanent, and temporary impacts to biological resources may occur as a result of the following proposed mine expansion components:

- Expansion of mine pits, heap leach and, and overburden sites;
- Increased mine life;
- Increased groundwater use;
- Construction of the Ivanpah Water Pipeline;
- Construction of a 69kV Power Line;
- Relocation of Select Facilities;
- Modifications of Access Road Use and Maintenance; and
- Reclamation.

Direct impacts are impacts that occur concurrently with project activities. Thus, impacts that occur at the same time and location of preconstruction, during-construction, post-construction, and/or reclamation activities. Indirect impacts are those that do not have an immediate impact but have the likelihood to result in the impact of a biological resource at a different time or location from the project-related activity.

Permanent impacts are defined as irreparable or long-term impacts to biological resources as a result of preconstruction, during-construction, post-construction, and/or reclamation activities. Temporary impacts to biological resources are those that are repairable over time, with or without the implementation of mitigation measures. Table 4.4-9 summarizes impacts that may result from implementation of the Project. Potential impacts were evaluated based on the biological technical reports listed in Table 4.4-2.

Table 4.4-9. Potential Impacts and Timing

Impact Causing Element	Example of Impact	Timing	Direct	Indirect	Permanent	Temporary
Ground Disturbance	Destruction of burrows used by wildlife	Preconstruction, reclamation	X		X	
Vegetation Removal	Loss of host plants for pollinators	Preconstruction	X	X	X	
Trenching	Removal of habitat for special-status species	Preconstruction	X	X	X	X
Excavation	Trapped wildlife	Preconstruction	X		X	
Increased Human Presence	Food waste attracting prey species	Preconstruction and during construction; during facility operation period; reclamation	X	X	X	
Traffic	Wildlife road mortality	Preconstruction and during construction; during facility operation period; reclamation	X	X	X	
Long-Term Facility Operation	Reduction of available breeding, foraging and wildlife movement habitat	Facility operation	X	X	X	
Herbicide Use	Reduction of pollinators for special-status plant species	During facility operation period; reclamation	X	X	X	X
Increase in Non-Native, Invasive Plants	Loss of native plants and wildlife habitat	Preconstruction and during construction; during facility operation period; reclamation	X	X	X	X
Altered Hydrology	Loss of available drinking water for migratory wildlife	Preconstruction	X	X	X	
Blasting	Wildlife mortality	During facility operation	X	X	X	X
Increase in Noise	Interference with bat echolocation	Preconstruction and during construction; during facility operation period		X	X	
Increase in Lighting	Delay bat emergence from roosts	Preconstruction and during construction; during facility operation period		X	X	
Vibration	Reduce wildlife foraging due to disrupted substrate-borne vibration predator detection	During construction; during facility operation period	X	X	X	

Impact Causing Element	Example of Impact	Timing	Direct	Indirect	Permanent	Temporary
Dust / Dust Abatement	Impaired germination of special-status plants	Pre- and during construction; during facility operation period; reclamation		X	X	X
Soil Compaction	Impaired germination of special-status plants	Preconstruction	X	X	X	
Reclamation Activities	Increase in invasive plant species due to introduction of seeds on vehicles	Reclamation	X	X		X

4.4.4.1 Applicant-Proposed Measures

The Project Applicant has identified and committed to implementing the following applicant-proposed measures (APMs) as part of the proposed Project to avoid or substantially lessen potentially significant impacts to biological resources, to the extent feasible. The APMs below were included in the *Castle Mountain Mine: Mine Plan of Operation & Reclamation Plan Amendment* (CMV 2025).

APM-WILD-1 Measures to isolate cyanide processing solutions from wildlife have been incorporated into project design plans. Specific measures to be employed have been confirmed for their effectiveness during completed testing programs.

a. The solution storage area shall use steel storage tanks.

APM-WILD-2 b. The solution storage area shall be designed so that solutions are unavailable to wildlife.

APM-WILD-3 c. The solution storage area shall include fencing or and netting over the emergency storage basin, designed to preclude access by birds and bats.

APM-WILD-4 d. The solution storage area shall employ hazing techniques if process solutions enters the stormwater storage basin.

APM-WILD-5 If avian entanglement becomes a problem, the Applicant shall replace the netting over the emergency storage basin with a different type of net or will implement another method to prevent entanglement.

APM-WILD-6 **Heap Leach Piles Area:**

1. Active heap leach pads shall be surrounded by chain-link fence.

APM-WILD-7 **Heap Leach Piles Area:**

2. Drip irrigation methods shall be used to distribute solution directly on the heaps, including both tops and sides, to minimize potential ponding of water available to birds and other animals.

APM-WILD-8 **Heap Leach Piles Area:**

3. Drip irrigation tubing shall be mostly buried within the upper surface of placed ore on the heap leach pad to minimize potential ponding of water and to reduce evaporative water loss.

APM-WILD-9 The cyanide solution system shall be operated as a closed circuit, with solution transported from heap piles to storage tanks, to the processing plant, and back to the heap piles in a system of pipes, rather than open ditches. Open ditches will be used only to carry heavy storm runoff.

APM-WILD-10 Cyanide-related animal mortalities must be reported monthly to the BLM Needles Field Office no later than the 10th of each month. The report shall include the following information:

The number and kind of each mortality attributed to cyanide. "Kind" will be reported under one of the following categories: raptors, songbirds, upland game birds, waterfowl, shorebirds, mammals, and other; location where the dead animal was found; and other information requested by the BLM.

APM-WILD-11 A program to educate employees about area wildlife shall be implemented by the Applicant in connection with the safety program. The Applicant shall acquaint personnel with laws protecting vegetation and wildlife, characteristics of desert wildlife, and proper procedures if wildlife is encountered. Drivers shall be educated about potential hazards of desert-road driving, driving at proper speeds, and the importance of not harassing or interfering with the desert tortoise. Employees shall comply with BLM open/closed area designations and road regulations.

APM-WILD-12 Employees shall not bring domestic cats to the site. Dogs must be kept on a leash at all times.

APM-WILD-13 **Desert Tortoise.** The Applicant shall inform project personnel that only authorized personnel shall handle tortoises and of the tortoises' protected status.

APM-WILD-14 **Desert Tortoise.** A project sponsored program of busing/vanpooling to the project from locations in the Las Vegas valley shall be implemented. At a minimum 75% of the work force shall travel to the project by bus/vanpool.

APM-WILD-15 **Desert Tortoise.** The Applicant shall locate and flag on-site tortoise burrows before initiating surface-disturbing activities. Flagged areas shall be avoided whenever possible. If occupied burrows are within areas designated for project facilities or activities, relocation of tortoises shall be coordinated with the BLM and U.S. Fish and Wildlife Service (USFWS).

APM-WILD-16 **Desert Tortoise.** Project waste shall be properly managed, and the site monitored to control refuse that could attract ravens. Prior to landfill disposal, refuse shall be kept in containers designed to exclude wildlife.

APM-WILD-17 **Birds.** Power lines shall be constructed in a manner to discourage raven nesting/roosting. As part of the on-site biological monitoring, raven populations in the project vicinity shall be monitored by the project

environmental specialist. Results shall be reported to the BLM annually to assess whether unusual increases in raven populations are occurring.

APM-WILD-18 **Desert Tortoise.** The Applicant shall implement the terms and conditions to comply with the reasonable and prudent measures set forth in the USFWS Biological Opinion (BO).

APM-WILD-19 **Desert Tortoise.** The Applicant shall implement the terms and conditions to comply with the reasonable and prudent measures set forth in the CDFW ITP.

APM-WILD-20 **Desert Tortoise Reasonable and Prudent Measure a.** Worker education program and well-defined operational procedures shall be implemented to avoid the take of desert tortoises and their habitat during project activities.

APM-WILD-21 **Desert Tortoise Reasonable and Prudent Measure b.** Take of desert tortoises, through injury or death due to the straying of equipment or vehicles beyond project areas, shall be reduced through establishment of clearly defined work areas.

APM-WILD-22 **Desert Tortoise Reasonable and Prudent Measure c.** Take of desert tortoises, through injury or death, shall be avoided through the removal of these animals to undisturbed areas out of harm's way when they are not otherwise avoidable.

APM-WILD-23 **Desert Tortoise Reasonable and Prudent Measure d.** Attraction of common ravens and other potential desert tortoise predators to project areas shall be reduced to the maximum extent possible.

APM-WILD-24 **Terms and Conditions a.1.** The BLM shall appoint an official project representative who shall be responsible for compliance with all mitigation measures. This person (who may also be an authorized biologist) shall have authority to stop all project-related actions that could cause death or injury to a desert tortoise.

APM-WILD-25 **Terms and Conditions a.2.** All persons associated with the project shall participate in a desert tortoise education program. The program shall include, at a minimum, the following topics: the occurrence of desert tortoises at the mine site and along the access road, sensitivity of the species to human activities, legal protection for desert tortoises, penalties for violations of federal laws, general activity patterns of the desert tortoise, reporting requirements, measures to protect desert tortoises, and measures users can take to promote the conservation of desert tortoises. All persons shall be informed of their responsibility to report any form of take to the official project representative. An inventory of all trained personnel will be kept by CMV and be submitted to the BLM Needles Field Office by December 31 of each year.

APM-WILD-26 **Terms and Conditions a.3.** Because desert tortoise may seek shade underneath equipment of vehicles, all on-site employees shall be responsible for surveying under parked vehicles prior to moving them. An authorized biologist shall be contacted to remove any desert tortoise found prior to

moving a vehicle or the vehicle shall be left in place until the animal moves of its own accord.

APM-WILD-27 **Terms and Conditions a.4.** All open holes shall be inspected at the beginning, middle, and end of the day for trapped desert tortoises. If desert tortoises are trapped, the biological monitor shall be notified immediately. The desert tortoises shall be allowed to escape or shall be carefully removed and relocated by an authorized biologist before work continues in that location.

APM-WILD-28 **Terms and Conditions a.5.** Any activities that may disturb native habitat shall be limited to areas that have already been cleared of desert tortoises by the authorized biologist(s) and enclosed in a fence to exclude desert tortoises. When feasible, during the installation of the fence to exclude desert tortoise, vegetation shall be crushed rather than bladed.

APM-WILD-29 **Terms and Conditions a.6.** The BLM shall ensure that CMV has installed fencing to exclude desert tortoises around the perimeter of its work area prior to surface disturbance. The fence design and location shall be approved by both USFWS and CDFW. Any proposals to alter the fence design or location shall be submitted to the USFWS and CDFW for approval prior to use. The authorized biologist or environmental specialist shall conduct periodic inspections of the fence to ensure its integrity and to inspect for trapped wildlife. Particular attention shall be given to wash areas after rainstorms.

APM-WILD-30 **Terms and Conditions a.7.** Fencing to temporarily exclude desert tortoises, if determined by the authorized biologist to be needed, shall consist of an approved design, maintained at zero ground clearance. It does not need to be buried. The fence shall be supported as necessary to prevent access by desert tortoise to the project site. The fence shall be removed immediately on completion of project activities in the fenced area.

APM-WILD-31 **Terms and Conditions a.8.** If CMV fails to comply with any of the reasonable and prudent measures or terms and conditions of the BO or similar requirements of the ITP, the agencies shall suspend the authorization allowing for the activities until such time that CMV complies with these terms and conditions.

APM-WILD-32 **Terms and Conditions a.9.** Firearms shall be prohibited on the CMM site, except for those borne by authorized security personnel, CDFW game wardens, and BLM rangers.

APM-WILD-33 **Terms and Conditions a.10.** Each authorized biologist shall maintain a daily log recording all desert tortoises that are encountered. The annual report shall be forwarded to the USFWS and CDFW detailing the locations of each occurrence, the general condition and health of each individual, diagnostic markings, and any actions undertaken.

APM-WILD-34 **Terms and Conditions a.11.** Reclamation activities shall include the removal from the site and proper disposal of all hazardous wastes that could be harmful to wildlife.

APM-WILD-35 **Terms and Conditions b.1.** Expansion areas shall be fenced prior to onset of mining operations. All workers shall be instructed that their activities must be confined to within these areas.

APM-WILD-36 **Terms and Conditions b.2.** If heavy equipment must be used outside the fence built for the long-term exclusion of desert tortoises, the work areas shall be clearly staked, flagged, or temporarily fenced prior to the onset of project activities. If such an area is staked or flagged, the authorized biologist shall be present at all times that activities are being conducted that could result in injury to or mortality of desert tortoises.

APM-WILD-37 **Terms and Conditions c.1.** The authorized biologist(s) shall accompany the fence construction crew to ensure that desert tortoises are not killed or injured during this activity. Where possible, the fence shall be routed to place occupied burrows of the desert tortoise outside of the mining area.

APM-WILD-38 **Terms and Conditions c.2.** After fencing to exclude desert tortoises has been installed and prior to ground disturbance, authorized biologists shall examine the mine expansion areas for desert tortoises and their burrows. The inspection shall provide 100% coverage of the area within the expansion zone.

APM-WILD-39 **Terms and Conditions c.3.** The fence around the existing leach pad shall remain intact until the native habitat between it and the new fence can be thoroughly searched for desert tortoises.

APM-WILD-40 **Terms and Conditions c.4.** Desert tortoises shall only be handled by biologists who are authorized by the USFWS and/or the CDFW. The BLM shall submit the names and credentials of CMV biologists to the USFWS for its review and approval at least 15 days prior to the time they will need to handle desert tortoises. Biologists who have been authorized by the USFWS to handle desert tortoises for the existing CMM project may continue with this task for the expansion without additional authorization. Desert tortoises and their eggs shall be handled according to the procedures outlined in Desert Tortoise Council (1996).

APM-WILD-41 **Terms and Conditions c.5.** Any desert tortoises found within the expansion areas shall be relocated outside the exclusion fence in undisturbed habitat. The relocation site shall be as close as possible to the capture site where suitable habitat is present. All excavation of desert tortoise burrows shall be done by hand by an authorized biologist. The desert tortoise shall be placed in a burrow of appropriate size or in a shady location under a large shrub. If relocation occurs during the normal dormant period, the desert tortoise shall be moved and placed in a burrow only. If no burrows are available for relocating the desert tortoises, artificial burrows shall be used. Protocols developed by the Desert Tortoise Council (1996) shall be followed for construction of artificial burrows.

APM-WILD-42 **Terms and Conditions d.** All personnel that enter the expansion area shall be required to contain all food stuffs, trash, or other waste that may attract predators. Any trash receptacles shall be equipped with latching or locking lids.

APM-WILD-43 **Desert Tortoise.** During the active season from March–October, routine road repair work is monitored by an authorized biologist. The biologist has full authority to suspend work if a tortoise is in the project area or if a burrow is found adjacent to the roadway and marked for avoidance. Biologists are approved by the Needles BLM Field office biologist and if required, by USFWS; it is assumed here that a biologist approved by one U.S. Department of the Interior (DOI) agency (BLM) would also be approved by any other DOI agency (NPS). Biologists are not approved to handle the tortoise during normal road repair work. Standard procedure is for work to halt until the tortoise moves away from the active work area.

APM-WILD-44 **Desert Tortoise.** During the inactive winter period for the desert tortoise, any scheduled road maintenance may or may not include monitoring by a biologist, but at a minimum an observer will monitor the advance of road repair equipment to monitor for potential burrows adjacent to the road, which will be marked for avoidance.

APM-WILD-45 **Desert Tortoise.** CMV trains all staff and contractors on desert tortoise awareness, as well as maintains company policies that help prevent the take of any endangered species.

APM-WILD-46 **Bats/Birds.** Outdoor lighting for the mine pits and other areas of nighttime activities shall be shielded to direct lighting to the area of activity.

APM-WILD-47 To allow access to abandoned mine workings used as habitat by bats and other animals, adits and shafts on the project site that do not pose a hazard to people shall be left open or barricaded in a manner acceptable to the BLM to permit animal ingress/egress.

APM-WILD-48 **Bat/Birds.** An examination of former mine shafts and adits shall be completed prior to earth-moving activities in the area to estimate whether they are occupied by bats or other species. The evaluation shall be completed during the winter hibernation period by an ecologist familiar with bat fauna. If a colony is found or substantial use by individual bats is indicated, blasting or heavy-equipment use shall be restricted at or adjacent to the roost sites during the identified period of occupation. If the habitat used by a colony will be required for project development, a mitigation program shall be completed.

APM-WILD-49 **Bats/Birds.** Design and construction of electric power-distribution poles shall incorporate provisions for raptor safety.

APM-WILD-50 **Bats/Birds.** Areas of significant cyanide solution ponding will be covered with netting or other similar material to prevent bird access to the solution.

APM-WILD-51 **Bighorn Sheep.** Project fencing shall be constructed according to BLM specifications designed to prevent potential bighorn sheep entanglement.

APM-WILD-52 **Birds.** Conduct vegetation removal outside the active nesting bird season that runs from March 1 through August 31. Vegetation clearance that does occur inside the active nesting bird season (March through August) must be preceded by a nesting bird survey to document the absence of nesting birds.

APM-WILD-53 **Bat/Birds.** When fencing is necessary, bird- and bat-compatible design standards shall be used.

APM-WILD-54 **Bat/Birds.** Lighting and shield lighting that does not attract birds and bats or their prey to project sites shall be used.

APM-WILD-55 **Bat/Birds.** Drilling and mining activities will avoid features with identified owl nests in the spring and summer. During the winter, drilling and mining through bat habitat features on the east side of CMM shall not be done in the winter unless bats are first temporarily excluded in the fall. Therefore, wildlife exclusion and/or closure shall be done during the late summer and early fall (September–October).

APM-WILD-56 **Bats/Birds.** If mining is renewed in the areas where bat habitat features are located, features will either be closed with bat and wildlife exclusion as described above or closed with a bat-compatible cupola or gate.

APM-WILD-57 **Bighorn Sheep.** CMV shall report any bighorn sheep mortalities, whatever the cause, to the BLM Needles Field Office wildlife biologist within 48 hours of discovery.

APM-WILD-58 When conducting drilling operations, all sumps shall be fenced with temporary plastic construction fencing to limit ingress of wildlife into the sump. As an additional safety measure, all sumps shall have one end ramped to facilitate escape in the unlikely event wildlife does get through the perimeter fence.

APM-WILD-59 **Bighorn Sheep.** Existing wildlife drinkers shall be maintained and/or relocated as appropriate.

APM-PLANTS-1 Prior to grading of new pads or roads, preconstruction surveys would be conducted by a qualified biologist on new pad and road alignments to determine whether rosy two-toned beardtongue is present on-site. At locations in which the species is found, the seed and seed-bearing topsoil shall be collected (prior to land disturbance) and stored appropriately for revegetation on the site or other favorable areas on the mine site. In addition, the on-site vegetation will be crushed to the extent practicable, and pushed to the perimeter and pushed back over the site during reclamation.

APM-WEED-1 If noxious weeds are encountered within the construction area, mitigation measures will be instituted in consultation with the BLM weed specialist, and/or County and NDOT. ROW monitoring and weed abatement following construction will be conducted as required by the applicable agency. To avoid the spread of noxious weeds, all vehicles brought in from out of the area will go through high pressure washing of the undercarriages at a commercial carwash prior to arriving on site and before being used on the Project

APM-REC-1 The Applicant shall continue to maintain its revegetation program that includes the following measures:

a. Review of all available materials describing methods and success rates of revegetation programs employed on other lands in the arid west to determine the best available procedures.

APM-REC-2 b. Continue ongoing revegetation research programs, as necessary, to meet the reclamation and revegetation goals defined in the approved Reclamation Plan.

APM-REC-3 c. Revegetation success shall be determined by measuring the density and diversity of perennial species. "Density" here means the number of live perennial individuals per unit area; "diversity" here means the number of perennial species (with live individuals) per unit area. These standards are further defined in the approved Reclamation Plan.

APM-REC-4 d. Stockpiling of available soil. Redistribution of these soils over disturbed areas shall be done following completion of activities on an area. Studies shall been completed that defined how available soil would be most effectively used.

APM-REC-5 e. Identification of dominant species to be used in revegetation. Salvaging of individual plants amenable to transplantation shall be completed, and such plants will be kept in nursery areas for replanting on reclaimed areas to provide a continuous seed source. The goal will be to transplant at least 25% of barrel cactus and 25% of the following species with the size classification shown:

APM-REC-6 Joshua tree – 3 to 10 feet in height, unbranched or with few branches.

APM-REC-7 Mojave yucca – well-developed, single-stemmed plants that have not developed a vertical trunk.

APM-REC-8 Blue yucca – well-developed, single-stemmed plants that have not developed a vertical trunk.

APM-REC-9 Barrel cactus – plants no smaller than 8 inches in diameter and no taller than 14 inches.

APM-REC-10 f. The nursery will continue to support the revegetation research program and mine reclamation.

APM-REC-11 g. A plan shall be developed to coordinate and phase revegetation efforts in accordance with mining and processing operations; this is known as concurrent reclamation. The goal will be to initiate revegetation procedures within 6 months following completion of project activities over an area.

APM-REC-12 h. Potential invasion of exotic species shall be monitored. Prior research conducted at the CMM has shown that concentrations of exotic species (such as Russian thistle) decrease at a rate inversely proportional to the

density (and success) of native vegetation established under the Reclamation Plan.

APM-REC-13 i. Employment of reseeding, transplantation, fertilization, and watering procedures determined appropriate for each disturbed area in the program methodology.

APM-REC-14 j. Evaluation of the benefits of removing, shredding, and composting vegetation that would otherwise be lost.

APM-REC-15 k. Ground-preparation procedures shall include ripping and harrowing of compacted soils. Intervening areas between planted soil islands on overburden–waste-dump deck surfaces shall be ripped to decrease compaction and improve rainfall infiltration, reduce runoff, and provide a suitable seed bed for plant dispersal.

APM-REC-16 l. Implementation of a monitoring program to verify revegetation results, based upon the goals for diversity and density.

APM-REC-17 The revegetation bond for any specific area will not be released until the Applicant demonstrates, based on monitoring of the revegetation of that area (including at least 2 full years in which the vegetation is completely self-sufficient) that the density and diversity standards set forth in the Reclamation Plan have been met.

APM-REC-18 Vegetation considered unnecessary for reclamation shall be made available to the public during agreed-upon plant donation events.

APM-REC-19 Vegetation considered unnecessary for reclamation shall be made available to commercial plant harvesters according to the terms of any such agreement made between the Applicant and the BLM and the County.

APM-REC-20 Vegetation within areas of temporary disturbance (such as for well construction) shall be crushed—instead of bulldozed—to enhance recovery.

APM-REC-21 Waste rock (overburden) will be backfilled into final excavated mine pits when the action can occur concurrently with the mining schedule. Normally, this means that the last mine pit excavated would not be backfilled or would be only partially backfilled.

APM-REC-22 The Applicant shall comply with all reclamation and other requirements set forth in the Mine Plan and Reclamation Plan for CMM as approved and amended by the County Planning Commission.

APM-REC-23 The Applicant shall continue to post a letter of credit, cash, or surety bond jointly with the County and the BLM to ensure compliance with all conditions of the Plan of Operations and Reclamation Plan and Memorandum of Understanding for the Reclamation of CMM. That bond amount shall continue to be reviewed for adequacy at 2-year intervals. The bond amount shall be adjusted as set forth in detail in the Reclamation Plan. Portions of the bond shall be released to the Applicant upon certification by the BLM and the County that all reclamation conditions applicable to a given reclamation area have been complied with, as specified in detail in the

Reclamation Plan. The County has agreed to administer the bond, subject to Regulation Plan Regulation No. 21(1)(2).

APM-REC-24 Revegetation efforts shall be initiated as soon as practicable during the project operation period as use of specific disturbed areas is completed.

APM-REC-25 Revegetation efforts for completed portions of the overburden pile and decommissioned heap leach piles shall be initiated during the operational period rather than deferring revegetation until operations are completed.

APM-REC-26 At the time of project decommissioning, all equipment, buildings, structures, and refuse shall be removed from the site, all hazards mitigated, and reclamation completed according to the approved Mine/Reclamation Plan.

APM-REC-27 Reclamation activities shall include control of slopes on cuts and fills, plus revegetation, to control surface erosion in accordance with the Reclamation Plan. Final slope lengths and appropriate mid-slope benches/terraces shall be reexamined prior to completion of final grading to determine adequacy of erosion control measures. Necessary corrections to ensure proper drainage and minimal erosion will be accomplished prior to acceptance for final reclamation of grading/earthwork activity and bond release.

APM-REC-28 Upon project completion, the Applicant shall remove all operating facilities—including structures, equipment, transmission lines, and fencing—in conformance with the Reclamation Plan requirements.

APM-REC-29 Site reclamation shall include modification of final overburden and heap leach pile shapes to reduce the impact of straight-line geometrics and potential contrast in form and line. A revised plot plan shall be submitted and approved by the BLM and the County Planning Department showing final footprint configurations and cross sections that reflect the final mitigation imposed in the Reclamation Plan approval, such as Stipulations 20 and 92 of the BLMs March 1998 Record of Decision approving the mine plan of operation and reclamation plan changes analyzed in its 1997 EIS (No. DES 97-10).

APM-REC-30 At project decommissioning, final slopes shall be 2:1 (horizontal to vertical) for the overburden pile and 2.5:1 for the heap leach piles. Exceptions may be made based on individual slope characteristics and desired visual resource objectives by using the options described in the Reclamation Plan. Final slopes shall be contoured as provided for in the Reclamation Plan and shall incorporate to the extent available a final covering of darker material that blends with the surrounding landscape. Final slope angles shall mimic the natural topography as much as possible. Any exceptions must be authorized in writing and interested parties notified.

APM-REC-31 At the cessation of active mining, the Applicant shall secure separate financial assurance that will ensure that any pits created by mining activities in which a pit lake forms will be backfilled to a level at least 5 feet above the high-water lake level in the event monitoring of pit-lake water demonstrates: (1) that acidic conditions due to oxidation of sulfide minerals or (2) other poor water quality due to concentrations of metals would pose a substantial

threat to health and the environment, as determined by state law, are likely to develop. Monitoring of pit-lake water would be conducted for the duration of the 10-year closure period unless: (1) pit-lake water toxic constituents exceed appropriate maximum allowed standards, according to state law, and pit backfilling is commenced or (2) appropriate state-of-the-art analytical techniques demonstrate the pi- lake waters would not exceed current state or federal water quality standards in the future. Backfill material shall have a high neutralization potential. The surface of any backfilled material placed in pits as a result of this circumstance should be loose, uncompacted, coarse cobble-sized material to inhibit ponding of surface water during and after precipitation events. This financial assurance shall be in place commencing at the beginning of the 10-year closure period and shall be maintained for the entire period unless released by the County and the BLM.

APM-REC-32 **Reclamation and Closure.** New and existing mining units shall be closed so that they no longer pose a threat to water quality. No post-closure land uses shall be permitted that might impair the integrity of containment structures.

APM-REC-33 **Reclamation and Closure.** The Discharger shall notify the RWQCB in writing of the final closure or partial final closure of a mining unit at least 180 days prior to beginning any final closure activities. The notice shall include a statement that all closure activities will conform to the most recently approved final or partial final closure plan and that the plan provides for site closure in compliance with all applicable federal and state regulations.

APM-REC-34 **Reclamation and Closure.** CMV shall carry out closure of a mining unit or a portion of a unit only in accordance with a Closure and Post-Closure Maintenance Plan approved by the RWQCB through the issuance of closure WDRs

APM-REC-35 Powerline closure includes removing and recycling the overhead wiring, cutting the wood poles at or near ground level, and removing cable supports or other ancillary surface equipment.

APM-REC-36 Water pipeline closure includes draining the water line, excavating both ends of the pipeline, and sealing the pipeline at those locations, followed by reburial. This closure technique is the industry standard for buried utilities known as closure-in-place. Any surface equipment or vaults will also be removed, and the pipeline will be sealed and reburied at those locations.

APM-REC-37 During initial ground preparation and construction, affected vegetation will be crushed rather than bladed when it is feasible to do so. Vegetation that is not salvaged will be removed and stockpiled out of the way. This material can be reapplied during reclamation for use as a vertical mulch; it has also proven beneficial for seed stabilization during the germination period.

APM-REC-38 Growth media will be salvaged primarily during the construction of the water pipeline because subsurface disturbance will be minimal for the overhead powerline and power pole installation. The latter consists of installing the tension cables and small-diameter auger drilling for the poles. Pole locations will be as near as possible to the existing CMM Access Road, so temporary

roads will not be required. Growth media will be furrowed adjacent to the water pipeline trench and will remain in place until short-term reclamation begins. Reclamation of the short-term water line ROW is estimated to begin within 12 months from the time of disturbance.

APM-REC-39 The short-term water line ROW area will be seeded with a local certified weed-free seed mixture. The seed mix and application method will be preapproved by the BLM and included in a final reclamation plan. Seed will either be collected locally or purchased from a commercial vendor. Prior to beginning reclamation, a post-reclamation watering and monitoring schedule will be provided to the BLM for review and approval.

APM-REC-40 Monitoring for reclamation success will follow the methods stated in the Castle Mountain Mine 2022 MPO and Reclamation Plan (2022 Plan). Standardized linear transects or plots (typically two meters by ten meters in size) will be used to record perennial plant density and diversity. Revegetation monitoring will be conducted to qualitatively evaluate native plant establishment and vigor, to identify and make recommendations for correcting problems (weeds, lack of progress), and to quantitatively measure the development of the reclaimed habitat to determine its progress to the established success criteria. An Annual Revegetation Monitoring Report will be prepared to summarize revegetation and monitoring efforts for ten years or until deemed successful by the observed results and review by the BLM.

Based on the monitoring results, and upon consultation with the BLM, additional remedial activities may include additional seeding, plant protections, and/or a change of seed mix.

4.4.5 Project-Specific Impacts and Mitigation Measures

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

IMPACT BI-1: THE PROJECT WOULD HAVE A SUBSTANTIAL ADVERSE EFFECT, EITHER DIRECTLY OR THROUGH HABITAT MODIFICATIONS, ON ANY SPECIES IDENTIFIED AS A CANDIDATE, SENSITIVE, OR SPECIAL STATUS SPECIES IN LOCAL OR REGIONAL PLANS, POLICIES, OR REGULATIONS, OR BY THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE OR U.S. FISH AND WILDLIFE SERVICE. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

Potential adverse effects to special status plant and wildlife species could result from Project construction, operation, and maintenance, and future reclamation activities. Permanent, direct impacts may occur through ground disturbance, vegetation removal, and trenching before and during construction that could injure or kill individual plants or animals, destroy burrows and other habitat features, or eliminate suitable habitat for special status species. Permanent direct impacts may occur through the removal or degradation

of habitat used for avian nesting and foraging. Permanent direct impacts to special status plants may occur through the permanent removal of seed beds or altered hydrology. Permanent direct impacts may also occur through the removal of larval host and/or nectar plants for special status invertebrates. Permanent, indirect impacts may occur through a reduction of prey base through habitat loss, noise disturbance, and/or lighting disturbance.

Indirect, permanent impacts may occur from long-term vegetation management and/or reclamation with non-native species, reducing the quality and abundance of floral resources through weed invasion or unsuitable plant palettes. Indirect, permanent impacts may occur to invertebrates through harm of host plants through herbicide application. Temporary, direct impacts to special status plants during construction could include the deposition of fugitive dust raised by vehicles and equipment, leading to a reduction in photosynthesis and other physiological processes. Indirect, temporary impacts may occur from increased human presence, traffic, and long-term facility operation that could increase special status wildlife road mortality risk and result in habitat fragmentation. Indirect, temporary impacts may result from increased noise disturbance during wildlife breeding seasons before, during construction, and during operations and reclamation. Permanent, indirect impacts may occur through disturbance to wildlife from noise, including increased blasting closer to occupied habitat, traffic, and facility presence within wildlife movement corridors before and during construction, and during operations, maintenance, and reclamation. Permanent, indirect impacts may occur through wildlife displacement due to long-term facility presence.

Special Status Plants

Four distinct special status plant surveys were conducted for the Project between 2020 and 2025 for the following study areas:

- **ECORP 2020 surveys**: 1,700 acres within the central, western, and southern portions of the approved mine boundary area, and drone surveys over 700 acres within the eastern and northeastern portions of the approved mine boundary area;
- **ECORP 2021 surveys**: 2,400 acres within the approved mine boundary area;
- **SWCA 2023 surveys**: the proposed utility ROW corridor from Nipton, California, to Walking Box Ranch Road, and from Walking Box Ranch to the approved mine boundary; and
- **SWCA 2025 surveys**: Un-surveyed areas of the proposed utility corridor ROW along Walking Box Ranch Road/Castle Mountain Mine Road between the Approved Mine Boundary and SR-164. And along SR-164 between walking Box Ranch Road and Nipton, California.

A total of seven special status plant species were determined to occur within the study area—Parish's club-cholla, viviparous foxtail cactus, rosy two-toned beardtongue, Mojave milkweed, black grama, thorny milkwort, and Clark Mountain buckwheat. In addition, 26 special status plant species are likely to occur. Mitigation Measures MM-BI-1.1 and MM-BI-1.2 are intended to provide current, preconstruction occurrence data for special status plant occurrence distribution throughout the proposed mine expansion (expansion area, access routes, and utility ROWs). These mitigation measures call for translocation and salvage prior to ground disturbance to reduce or mitigate impacts to special status plant species.

Per the State CEQA Guidelines, implementation of Mitigation Measures MM-BI-1.1 through MM-BI-1.4 would reduce substantial adverse effects, either directly or through habitat modifications, to special-status plant species. The implementation of the mitigation measures included for Impact BI-1 would reduce potential impacts to special status plant species to *less than significant with mitigation*.

Special Status Wildlife

A total of 21 special status wildlife species, including three reptiles, twelve mammals, and six avian species, were determined to occur within the study area – desert horned lizard, desert iguana, desert tortoise, Bendire's thrasher, common nighthawk, golden eagle, loggerhead shrike, phainopepla, pinyon jay, American badger, desert kit fox, California myotis, canyon bat, pallid bat, Townsend's big-eared bat, Mexican free-tailed bat, big brown bat, Yuma myotis, fringed myotis, small-footed myotis, and desert bighorn sheep. Suitable burrowing owl burrows and complexes were found during protocol-level surveys, though no sign or owls were observed. The implementation of the mitigation measures included for Impact BI-1 would reduce potential impacts to special status wildlife species to *less than significant with mitigation*.

Mojave Desert Tortoise

The Project Area includes portions of and is adjacent to USFWS-designated critical habitat for desert tortoise, and desert tortoise were documented within the study area. Construction of the Project will result in direct impacts to desert tortoise, including the direct, permanent removal of up to approximately 1,559 acres of habitat suitable for desert tortoise. Desert tortoise individuals may be crushed by vehicles and/or equipment. Trenches dug for construction purposes could trap tortoise. Construction and maintenance of the Project also may directly impact desert tortoise if present by killing or injuring individuals, or by crushing burrows containing tortoises and/or eggs.

Indirect impacts to desert tortoise may result from human activities that increase the prevalence of invasive plants and the population of common ravens. Non-native plant seeds may be transported into the area with equipment, especially in tire treads. Non-native vegetation often becomes established in areas where the native vegetation has been disturbed, which may occur in the Project's areas of temporary impacts. Many invasive grasses and forbs are highly flammable, and increase the risk of wildfire if not controlled, and adjacent desert tortoise habitat may be further degraded by invasion of weeds. Common ravens may be encouraged at the study area by food refuse inappropriately disposed of by construction or maintenance workers, and the Project infrastructure may provide additional nest sites. In addition, the Project fences and other Project features would provide additional perching and roosting sites for common ravens. Increases in common ravens may lead to higher rates of raven predation on desert tortoise.

The implementation of Mitigation Measures MM-BI-1.2, MM-BI-1.4 through MM-BI-1.6, MM-BI-1.8 through MM-BI-1.16, MM-BI-1.18, and MM-BI-1.19 would reduce substantial adverse effects, either directly or through habitat modifications, to Mojave desert tortoise to *less than significant with mitigation*.

Desert Bighorn Sheep

Based on the most recent bighorn sheep surveys of the study area, the entirety of the study area was determined to provide suitable habitat for bighorn sheep, including breeding, foraging, and escape activities. Construction of the Project may result in direct impacts to desert bighorn sheep, including the direct, permanent removal of up to approximately 1,559 acres of habitat suitable for desert bighorn sheep. There is potential for desert bighorn sheep to be directly impacted by implementation of the Project through work vehicle collision, and through the permanent removal of forage within the lower intermountain Project elevations, and permanent removal of mountain habitat in the Castle Mountains along the proposed water and powerlines running from south to west-northwest of Hart Peak.

Short-term indirect impacts may also occur to desert bighorn sheep due to construction noise, lighting and a general increase in human activity directly adjacent to occupied habitat that support the full range of

biological needs for the nearby populations, including foraging and breeding. There is also potential for bighorn sheep to be indirectly impacted through temporary disturbance and temporary habitat fragmentation due to the construction of the proposed water and powerlines. Night work may occur during the construction of the utility lines. Night work could indirectly impact bighorn sheep through increased human and vehicle presence and sensory disturbance (e.g., nighttime noise and light) that may result in increased stress or disrupt normal behavioral cycles and contribute to irregular movement out of key habitat areas. Construction would include a combination of extended lower-level noise, but there would also be periods of loud and/or abrupt noise, which can have particularly negative effects on desert bighorn sheep. Startling may cause ewes to briefly abandon lambs or may cause lambs to be knocked off or stumble off of ledges and steep slopes, among other effects, resulting in injury and mortality. This effect might also be considered a possible direct impact. Repeated startling noise events may cause desert bighorn sheep to artificially adjust their use of the mountain habitat to other locations that may not support the key resources needed or preferred by the desert bighorn sheep.

Long-term indirect impacts may occur to desert bighorn sheep, primarily due to Project fencing, additional operational lighting and increased blasting closer to occupied habitat, especially if fencing (e.g., desert tortoise fencing) prevents sheep from accessing water sources or forage sites. There is also potential for bighorn sheep to be indirectly impacted through long-term disturbance due to maintenance of the proposed water and powerlines.

Helicopters would not be used for construction, post-construction work, or monitoring; therefore, no short-term or long-term indirect impacts from helicopter use are anticipated.

The implementation of Mitigation Measures MM-BI-1.2, MM-BI-1.4 through MM-BI-1.6, MM-BI-1.15, MM-BI-1.17 and MM-BI-1.18, and MM-BI-1.20 through MM-BI-1.23 would reduce substantial adverse effects, either directly or through habitat modifications, to desert bighorn sheep to *less than significant with mitigation*.

Desert Kit Fox and American Badger

Desert kit fox and American badger were confirmed to be present within the study area based on the presence of sign and observation of individuals.

Potential impacts to desert kit fox and American badger would be similar to the impacts experienced by fossorial species. Direct impacts include vehicle collisions and equipment and inadvertent entombment from collapsing burrows. Indirect impacts would result from noise and human activity, which may deter kit foxes and badgers from the study area. In addition, the Project will result in the direct, permanent removal of up to approximately 1,559 acres of habitat for desert kit fox and American badger. The implementation of Mitigation Measures MM-BI-1.2, MM-BI-1.4 through MM-BI-1.6, MM-BI-1.15, MM-BI-1.17, MM-BI-1.18, and MM-BI-1.24 would reduce substantial adverse effects, either directly or through habitat modifications, to desert kit fox and American badger to *less than significant with mitigation*.

Burrowing Owl

Protocol-level surveys performed in the utilities ROW identified several suitable burrows but did not observe any individuals or breeding pairs (GLA 2024a). Surveys have not been conducted within the proposed mine expansion area, but suitable habitat is present.

Construction of the Project will result in direct impacts to burrowing owl, including the direct, permanent removal of up to approximately 1,559 acres of habitat suitable habitat. Construction, maintenance and reclamation of the Project may directly impact burrowing owl through vehicle collisions, crushing

overwintering burrows or active nests. Indirect impacts from noise, night lighting, and the increase in human activity may cause burrowing owls to avoid the study area. The implementation of Mitigation Measures MM-BI-1.2, MM-BI-1.4 through MM-BI-1.6, MM-BI-1.15, MM-BI-1.18, MM-BI-1.25, and MM-BI-1.26 would reduce substantial adverse effects, either directly or through habitat modifications to burrowing owl to *less than significant with mitigation*.

Bats

Nine bat species have been detected or observed since initial surveys began in 1994, eight of which were detected in the 2018 and 2019 surveys (Brown-Berry Biological Consulting 2018, 2019). These species include Yuma myotis, fringed myotis, California myotis, small-footed myotis, canyon bat, big brown bat, Townsend's big-eared bat, pallid bat, and Mexican free-tailed bat (Brown-Berry Biological Consulting 2018, 2019; NDOW 2025).

Potential bat roost habitat and foraging locations were surveyed throughout portions of the analysis area, including survey efforts during initial permitting in 1994 (Brown-Berry Biological Consulting 2018). In 2018 and 2019, field surveys were conducted at abandoned mine land (ALM) features within the mine expansion footprint and included internal roost surveys and acoustic surveys. Six BLM sensitive bat species have potential to occur within the analysis area and include big free-tailed bat (*Nyctinomops macrotis*), California leaf-nosed bat (*Macrotus californicus*), hoary bat (*Lasiurus cinereus*), long-legged myotis (*Myotis volans*), spotted bat (*Euderma maculatum*) and Western mastiff bat (*Eumops perotis californicus*).

Temporary exclusion material would be placed over ALM features to prevent disturbance or injury to bats when proposed mining activities are expected to occur within the Project Area. These exclusions would reduce potential impacts to maternity or roosting bats within mine features. Potential impacts to bats are typically related to lighting and Project infrastructure. Nighttime lighting during construction and Project operations could attract insects, which could attract foraging bats. Project infrastructure may pose a collision risk for bats. The implementation of Mitigation Measures MM-BI-1.2, MM-BI-1.6, MM-BI-1.15, MM-BI-1.27, and MM-BI-1.28 would reduce substantial adverse effects, either directly or through habitat modifications, to special status bat species to *less than significant with mitigation*.

Birds

Common and special status bird species forage at the study area and have the potential to nest at the Project Area. Being highly mobile, birds can generally move out of harm’s way and avoid direct injury and harm from grading, construction, and Project operations. Birds can use the study area for nesting, foraging, and roosting.

Suitable nesting habitat is present on-site and within 500 feet of the study area boundaries. Construction performed during the nesting season could directly affect active bird nests through crushing or removal of vegetation supporting or camouflaging nests, or by disturbing adults so much that they abandon the nest. The Project will also result in the loss of up to approximately 1,559 acres of nesting habitat due to permanent vegetation removal. The Project may indirectly impact nesting birds within and adjacent to the study area during construction by making the area less suitable due to increased noise or visual disturbances. Impacts from Project construction may be biologically significant, and many species of North American birds are protected under the MBTA, BGEPA, and/or ESA, and California has several comparable state regulations.

All large artificial structures pose some collision risk to birds in flight; this phenomenon has been most extensively documented for nocturnal migrants (Loss et al. 2014). Most small birds migrate at night and large birds are more likely to migrate during the day, especially raptors; both day and night migration

occur in waterfowl. Non-nesting birds are killed at high rates by collision with buildings, radio towers, and other structures, especially those with lighting (Longcore et al. 2012; Loss et al. 2014). Collision with aboveground wires, including both electrical transmission lines and guy wires on radio towers, is also a significant anthropogenic cause of bird mortality (Longcore et al. 2012; Loss et al. 2014).

Direct Project impacts to birds may result from collision with Project infrastructure of all kinds, including operation and maintenance buildings, utility poles and overhead conductor wire, and fencing. Indirect Project impacts to non-nesting birds would result from vegetation removal and the conversion of native foraging habitat to development.

The implementation of Mitigation Measures MM-BI-1.2, MM-BI-1.6, MM-BI-1.7, MM-BI-1.15, and MM-BI-1.26 through MM-BI-1.28 would reduce substantial adverse effects, either directly or through habitat modifications, to special status bird species to *less than significant with mitigation.*

Invertebrates

Monarch butterfly (*Danaus plexippus*) is a proposed threatened species under the federal ESA and a BLM Sensitive species. Although this species has not been documented within the analysis area, the presence of Mojave milkweed within the Project boundary suggests that suitable summer breeding and foraging habitat may be present (ECORP 2021b). No overwintering populations have been documented within the analysis area.

No impacts to overwintering habitat for monarch butterfly is anticipated. Potential breeding and foraging habitat may occur within areas that contain Mojave milkweed, which was present during previous biological surveys, as well as other potential nectar sources (ECORP 2021b). The Project would impact approximately 1,559 acres of potential monarch butterfly habitat (i.e., scrub and grassland habitats where Mojave milkweed may occur) within the study area. The implementation of Mitigation Measures MM-BI-1.2, MM-BI-1.6, MM-BI-1.7, MM-BI-1.15, and MM-BI-1.29 would reduce substantial adverse effects, either directly or through habitat modifications, to monarch butterfly to *less than significant with mitigation.*

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The Project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	
Mitigation Measures	
MM-BI-1.1	***Special Status Plant Species and Cacti Impact Avoidance and Minimization****. This measure will provide guidance on how Project personnel can avoid unintended impacts to special status plants in the Project Area and provide for the salvage of protected cacti prior to construction. This measure includes the following requirements:* *a. Preconstruction Special Status Plant Species Surveys Measures. Prior to Project initiation, surveys shall be conducted for special status plant species. Surveys shall be conducted by a qualified botanist during the appropriate season (i.e., blooming periods). All special status plants detected during the surveys shall be documented in pre-construction survey reports.* *b. The Project Applicant shall establish Environmentally Sensitive Areas (ESA) around special-status plant populations that have been identified in the Project Area during the preconstruction surveys and/or may be identified in Project disturbance areas during site preparation. Prior to Project ground disturbance, a minimum 100-foot exclusion area shall be established around the plants, which shall be clearly identified and maintained throughout construction to ensure that avoided plants are not inadvertently harmed. ESAs shall be clearly delineated in the field with temporary construction*

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	staking, flagging, and fencing and signs prohibiting movement of the fencing or sediment controls under penalty of work stoppages or compensatory mitigation. *c. Herbicide and Soil Stabilizer Drift Control Measures. Special status plant occurrences within 100 feet of the Project disturbance area shall be protected from herbicide and soil stabilizer drift. The Integrated Weed Management Plan (IWMP) includes measures to avoid chemical drift or residual toxicity to special status plants consistent with guidelines such as those provided by the Nature Conservancy's Global Invasive Species Team (Hillmer and Liedtke 2003), the U.S. Environmental Protection Agency, and the Pesticide Action Network Database.* *d. Erosion and Sediment Control Measures. Erosion and sediment control measures shall not inadvertently impact special status plants (e.g., by using invasive or non–Mojave Desert native plants in seed mixtures, introducing pest plants through contaminated seed or straw, etc.). These measures shall be incorporated in the Comprehensive Drainage, Stormwater, and Sedimentation Control Plan.* *e. Salvage and Translocation Plan Measures. If avoidance of special status plants is not feasible, a salvage and translocation plan shall be implemented to mitigate impacts to special status plants. The salvage and translocation plan will include, at a minimum, the species and locations of plants identified for salvage; criteria for determining whether a species or an individual plant is appropriate for salvage; the appropriate season for salvage; salvage and translocation equipment and methods; details regarding storage of plants or seed banks for each species; location of proposed translocation sites, and detailed site preparation and plant introduction methods for top soil storage, if applicable; a description of maintenance activities; success criteria; and a detailed monitoring program. The salvage and translocation plan shall be reviewed and approved by the County and BLM, in consultation with CDFW and USFWS, prior to Project ground disturbance.*
MM-BI-1.2	***Best Management Practices**. To reduce indirect impacts to special status plants and wildlife that may occur in the Project Area, BMPs shall be implemented prior to and during construction to control dust pollution, prevent discharge of potentially harmful chemicals, and prevent changes in hydrology. BMPs may include the installation of erosion and sedimentation control devices, applying water to control dust, placing drip pans under equipment when not in use, refueling in designated areas, and containing concrete washout properly, among other practices.*
MM-BI-1.3	***Monitoring During Grubbing and Grading**. Designated Biologist (identified in Mitigation Measure MM-BI-1.6) will remain on-site daily while vegetation salvage, grubbing, grading, and other ground-disturbing construction activities are taking place to avoid or minimize take of special status species, and verify personally or have Biological Monitor(s) verify compliance with all impact avoidance and minimization measures, including checking all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protective zones.* *a. Monthly Compliance Inspections. Conduct compliance inspections at a minimum of once per month after clearing, grubbing, and grading are completed and submit a monthly compliance report to CDFW and USFWS during construction.*
MM-BI-1.4	***Worker Environmental Awareness Program (WEAP)**. Prior to Project initiation, the Designated Biologist (identified in Mitigation Measure MM-BI-1.6) shall develop and implement the WEAP, which will be available in English and Spanish. WEAP trainings shall be provided to all Project personnel on-site by the Designated Biologist or biological monitor(s). Alternatively, a recording of the WEAP training will be available for Project personnel to receive the training. Wallet-sized cards summarizing the information shall be provided to all construction and operation and maintenance personnel. The WEAP shall include the following:* *a. An explanation of the sensitivity of the vegetation communities and special status plant and wildlife species within and adjacent to work areas, and proper identification of these resources.*

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	b. Biology and status of the desert tortoise, golden eagle, burrowing owl, other nesting birds, desert bighorn sheep, kit fox, American badger, Monarch butterfly, bats, reptiles, and other sensitive species and measures to reduce potential effects on these species. *c. Actions and reporting procedures to be used if desert tortoise, golden eagle, burrowing owl, other nesting birds, desert bighorn sheep, kit fox, or American badger, Monarch butterfly, bats, reptiles, or other sensitive species are encountered.* *d. An explanation of the function of flagging that designates authorized work areas.* *e. Driving procedures and techniques to reduce mortality of wildlife on roads.* *f. Discussion of the federal ESA and CESA, BGEPA, and MBTA and the consequences of non-compliance with these acts.* *g. The importance of avoiding the introduction of invasive weeds onto the Project Area and surrounding areas.* *h. A discussion of general safety protocols such as hazardous substance spill prevention and containment measures and fire prevention and protection measures.* *i. A review of mitigation requirements that are applicable to their work.*
MM-BI-1.5	***Minimize Vehicle and Equipment Impacts during Operation and Maintenance**. The Project Applicant/owner shall implement measures to minimize the potential for desert tortoise and other wildlife species mortality along access and maintenance roads. These measures shall include:* *a. Speed limits identified in Mitigation Measure MM-BI-1.18 shall continue to be applied during operation and maintenance.* *b. Pedestrian access outside the limits of the designated access/maintenance roads is permitted year-round as long as no ground-disturbing activities take place.* *c. Vehicle traffic and parking shall be confined to designated access roads, and equipment and materials staging areas shall be clearly defined to avoid impacting habitat during the operation phase.* *d. Employees and contractors shall look under vehicles and equipment for the presence of wildlife prior to moving vehicles and equipment. If present, the animal shall be left to move on its own or until it is removed by the Designated Biologist or Biological Monitor. No listed species shall be handled without concurrence from USFWS and/or CDFW, as applicable.*
MM-BI-1.6	***Compliance Monitoring by the Designated Biologist**. The Designated Biologist shall be employed for the period during which ongoing construction and postconstruction monitoring and reporting by an approved biologist is required. Each successive Designated Biologist shall be approved by CDFW. The Designated Biologist shall have the authority to ensure compliance with all measures set forth in the BO and CESA Section 2081 take authorization and with all mitigation measures included herein, and shall be the primary agency contact for the implementation of these measures. The Designated Biologist shall have the authority and responsibility to halt any Project activities that are in violation of the terms of the BO, Section 2081 take authorization, or Project mitigation measures. A list of responsibilities of the Designated Biologist is summarized below.* *a. The Designated Biologist must meet the following minimum qualifications:* *1. Have a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;* *2. Have 3 years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;* *3. Have at least 1 year of field experience with biological resources found in or near the study area;* *4. Meet the current USFWS Authorized Biologist qualifications criteria, demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS;*

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	5. *Possess a CESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise.* 6. *In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the BLM Authorized Officer, in consultation with CDFW and USFWS, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the mitigation measures.* b. *To avoid and minimize effects to biological resources, the Designated Biologist shall:* 1. *The Designated Biologist shall have the authority to ensure compliance with all measures set forth in the BO and CESA Section 2081 take authorization and with all mitigation measures included herein, and shall be the primary agency contact for the implementation of these measures. The Designated Biologist shall have the authority and responsibility to halt any Project activities that are in violation of the terms of the BO, Section 2081 take authorization, or Project mitigation measures. A list of responsibilities of the Designated Biologist is summarized below.* 2. *Notify CDFW and USFWS at least 14 calendar days before initiation of ground disturbing activities.* 3. *Immediately notify the CDFW in writing if the Project Applicant/owner does not comply with any of the mitigation measures or terms of the BO and/or the Section 2081 take authorization including, but not limited to, any actual or anticipated failure to implement such measures within the periods specified.* 4. *Ensure performance of daily compliance inspections during ongoing construction as clearing, grubbing, and grading are completed, and submit a monthly compliance report to CDFW until construction is complete.*
MM-BI-1.7	***Biological Monitoring**. Biological Monitor(s) shall be employed to assist the Designated Biologist in conducting preconstruction surveys and monitoring for vegetation removal, ground disturbance, grading, construction, decommissioning, and restoration activities for the period during which ongoing construction and postconstruction monitoring and reporting by an approved biologist is required. Additionally, biological monitoring shall be performed during any ground disturbance or grading activities that occur during operation and maintenance. The Biological Monitor(s) shall have sufficient education and field experience to understand resident wildlife species biology; have experience conducting desert tortoise, burrowing owl, kit fox, and badger field monitoring; and be able to identify these species and their sign (including active burrows). The Designated Biologist shall submit a resume, at least three references, and contact information for each prospective Biological Monitor to CDFW and USFWS for approval. To avoid and minimize effects on biological resources, the Biological Monitor(s) shall assist the Designated Biologist with the following:* a. *Be present during construction activities that take place in suitable habitat for desert tortoise, burrowing owl, kit fox, badger, or other protected species to prevent or minimize harm or injury to these species. This also includes construction activities in areas without fencing that excludes desert bighorn sheep (see Mitigation Measure MM-BI-1.17).* b. *Activities of the Biological Monitor(s) include, but are not limited to, ensuring compliance with all avoidance and minimization measures; monitoring for desert tortoise, burrowing owl, kit fox, badger, and other protected species; halting construction activity in the area if an individual is found; and checking the staking/flagging of all disturbance areas to be sure that they are intact and that all construction activities are being kept within the staked/flagged limits. If a desert tortoise, burrowing owl, desert bighorn sheep, kit fox, badger, or other protected species is found within a work area, the Biological Monitor(s) shall immediately notify the Designated Biologist, who shall determine measures to be taken to ensure that the individual is not harmed.* c. *Inspect the work area for any special status wildlife species.* d. *Ensure that potential habitats within the construction zone (the designated area where ground disturbance, grading, construction, decommissioning, and restoration activities*

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	occur) are not occupied by special status species (e.g., potential burrows or nests are inspected). *e. In the event of the discovery of a non-listed, special status ground-dwelling animal, recover and relocate the animal to adjacent suitable habitat at least 200 feet from the limits of construction activities.* *f. At the end of each work day, inspect all potential wildlife pitfalls (e.g., trenches, bores, other excavations) for wildlife and remove wildlife as necessary. If the potential pitfalls will not be immediately backfilled following inspection, the Biological Monitor(s) will ensure that the construction crew slopes the ends of the excavation (3:1 slope), provides wildlife escape ramps, or completely and securely covers the excavation to prevent wildlife entry.* *Inspect the site to ensure trash and food-related waste is placed in closed-lid containers and that workers do not feed wildlife. Also inspect the work area each day to ensure that no micro trash (e.g., bolts, screws, etc.) is left behind.*
MM-BI-1.8	***Desert Tortoise Protection**. The Project Applicant/owner shall undertake appropriate measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to desert tortoise. Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling, and other procedures shall be consistent with those described in the USFWS's Desert Tortoise (Mojave Population) Field Manual (USFWS 2009) or more current guidance provided by CDFW and USFWS. The Project Applicant/owner shall also implement all terms and conditions described in the BO to be prepared by USFWS. These measures include, but are not limited to, the following, subject to modification by the terms of incidental take authorizations issued by the USFWS.*
MM-BI-1.9	***Desert Tortoise Exclusion Fence Installation**. To avoid impacts to desert tortoise, permanent desert tortoise exclusion fencing shall be installed along the permanent perimeter security fence and temporarily installed along road corridors during construction. The proposed alignments for the permanent perimeter fence and temporary fencing shall be flagged and surveyed within 24 hours prior to the initiation of fence construction. Clearance surveys of the perimeter fence and temporary fencing areas shall be conducted by the Designated Biologist(s) using techniques outlined in the USFWS's Desert Tortoise (Mojave Population) Field Manual and may be conducted in any season with USFWS and CDFW approval. Biological Monitors may assist the Designated Biologist under his or her supervision. These fence clearance surveys shall provide 100% coverage of all areas to be disturbed and an additional transect along both sides of the fence line covering an area approximately 90 feet wide centered on the fence alignment. Transects shall be no greater than 15 feet apart. All desert tortoise burrows and burrows constructed by other species that might be used by desert tortoise shall be examined to assess occupancy of each burrow by desert tortoise and handled in accordance with the USFWS's Desert Tortoise Field Manual. Any desert tortoise located during fence clearance surveys shall be handled by the Designated Biologist in accordance with the USFWS's 2009 Desert Tortoise (Mojave Population) Field Manual (USFWS 2009).* *a. Timing, Supervision of Fence Installation. The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present.* *b. Fence Material and Installation. The permanent tortoise exclusionary fencing shall be constructed in accordance with the USFWS's Desert Tortoise (Mojave Population) Field Manual (Chapter 8 – Desert Tortoise Exclusion Fence) (USFWS 2009).* *c. Security Gates. Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. The gates may be electronically activated to open and close immediately after the vehicle(s) have entered or exited to prevent the gates from being kept open for long periods of time. Cattle grating designed to safely exclude desert tortoise shall be installed at the gated entries to discourage tortoises from gaining entry.* *d. Fence Inspections. Following installation of the desert tortoise exclusion fencing for both the permanent site fencing and temporary fencing, the fencing shall be regularly inspected. If tortoises were moved out of harm's way during fence construction,*

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	permanent and temporary fencing shall be inspected at least two times per day for the first 7 days to ensure a recently moved tortoise has not been trapped within the fence. Thereafter, permanent fencing shall be inspected monthly and during or within 24 hours following all major rainfall events. Exceptions to inspections during major rainfall events may be made as needed to maintain crew safety. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of permanent site fencing shall occur for the life of the project. Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All damaged temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the area for tortoise.
MM-BI-1.10	***Desert Tortoise Clearance Surveys**. Clearance surveys shall be conducted in accordance with the USFWS Desert Tortoise (Mojave Population) Field Manual (USFWS 2009) (Chapter 6 – Clearance Survey Protocol for the Desert Tortoise – Mojave Population) and shall consist of two surveys covering 100% of the study area by walking transects no more than 15 feet apart. If a desert tortoise is located during the second survey, a third survey shall be conducted. Each separate survey shall be walked in a different direction to allow opposing angles of observation. Clearance surveys of the Project Area may only be conducted when tortoises are most active (April–May or September–October) unless the Project receives approval from CDFW and USFWS. Clearance surveys of linear features may be conducted during any time of the year. Any tortoise located during clearance surveys shall be translocated or relocated and monitored in accordance with the Desert Tortoise Translocation Plan (DTTP) (MM-BI1.13). The Designated Biologist, who may be assisted by the Biological Monitors, shall assess occupancy of each burrow by desert tortoise in accordance with the USFWS Desert Tortoise (Mojave Population) Field Manual (USFWS 2009). All potential desert tortoise burrows located during clearance surveys shall be excavated by hand, tortoises removed, and burrows collapsed or blocked to prevent occupation by desert tortoise in accordance with the DTTP.*
MM-BI-1.11	***Monitoring Following Clearing**. Following the desert tortoise clearance and removal from the Project Area, workers and heavy equipment shall be allowed to enter the Project Area to perform clearing, grubbing, leveling, and trenching activities. A Designated Biologist or Biological Monitor shall be on-site for clearing and grading activities to move tortoises missed during the initial tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the Desert Tortoise Translocation Plan (DTTP).*
MM-BI-1.12	***Reporting**. The Designated Biologist shall record the following information for any desert tortoise handled: a) the locations (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing and whether desert tortoise voided their bladders; c) location moved from and location moved to (using GPS); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled tortoise. Desert tortoise moved from within the Project Area shall be marked and monitored in accordance with the Desert Tortoise Translocation Plan (DTTP). All collected data related to tortoise relocation shall be provided to CDFW and USFWS.*
MM-BI-1.13	***Desert Tortoise Translocation Plan**. The Project Applicant/owner shall develop and implement a USFWS- and CDFW-approved Desert Tortoise Translocation Plan (DTTP). The DTTP, which shall be approved prior to any ground disturbance or tortoise relocation, shall include measures to minimize the potential for repeated translocations of individual desert tortoise. The goals of the DTTP shall be to relocate all desert tortoise from the Project Area to nearby suitable habitat; minimize impacts on resident desert tortoise outside the Project Area; minimize stress, disturbance, and injuries to relocated/translocated tortoises; and assess the success of the translocation effort through monitoring. The DTTP shall follow the Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance (USFWS 2011b) and shall clearly define how it addresses the 11 steps outlined in the guidance. The final DTTP shall be based on the draft DTTP prepared by the Project Applicant/owner and shall include all revisions*

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	deemed necessary by CDFW and USFWS. The final plan will be subject to modification for consistency with the USFWS take authorization and/or BO conservation requirements.
MM-BI-1.14	***Desert Tortoise Compliance Verification**. The Project Applicant/owner shall provide CDFW and USFWS staff with unfettered access to the Project Area and compensation lands under the control of the Project owner and shall otherwise fully cooperate with the CDFW's efforts to verify the Project owner's compliance with, or the effectiveness of, adopted mitigation measures. The Designated Biologist shall:* *a. Notification. Notify CDFW at least 14 calendar days before initiating construction-related ground disturbance activities; immediately notify CDFW in writing if the Project owner is not in compliance with any conditions of certification, including, but not limited to, any actual or anticipated failure to implement mitigation measures within the time periods specified in the conditions of certification.*
MM-BI-1.15	***Notification of Injured or Dead Listed Species**. If an injured or dead federally or state-listed species is detected on or near the Project Area CDFW and USFWS shall be notified immediately by phone. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine whether further actions are required to protect listed species. Written follow-up notification via facsimile or electronic communication shall be submitted to these agencies within 2 calendar days of the incident and include the following information as relevant:* *a. Injured Desert Tortoise. If a desert tortoise is injured as a result of Project-related activities during construction, the Designated Biologist or Biological Monitor(s) shall immediately take it to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the Project Applicant/owner. Following phone notification as required above, CDFW and USFWS shall determine the final disposition of the injured animal, if it recovers. Written notification shall include, at a minimum, the date, time, location, and circumstances of the incident and the name of the facility where the animal was taken.* *b. Desert Tortoise Fatality. If a desert tortoise is killed by Project-related activities during construction, operation and maintenance, or decommissioning, a written report with the same information as an injury report shall be submitted CDFW and USFWS. These desert tortoises shall be salvaged according to federally established guidelines. The Project Applicant/owner shall pay to have the desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident.* *1. Final Listed Species Mitigation Report. The Designated Biologist shall provide CDFW a Final Listed Species Mitigation Report that includes, at a minimum, 1) all available information about Project-related incidental take of listed species; 2) information about other Project impacts to the listed species; 3) construction dates; 4) an assessment of the effectiveness of conditions of certification in minimizing and compensating for Project impacts; 5) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future Projects on the listed species; and 6) any other pertinent information, including the level of take of the listed species associated with the Project.* *2. Stop Work Order. CDFW may issue the Project owner a written stop work order to suspend any activity related to the construction or operation of the Project to prevent or remedy a violation of one or more conditions of certification (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or protected species. The Project owner shall comply with the stop work order immediately upon receipt thereof.*
MM-BI-1.16	***Desert Tortoise Compensatory Mitigation**: To fully mitigate for habitat loss and potential take of desert tortoise, the Project owner shall provide compensatory mitigation consistent with federal requirements, adjusted to reflect the final Project footprint. The acreage for mitigation of desert tortoise habitat will be at a 1:1 ratio. For the purposes of this condition, the Project footprint means all lands disturbed in the construction and operation of the Project, including all*

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Project linears, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long-term habitat for the desert tortoise. To satisfy this condition, the Project owner shall acquire, protect, and transfer 1 acre of desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below. *If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement, and long-term management of compensation lands include all of the following, subject to modification by the terms of incidental take authorizations issued by USFWS and CDFW:* *a. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition in fee title or in easement shall:* *1. Be within the Western Mojave Recovery Unit, or, with prior USFWS and CDFW approval, within the Eastern Mojave Recovery Unit as defined in the 2011 Revised Recovery Plan (USFWS 2011), with potential to contribute to desert tortoise habitat connectivity and build linkages between desert tortoise designated critical habitat, known populations of desert tortoise, and/or other preserve lands;* *2. Provide habitat for desert tortoise with capacity to regenerate naturally when disturbances are removed;* *3. Be prioritized near larger blocks of land that are either already protected or planned for protection, such as Desert Wildlife Management Areas within the Eastern Mojave Recovery Unit (or nearby portions of the Western Mojave Recovery Unit with prior USFWS and CDFW approval) or which could feasibly be protected long term by a public resource agency or a non-governmental organization dedicated to habitat preservation;* *4. Be connected to lands with desert tortoise habitat equal to or better quality than the Project Area, ideally with populations that are stable, recovering, or likely to recover;* *5. Not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;* *6. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;* *7. Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and* *8. Have water and mineral rights included as part of the acquisition, unless BLM and CDFW, in consultation with CDFW and USFWS, agree in writing to the acceptability of the land.* *b. Review and Approval of Compensation Lands Prior to Acquisition. The Project owner shall submit a formal acquisition proposal to BLM, CDFW, and USFWS describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for desert tortoise in relation to the criteria listed above. Approval from the BLM and CDFW in consultation with USFWS shall be required for acquisition of all compensatory mitigation parcels.*

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MM-BI-1.17	***Fence Design and Site Permeability**. Permanent site fencing installed around the Project should be designed to allow for the passage of wildlife, to the extent feasible given the need for the fencing to prevent ingress by desert tortoise. Depending on the fencing material, the fence line should have gaps of approximately 4 to 6 inches accessible to wildlife other than desert tortoise and the fencing material should be knuckled back to create a smooth edge. Alternate designs may also be constructed with prior written approval from CDFW and USFWS. Regardless, the Project shall ensure that any such fence meets existing specifications that have been developed to preclude accidental entanglement of desert bighorn sheep, deer, and other animals.* *Fencing should be sufficient to allow desert bighorn sheep passage and access to existing guzzlers located throughout the Project area, but exclude them from active mining areas Gaps of approximately four to six inches should occur at the bottom of the fence to allow small wildlife, mesocarnivores, coyote and American badger to pass under. Care should be taken when connecting the fences to make sure that they are physically connected or directly abut one another such that wildlife can't pass through or get stuck between them. The ultimate fencing plans should be reviewed by CDFW for final approval prior to site disturbance activities.*
MM-BI-1.18	***Speed Limits.** Speed limits along all access roads outside of permanent desert tortoise fencing shall not exceed 15 mph to minimize dust during construction activities. Speed limits within permanent desert tortoise fencing shall not exceed 25 mph to minimize impacts during operation and maintenance. Nighttime vehicle traffic associated with Project activities shall be kept to a minimum volume and speed (maximum of 15 mph) to prevent mortality of nocturnal wildlife species.*
MM-BI-1.19	***Desert Tortoise Biological Opinion**. Prior to ground disturbance, the Project Applicant shall obtain take authorization for desert tortoise pursuant to Section 7 of the ESA (16 USC 1536). Mitigation shall include avoidance, minimization, and compensatory measures sufficient to achieve no net loss of habitat value and ensure impacts are reduced to a less-than-significant level, consistent with USFWS requirements. Measures shall include, at a minimum:* *a. The Project Applicant will provide compensatory mitigation at a proposed ratio of 1:1, or other USFWS-determined ratio, for permanent impacts to approximately 1,559 acres of habitat for desert tortoise.* *b. The Project Applicant will provide compensatory mitigation at a proposed ratio of 5:1, or other USFWS-determined ratio, and a ratio consistent with the DRECP, for permanent impacts to approximately 118 acres of critical habitat for desert tortoise.*
MM-BI-1.20	***Desert Bighorn Sheep Compensatory Mitigation**. If Desert Bighorn Sheep Compensatory Mitigation is adhered to and occurs within approximately 1 km of desert bighorn sheep-occupied or CDFW-identified/modeled desert bighorn sheep habitat, then no additional compensatory habitat mitigation would be required as the acquired habitat would also satisfy the foraging needs of desert bighorn sheep. However, if the mitigation lands acquired for desert bighorn sheep do not satisfy this requirement, then separate compensatory mitigation for loss of desert bighorn sheep foraging habitat at a 1:1 ratio meeting all of the other requirements (i.e., requirements for acquisition, initial improvement, and long-term management of compensation lands) and protections afforded under Desert Bighorn Sheep Compensatory Mitigation will be required.*
MM-BI-1.21	***Desert Bighorn Sheep Mitigation and Monitoring Plan.** Prior to site disturbance, the Project will prepare a desert bighorn sheep mitigation and monitoring plan. The plan will be approved by CDFW and BLM. This plan will require monitoring of fencing effectiveness, water sources, and all other implemented mitigation measures for a minimum of 8 years with an annual monitoring report provided to CDFW by January 31, and a final report covering the entire monitoring period (i.e., at least 5 years) by January 31st of the final year. Components of this requirement may be modified if already covered by other monitoring efforts. The plan will include the methods for monitoring, identify what is being monitored, identify the goals of the measures, methods for determining the effectiveness of the measures, and remedial triggers and measures if the mitigation does not meet the goals.*

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MM-BI-1.22	***Limited Operating Period.*** *Noises greater than 85 A-weighted decibels (dBA) maximum sound level (Lmax) will not be allowed between December 1 and June 30. If loud work must occur, even briefly, then the Project must get CDFW concurrence that the desert bighorn sheep lambing period is done or verify, in coordination with CDFW, that there are no desert bighorn sheep on a facing slope within a distance that would be expected to be subject to an 85 dBA Lmax sound level. If the Project believes that they may need to ultimately perform loud work during the lambing period, then they shall coordinate with CDFW early (i.e., ideally as soon as possible, but minimally before the lambing period) to determine how much additional desert bighorn sheep-specific monitoring will be needed for CDFW to evaluate whether the request is feasible.*
MM-BI-1.23	***Work Boot Decontamination.*** *All construction personnel will be trained on the importance of and procedures for decontaminating boots to prevent transmission of disease from domesticated sheep and goats to desert bighorn sheep. In addition, all quarry workers who have potential contact with domesticated sheep and/or goats (for example at farms, fairs, etc.) will be identified and shall decontaminate work boots prior to entering the Project Area. Decontamination shall involve scrubbing the soles of work boots with a 10% bleach solution to remove all organic matter and kill pathogens. Alternatively, footwear may be changed to ensure that potentially contaminated footwear does not enter any quarry area.*
MM-BI-1.24	***American Badger and Desert Kit Fox Protection****. To avoid direct impacts to American badger and desert kit fox, preconstruction surveys shall be conducted for these species concurrently with the desert tortoise surveys. Surveys shall be conducted as described below:* *a. Biological Monitors shall perform preconstruction surveys for badger and kit fox dens in the Project disturbance area, including a 20-foot swath beyond the disturbed area, utility corridors, and access roads. If dens are detected, each den shall be classified as inactive, potentially active, or definitely active.* *b. Inactive dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers or kit fox.* *c. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for 3 consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance.* *d. If no tracks are observed in the tracking medium or no photos of the target species are captured after 3 consecutive nights, the den shall be excavated and backfilled by hand.* *e. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den.* *f. If an active natal den is detected on the site, the BLM Authorized Officer and CDFW shall be contacted within 24 hours to determine the appropriate course of action to minimize the potential for harm or mortality. The course of action would depend on the age of the pups, location of the den on the site (e.g., is the den in a central area or in a perimeter location), status of the perimeter site fence (completed or not), and the pending construction activities proposed near the den. A 500-foot no-disturbance buffer shall be maintained around active natal dens.* *g. The following measures are required to reduce the likelihood of distemper transmission:* *1. No pets shall be allowed on the site prior to or during construction, with the possible exception of kit fox scat detection dogs during preconstruction surveys, and then only with prior CDFW approval;* *2. Any kit fox hazing activities that include the use of animal repellents such as coyote urine must be cleared through CDFW prior to use; and* *3. Any documented kit fox mortality shall be reported to CDFW and the BLM Authorized Officer within 24 hours of identification. If a dead kit fox is*

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	observed, it shall be retained and protected from scavengers until CDFW determines whether the collection of necropsy samples is justified.
MM-BI-1.25	***Burrowing Owl Protection Measures**. No more than 14 days prior to the start of ground disturbance, a preconstruction survey for burrowing owls in conformance with the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012) shall be completed within suitable habitat at every work area and within a 20200-m buffer zone of each work area. Work areas will be resurveyed following periods of inactivity of 2 weeks or more. The Project Applicant/owner shall submit the results of the preconstruction survey to BLM's Authorized Officer and CDFW. The Project Applicant/owner shall also submit evidence of conformance with federal and state regulations regarding the protection of the burrowing owl by demonstrating compliance with the following:* a. *Unless otherwise authorized by BLM and CDFW, a 650-foot (200-meter) buffer within which no activity will be permissible shall be maintained between project activities and nesting burrowing owls during the nesting season. This protected area shall remain in effect until August 31 or at CDFW's discretion and, based on monitoring evidence, until the young owls are foraging independently. No disturbance shall occur within 160 feet (50 m) of occupied burrows during the non-breeding season (September 1–January 31). Eviction outside the nesting season may be permitted pending evaluation of eviction plans (developed in accordance with CDFW protocol for burrowing owls) by CDFW and receipt of formal written approval from CDFW authorizing the eviction. A Burrowing Owl Mitigation and Monitoring Plan following the guidance in the CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012) shall be submitted to the BLM's Authorized Officer and CDFW for review and approval prior to passive relocation.* b. *In the event that an occupied burrow cannot be avoided, passive relocation of owls may be implemented prior to construction activities only if a qualified biologist approved by BLM and CDFW verifies through non-invasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Eviction outside the nesting season may be permitted pending evaluation of eviction plans (developed in accordance with BLM protocol for burrowing owls) by CDFW and receipt of formal written approval from BLM authorizing the eviction. A Burrowing Owl Mitigation and Monitoring Plan shall be submitted to the BLM and CDFW for review and approval prior to passive relocation.* c. *If accidental take (disturbance, injury, or death of owls) occurs, the Designated Biologist shall be notified immediately.* d. *Impacts to active burrowing owl territories shall be mitigated at a 1:1 ratio through a combination of off-site habitat compensation and/or off-site restoration of disturbed habitat capable of supporting this species. The acquisition of occupied habitat off-site shall be in an area where energy facilities would not pose a mortality risk. Acquisition of habitat shall be consistent with the CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012). The preserved habitat shall be occupied by burrowing owl and shall be of superior or similar habitat quality to the impacted areas in terms of soil features, extent of disturbance, habitat structure, and dominant species composition, as determined by a qualified ornithologist. The site shall be approved by BLM and CDFW. Land shall be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. The off-site area to be preserved can coincide with other off-site mitigation lands, with the approval of CDFW.* e. *The Designated Biologist or Biological Monitor(s) shall remain on-site until all vegetation is cleared and, at a minimum, conduct site and fence inspections on a regular (monthly) schedule throughout construction to ensure that the project is in compliance with the mitigation measures.* f. *Employees and contractors shall look under vehicles and equipment for the presence of wildlife prior to moving vehicles and equipment. If present, the animal shall be left to move on its own or until it is removed by the approved biologist. No listed species shall be handled without concurrence from USFWS and/or CDFW, as applicable.*

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MM-BI-1.26	***Avoid Disturbance to Nesting Birds**. Vegetation clearing shall take place outside of the general avian breeding season (February 15–September 1), when feasible. If vegetation clearing cannot occur outside the avian breeding season, the Designated Biologist/Biological Monitor(s) shall conduct a preconstruction survey for nesting birds no more than 3 days prior to vegetation clearing. If no active nests are found, clearing can proceed. If active nests are found, no clearing shall be allowed within 150 feet (for passerines) to 1,500 feet (for raptors) of the active nests until the Designated Biologist/Biological Monitor(s) determines the nest is no longer active or the nest fails. Based on observation of the individual birds' tolerance to human activity, this buffer may be reduced by a qualified biologist. Encroachment into the buffer may occur at the discretion of a qualified biologist.* *The Designated Biologist/Biological Monitor(s) shall submit the results of the preconstruction nesting bird surveys to BLM, USFWS, and CDFW. Following agency coordination, the size of the next buffer may be adjusted based upon the magnitude of proposed activities and observed sensitivity of the bird to disturbance.*
MM-BI-1.27	***Lighting Specifications to Minimize Bird and Bat Impacts**. The Project Applicant/owner shall minimize night lighting during construction by using shielded directional lighting that is pointed downward, thereby avoiding illumination to adjacent natural areas and the night sky.*
MM-BI-1.28	***Bird and Bat Conservation Strategy (BBCS).** The Project Applicant/owner shall develop a BBCS to address project impacts to special status avian and bat species. The Project Applicant/owner shall submit the BBCS to the CDFW and USFWS for review and approval prior to initiation of project construction. The BBCS shall include an assessment of potential avian and bat impacts from lighting, noise, collision, electrocution, and attraction of ravens, as applicable; measures to mitigate for the effects to birds; a description of general avoidance and minimization measures applicable during construction, operation and maintenance, and postconstruction to include nest management and postconstruction monitoring; a description of the reporting requirements and reporting schedule and duration; and the adaptive management strategy. A raven management element shall be included in the BBCS or provided separately that includes measures such as storage of garbage in raven-proof containers and installation of anti-nesting devices on structures where raven nests could be built.*
MM BI-1.29	***Milkweed Avoidance.** Prior to construction, all individual milkweed plants will be surveyed and mapped. Identified plants will be examined for the presence of monarch butterfly eggs or larvae and those that have monarch butterfly presence will be flagged for re-survey and avoidance. Individual plants without eggs and larvae will be removed. Flagged plants will be re-surveyed and removed when no eggs or larvae are present.*
Impacts Following Mitigation	
Implementation of Mitigation Measures MM-BI-1.1 through MM-BI-1.29 would ensure that substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS, would be less than significant with mitigation.	

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

IMPACT BI-2: THE PROJECT WOULD HAVE A SUBSTANTIAL ADVERSE EFFECT ON ANY RIPARIAN HABITAT OR OTHER SENSITIVE NATURAL COMMUNITY IDENTIFIED IN LOCAL OR REGIONAL PLANS, POLICIES, REGULATIONS OR BY THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE OR U.S. FISH AND WILDLIFE SERVICE. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

Vegetation communities with a State Rank of 1, 2, or 3 are considered sensitive by CDFW. Based on the mapped alliance-level communities, Joshua Tree Woodland (State Rank S3.2) is considered a sensitive vegetation community. In addition, the Desert Wash System community was mapped as State Rank S1 within temporary disturbance areas and is therefore also considered sensitive and associated vegetation may be considered "riparian" by CDFW (Table 4.4-10). A total of 567.78 acres of CDFW-sensitive vegetation will be permanently removed by implementation of the Project. In addition, a total of 80.70 acres of CDFW-sensitive vegetation will be temporarily impacted by implementation of the Project.

Table 4.4-10. Impacts to CDFW-Sensitive Vegetation Communities in the Project Area

Vegetation Community	Global Rank*	State Rank†	Acres within the Project Area‡
Permanent, Proposed			
Desert Wash System (*Hymenoclea salsola* Desert Wash Shrubland Alliance)	G4	S4	37.21
Joshua Tree (*Yucca brevifolia* Woodland Alliance)	G4	S3.2	567.78
Permanent, Proposed Subtotal			*604.99*
Temporary, Proposed			
Desert Wash System (*Hymenoclea salsola* Desert Wash Shrubland Alliance)	G4	S1	9.17
Joshua Tree (*Yucca brevifolia* Woodland Alliance)	G4	S3.2	71.53
Temporary, Proposed Subtotal			*80.70*
Acreage Total			**685.69**

* Global Rank: Indicates the vegetation alliance's rarity and threat globally.

† State Rank: Indicates the vegetation alliance's rarity and threat in California.

‡ Proposed Project indicates the proposed expansion area.

Direct impacts include the permanent and temporary removal of sensitive natural communities. Although permanent impacts to vegetation within the Project Area may occur, vegetation would be crushed rather than bladed when feasible during initial ground disturbance and construction. Removed vegetation would be disposed of and/or salvaged according to BLM specifications. Vegetated areas that are temporarily disturbed would be reseeded and revegetated during reclamation to facilitate restoration of the original vegetation communities.

However, implementation of the mitigation measures included for Impact BI-2 would minimize potential impacts to sensitive natural communities resulting in impacts to *less than significant with mitigation.*

Impact BI-2	
The Project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	
Mitigation Measures	
MM-BI-2.1	***Vegetation Best Management Practices.*** *The Project Applicant shall undertake the following measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to vegetation resources:* *a. Limit Area of Disturbance. The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to construction activities in consultation with the Designated Biologist. Spoils and topsoil shall be stockpiled in disturbed areas within the Project Area. Parking areas and staging and disposal site locations shall similarly be located in areas without native vegetation or special status species habitat. All disturbances, project vehicles, and equipment shall be confined to the flagged areas.* *b. Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.* *c. Minimize Traffic Impacts. Vehicular traffic during project construction and operation shall be confined to existing routes of travel to and from the Project Area, and cross-country vehicle and equipment use outside designated work areas shall be prohibited.* *d. Monitor During Construction. In areas that have not been fenced with desert tortoise exclusion fencing and cleared, a Designated Biologist shall be present at the construction site during all project construction activities that have potential to disturb soil, vegetation, and wildlife. The Designated Biologist or Biological Monitor shall review areas immediately ahead of equipment during brushing and grading activities.* *e. Minimize Impacts of Staging Areas. Staging areas for construction on the Project Area shall be within the area that has been fenced with desert tortoise exclusion fencing. For construction activities outside of the Project Area, access roads, pulling sites, and storage and parking areas shall be designed, utilized, and maintained with the goal of avoiding or minimizing impacts to native plant communities and sensitive biological resources. Staging areas outside of the Project Area shall maintain a minimal disturbance footprint, avoid jurisdictional wetlands, and avoid disturbance to native plant communities whenever possible.* *f. Avoid Use of Toxic Substances. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to plants and wildlife.* *g. Implement Erosion Control Measures. All erosion control measures promoted by the Lahontan Regional Water Quality Control Board (RWQCB) in its Project Guidelines for Erosion Control (Board Order No R6T-2003-0-04 Attachment G) (Lahontan RWQCB 2003) shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter "waters of the State." Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into drainages. All disturbed soils and roads within the Project Area shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes toward a drainage shall be stabilized to reduce erosion potential. To avoid impacts associated with generation of fugitive dust, surface application of water would be employed during construction and operation and maintenance activities.*

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MM-BI-2.2	***Revegetation of Temporarily Disturbed Areas**. The Project Applicant shall prepare and implement a Temporary Disturbance Revegetation Plan to restore all areas subject to temporary disturbance to pre-project grade and conditions. The plan shall be submitted to the BLM and CDFW for review and approval prior to the issuance of any County permits and/or authorizations, and at least 30 days prior to the start of ground-disturbing activities. Temporarily disturbed areas within the Project Area include, but are not limited to, all proposed locations for linear facilities, temporary access roads, berms, construction work temporary lay-down areas, and construction equipment staging areas. The Temporary Disturbance Revegetation Plan shall include a description of topsoil salvage and seeding techniques and a monitoring and reporting plan, and plan to achieve the following performance standards by the end of monitoring year 3:* *a. At temporarily disturbed areas treated by vegetation trimming, drive and crush, or similar disturbance, at least 80% of the species observed within the area will be native species that naturally occur in local desert scrub habitats.* *b. At temporarily disturbed areas treated by grading or scarification, which have resulted in loss of native soils and rootstocks, at least 60% of the species observed within the area will be native species that naturally occur in local desert scrub habitats.* *c. Cover and density of nonnative plant species within the temporarily disturbed areas will be no more than twice their cover and density in comparable adjacent lands that have not been disturbed by the project.* *d. Soil stability and potential for erosion or dust source will be comparable to adjacent lands that have not been disturbed by the project.*
MM-BI-2.3	***Integrated Weed Management Plan**. This measure provides further detail and clarifies requirements for the Project Applicant's draft Integrated Weed Management Plan (IWMP). Prior to the issuance of any County permits and/or authorizations, and at least 30 days prior to the start of ground-disturbing activities, the Project Applicant shall prepare, circulate to BLM for comment and approval, and then implement an IWMP that meets the approval of BLM's Authorized Officer and conforms to the CDCA Plan to prevent the spread of existing invasive species and the introduction of new invasive species to the Project Area. The plan shall be consistent with BLM's Record of Decision for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007) and the 2008-2012 National Invasive Species Management Plan (National Invasive Species Council 2008). The IWMP shall include, at a minimum, specific management objectives and measures for each target invasive species, baseline conditions, weed risk assessment, measures (both preventative and containment/control) to prevent/limit the introduction and spread of invasive species, monitoring and surveying methods, and reporting requirements. The BLM-approved IWMP shall include:* *a. Preventative measures to prevent the spread of weeds into new habitats, such as equipment inspections, use of weed-free erosion control materials and soils, and a mandatory site training element that includes weed management;* *b. Weed containment and control measures such as the removal of invasive species primarily via mechanical means, with the use of herbicides restricted to BLM-policies and approved usage (e.g., BLM's Herbicide Use Standard Operating Procedures provided in Appendix B of the Record of Decision for the Final Vegetation Treatments Using Herbicides Programmatic Environmental Impact Statement (BLM 2007);* *c. Monitoring and reporting standards annually during construction and following the completion of construction to describe trends in weed distribution and direct weed management measures, and;* *d. Reporting of monitoring and management efforts in annual reports and a final monitoring report completed at the end of 3 years of postconstruction monitoring. Copies of these reports will be provided to BLM for review and comment. BLM will use the results of these reports to determine whether any additional monitoring or control measures are necessary. Weed control will be ongoing on the Project Area for the life of the project, but plan success will be determined by BLM after the 3 years of operations monitoring through the reporting and review process. Success criteria will be defined as having no more than a 10% increase in a weed species or in overall weed cover in any part of the Project Area.*

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MM-BI-2.4	***Reclamation Plan.*** *At least 12 months prior to project closure, the Project Applicant shall prepare a Reclamation Plan to restore the site's topography and hydrology to a relatively natural condition and to establish native vegetation communities within the Project Area. The Reclamation Plan shall include a cost estimate for implementing the proposed reclamation activities, and shall cover the estimated cost as though BLM were to contract with a third party to decommission the project and reclaim the Project Area. The plan shall be subject to review and revisions from the BLM Authorized Officer in consultation with USFWS and CDFW.*
MM-BI-2.5	***Preconstruction Vegetation Salvage****. Prior to the issuance of any County permits and/or authorizations, and at least 30 days prior to the start of ground-disturbing activities, the Project Applicant shall provide a draft Vegetation Resources Management Plan detailing the methods for the salvage and transplantation of target succulent species covered under the CDNPA. The plan shall be submitted to CDFW and the BLM for review and approval at least 30 days prior to the start of ground-disturbing activities and shall include, at a minimum, the following elements:* *a. Soil baseline characterization. The characterization shall be presented to CDFW prior to ground disturbance and shall include:* *1. Profile description of three representative pedons. (A pedon is the smallest three-dimensional sampling unit displaying the full range of characteristics of a particular soil and typically occupies an area ranging from about 1 to 10 square yards.)* *2. Characterization of surface application (desert pavement or biological soil crust present). Description of biological soil crust shall include major groups of organisms identified at the site (filamentous cyanobacteria, other cyanobacteria, mosses, lichens, liverworts) and the characteristics by which they were identified (see item b, below).* *3. Documentation of soil macro-invertebrates (that is, presence of ants, termites, and other significant macro-invertebrates).* *i. Bulk density, along with a reference to a generally accepted method for making the determination.* *ii. Fertility (nutrient status, electrical conductivity, sodium adsorption ratio), along with methods by which composite samples were collected and the laboratory methods used to determine these properties. Composite samples will contain equal contributions from at least six randomly located collection points within the soil donor area.* *iii. Organic matter content and total carbon and nitrogen content, along with a reference to generally accepted methods for making the determinations.* *4. Soil compaction shall be determined by measurement of bulk density in grams per cubic centimeter (or numerically equivalent units). Bulk density may be determined by any of several standard measurements, but the method used must be referenced to a widely accepted soil methodology publication. In no case shall soil be compacted to a bulk density that exceeds 1.6 grams per cubic centimeter except where no planting is to take place. Penetrometer measurements are not a substitute for bulk density measurements.* *Once characterized, the top 3 inches of topsoil shall be salvaged from the areas where traditional grading will be used per the following protocol, and stored within the Project Area. The upper 0.25 inch may be collected separately to preserve biological crust organisms. Topsoil may not be distinguishable from subsoils by color or organic content at the time of salvage but is characterized as the layer that contains fine roots during the active growing season. Soil shall be collected, transported, and formed into stockpiles only while the soil is dry. The vegetation in place at or immediately before topsoil collection shall be healthy native vegetation with less than 15% absolute cover of exotic weed growth. Soil occupied by vegetation of high plant diversity shall be given priority over soil occupied by low-diversity native vegetation. Soil may be collected with a front loader, bulldozer, or scraper and*

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transported to storage areas by front loader, dump truck, or scraper. The equipment transporting the soil may not travel across the stockpile more than the minimum number of times required to build the soil to its intended depth. The depth of the stockpiles shall not exceed 4 feet in the case of sandy loam or loamy sand soils. Topsoil stockpiles shall be kept dry and covered if no vegetation is introduced. If native vegetation is grown on the stockpiles to increase seeds and soil organisms, no cover is required. Artificial watering may be provided at the Project Applicant's option.

Stockpiled topsoil shall be used to grow native plant species for the purpose of producing native seeds and building beneficial microorganisms in the soil volume. All native plant species encountered in the vegetation surveys shall be included in the growing rotation on the stockpiles. Most growing space needs to be dedicated to the species for which the most seeds shall be required. At least half by area of the growing area during each growing cycle shall be dedicated to plant species known to be good mycorrhizal host plants. Members of the families Chenopodiaceae and Amaranthaceae should be limited to less than half the area of the soil stockpiles, with the other half occupied by known mycorrhizal host plant species.

b. *Biological Soil Crust Characterization and Preservation. Biological soil crust is defined here as a mixture of organisms that occupy and protect the surface of the soil in most desert ecosystems. The organisms often include filamentous and non-filamentous cyanobacteria, mosses, lichens, liverworts, and fungi. Biological soil crust shall be preserved by collecting the upper 0.25 inch of topsoil from areas to be graded. The Project Applicant and/or its contractor(s) shall collect from specific areas known to contain biological crust organisms or collect upper soil from the entire area to be graded. Collections shall emphasize filamentous cyanobacteria, but other cyanobacteria, mosses, lichens, and liverworts are also considered valuable contributors to biological soil crust and important in protecting against erosion and reducing weed invasion, and shall be collected as a secondary priority. Soil surface crust shall be air dried and stored dry in a shaded location in containers that allow air movement, such as loose-weave fabric bags. In no case may the stored crust be subject to wetting or direct sunlight during storage. All containers shall be clearly labeled with date and location of original collection; name and contact information of persons responsible for identifying suitable material to collect; and the persons who collected, stored, and maintained collections. Biological soil crust shall be re-applied at the time of replanting by crumbling the stored material and broadcasting it on the surface of the soil. Approximately 10% of the stored material shall be broadcast on topsoil storage areas among plants being grown for seed and soil microorganisms. When the growing cycle progresses to new planting, the soil supporting biological crust shall be collected and stored by the same methods prescribed for collections from the original soil, in clearly labeled bags or other suitable containers.*

c. *Succulent Transplant. The majority of the succulent plants located in areas to be dragged, rolled, or spot graded, or above mowing height, shall be salvaged and transplanted into a nursery area. The Succulent Transplant portion of the Vegetation Resources Management Plan shall include, at a minimum:*

    1. *The location of target plants on the Project Area;*
    2. *Criteria for determining which individual plants are appropriate for salvage;*
    3. *The proposed methods for salvage, propagation, transport, and planting;*
    4. *Procedures for identifying target species during preconstruction clearance surveys;*
    5. *Considerations for storing salvaged plants or pre-planting requirements; and*
    6. *Suggested transplantation sites.*

Succulents to be transplanted into the nursery area shall be placed in their same compass orientation as they were in their original location. The salvaged plants also shall be kept in long-term soil stockpiles, along with natives grown on the stockpiles, to keep the soil biota fresh.

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Succulent transplants done during preparation of the Project Area shall be fully documented and serve as trials of methods to be used during plant salvage on the Project Area. Records shall be maintained for each transplanted specimen including species; height; number of branches or pads as appropriate; donor location by UTM coordinates; methods used to remove, transport, and store the plant; period of temporary storage; location; facility description; planting medium used for storage; and frequency of watering during storage. Records shall be kept at the time of planting at the storage area, and quarterly thereafter during storage until such time as each plant is placed in the field or dies. Transplanted individuals shall be maintained for 3 years, including removal of invasive species and irrigation (if necessary), as well as monitored for 3 years to determine the percentage of surviving plants each year and to adjust maintenance activities using an adaptive management approach. *d. Seed Collection. Seed collection shall be carried out within the ROW grant area and within 10 miles of the boundaries of the Project Area on similar terrain, soil, exposure, slope and elevation to the Project Area. Seed collection guidelines shall conform to all laws and regulations in effect at the time of collection. Seed collection shall include all plant species known to be removed from the facility. If insufficient seeds are provided by "seed farming" and collection within 10 miles of the site, CDFW may approve collection from a greater distance provided other environmental factors at the collection site are good matches to the Project Area. Collected seed may be used to seed salvaged topsoil piles during the construction phase and after decommissioning related to restoring the Project Area.*
Impacts Following Mitigation
Implementation of Mitigation Measures MM-BI-2.1 through MM-BI-2.5 would ensure that substantial adverse effects on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS, would be less than significant with mitigation.

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

IMPACT BI-3: THE PROJECT WOULD HAVE A SUBSTANTIAL ADVERSE EFFECT ON FEDERALLY PROTECTED WETLANDS AS DEFINED BY SECTION 404 OF THE CLEAN WATER ACT (INCLUDING, BUT NOT LIMITED TO, MARSH, VERNAL POOL, COASTAL, ETC.) THROUGH DIRECT REMOVAL, FILLING, HYDROLOGICAL INTERRUPTION, OR OTHER MEANS. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

Pending resolution of the utility corridor AJD (actively under review by the USACE), aquatic resources mapped within the Project Area are considered non-wetland waters (Glenn Lukos 2022). Therefore, no impacts to federally protected wetlands would occur due to the Project. Permanent impacts to non-wetland waters may result from fill along portions of the utility alignment (California portion of the Project Area) and the expansion of the mine site (entirely in California). Temporary impacts to non-wetland waters may result from installation of the buried water line and the aerial electric line (for California portion of site). No permanent impacts to aquatic resources would result from the installation of the electric line, as aquatic resources would be spanned.

The Project may result in 23.07 acres (155,379 linear feet) of permanent impacts and 1.48 acres (9,941 linear feet) of temporary impacts to CDFW-regulated streambed and 18.54 acres (124,925 linear feet) of permanent impacts and 1.07 acres (7,184 linear feet) of temporary impacts to California State Water Board-regulated streambed (Table 4.4-11). Of the impacts to CDFW resources, 4.53 acres of permanent impacts and 0.41 acre of temporary impacts are associated with CDFW-associated riparian habitat and the remainder are associated with CDFW streambed. Implementation of the mitigation measures included for Impact BI-3 would minimize potential impacts to sensitive natural communities resulting in impacts to *less than significant with mitigation.*

Table 4.4-11. Potentially Regulated Aquatic Resources

	CDFW Jurisdiction				RWQCB Jurisdiction			
	Temporary		Permanent		Temporary		Permanent	
Project Location	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet
Mine	0	0	23.07	155,379	0	0	18.54	124,925
Powerline	1.48	9,941	0	0	1.07	7,184	0	0
Total	**1.48**	**9,941**	**23.07**	**155,379**	**1.07**	**7,184**	**18.54**	**124,925**

Impact BI-3

The Project would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Mitigation Measures

MM-BI-3.1 *The Project Proponent shall implement the following measures to avoid, minimize, and mitigate for direct and indirect impacts to waters of the State and to satisfy requirements of California Fish and Game Code Sections 1602 and the Porter Cologne Water Quality Control Act. Details and final acreages will be determined through permitting process with the CDFW and RWQCB.*

a. *The Project Proponent shall notify CDFW and RWQCB of unavoidable impacts to potentially jurisdictional aquatic resources through their respective SAA and Waste Discharge Requirements programs.*

b. *To compensate for the loss of aquatic resources resulting from project impacts by implementing off-site mitigation measures that ensure no net loss of aquatic functions and values, the Project Applicant shall implement Mitigation Measure MM-BI-3.1.b.1 OR MM-BI-3.1.b.2:*

   1. *The Project Proponent shall purchase mitigation credits from a CDFW-approved mitigation bank that provides credits for similar aquatic resource types and functions as those ephemeral drainages impacted by the project. Mitigation credits shall include at least 9.75 acres of state waters (including 9.33 acres of RWQCB-regulated areas) or comparable area based on actual project impacts to ephemeral drainages (depending upon the actual project impacts) that meet 1:1 mitigation ratios for no net loss. The number of credits purchased shall be sufficient to fully offset the loss of aquatic resource functions and values. Mitigation for impacts to state waters shall occur as close to the project site as possible. Temporary impacts to 1.68 acres of CDFW-regulated areas (including 1.31 acres of RWQCB-regulated areas) will be replaced through a revegetation plan, or through purchasing mitigation credits, whichever is determined appropriate during permitting process.*

      OR

Impact BI-3
2. *The Project Proponent shall fund or undertake habitat creation or restoration activities at an off-site location. This will include restoring aquatic habitats to ensure the replacement of lost functions and values. The habitat creation or restoration site shall be selected based on its ecological suitability to ensure 1:1 mitigation ratios and no net loss. The Project Proponent shall develop and implement a monitoring plan to assess the success of the off-site mitigation over time. The monitoring plan report shall detail the success criteria including relative plant cover and timeframe in which the success criteria will be achieved. Reports detailing the progress and effectiveness of the mitigation efforts shall be prepared annually until the defined success criteria has been met. If monitoring indicates that the mitigation is not achieving the desired outcomes, the Project Proponent shall implement adaptive management strategies. Adaptive management strategies may include additional habitat enhancements, further monitoring, or other corrective actions.*
c. *The Project Applicant shall comply with the following conditions to protect drainages which are not designated to be impacted by the project in and near the project site by implementing the following best management practices:*
1. *The Project Proponent shall minimize road building, construction activities and vegetation clearing within ephemeral drainages to the extent feasible.*
2. *The Project Proponent shall not allow water containing mud, silt, or other pollutants from project activities to enter ephemeral drainages or be placed in locations that may be subjected to high storm flows.*
3. *Spoil sites shall be at least 50 feet from drainages or locations that may be subjected to high storm flows, where spoils might be washed back into drainages.*
4. *Any substances that could be hazardous to vegetation or wildlife resources, resulting from project-related activities, shall be prevented from contaminating the soil and/or entering drainages. These materials, placed within or where they may enter a drainage by the Project Proponent or any party working under contract or with the permission of the Project Proponent, shall be removed immediately.*
5. *No equipment maintenance shall occur within 100 feet of any drainage where petroleum products or other pollutants from equipment may enter these areas under any flow.*
Impacts Following Mitigation
Implementation of Mitigation Measure MM-BI-3.1 would reduce substantial adverse effects on federally protected wetlands as defined by Section 404 of the Clean Water Act to less than significant with mitigation.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

IMPACT BI-4: THE PROJECT WOULD INTERFERE SUBSTANTIALLY WITH THE MOVEMENT OF ANY NATIVE RESIDENT OR MIGRATORY FISH OR WILDLIFE SPECIES OR WITH ESTABLISHED NATIVE RESIDENT OR MIGRATORY WILDLIFE CORRIDORS, OR IMPEDE THE USE OF NATIVE WILDLIFE NURSERY SITES. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

No identified wildlife corridors exist within the project property, nor is any part of the project property within a wildlife connectivity area as mapped in the *California Essential Habitat Connectivity Project*

(Spencer et al. 2010). The northeast corner of the Mine Boundary intersects with a defined Linkage Design Landfacet Union for the California Desert Linkage Network, as does a portion of the utility ROW where it aligns north-northeast near Hart Peak as defined in *A Linkage Network for the California Deserts* (Penrod et al. 2012). The Project Area is also located within the Mojave National Preserve Lease Cost Corridor Landscape Block for bighorn sheep. Further, the Project Area is within and adjacent a Potential Habitat Core for bighorn sheep (Penrod et al.). Finally, the Project Area is also located within the following CDFW-defined habitat connectivity areas as mapped in BIOS:

- Terrestrial Connectivity - ACE [ds2734]
- Limited Connectivity Opportunity - Areas where land use may limit options for providing connectivity (e.g., agriculture, urban) or no connectivity importance has been identified in models. Includes lakes.
- Connections with Implementation Flexibility - These are other areas that have been identified as having connectivity importance, but have not been identified as channelized areas, species corridors, or habitat linkages at this time. This may change with future changes in surrounding land use or regional specific information.

Washes present in the study area are landscape features that are the most likely to represent wildlife movement corridors locally; however, there is no evidence that they provide avenues for concentrations of wildlife. Migratory birds passing through the area may utilize the site for breeding, nesting, foraging, or transient rest sites. However, there are no significant stopover sites in the vicinity of the project, as there are no water bodies with abundant resources to attract concentrations of birds.

Based on available wildlife movement information and the presence of suitable habitat in and around the Project Area, mule deer (*Odocoileus hemionus*) may move through and adjacent to the proposed Project expansion areas, including areas near the proposed utility ROW. As a result, Project activities could temporarily and indirectly affect local mule deer movement and use of the area during preconstruction, construction, operations and maintenance, and reclamation.

In addition, based on CDFW's *October 2019 Desert Bighorn Sheep Helicopter Surveys* memorandum (CDFW 2019) five desert bighorn sheep groups ranging in size from 0-2 to 16-26 were observed in the Castle and Piute Mountains. This data suggests that bighorn sheep groups travel through and adjacent the proposed Project expansion areas, particularly near/within the proposed utility ROW. Thus, the Project may substantially impact migratory corridors for resident and/or migratory desert bighorn sheep, and could impede the use of bighorn sheep nursery sites. This disturbance would be indirect and temporary during preconstruction, construction, operations and maintenance and reclamation. Implementation of Mitigation Measures MM-BI-1.4, MM-BI-1.5, MM-BI-1.6, MM-BI-1.17, MM-BI-1.20, and MM-BI-1.21 for Impact BI-1 would minimize potential impacts to sensitive natural communities resulting in impacts to wildlife corridors to *less than significant with mitigation.*

Impact BI-4
The Project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
Mitigation Measures
Implement Mitigation Measures MM-BI-1.4, MM-BI-1.5, MM-BI-1.6, MM-BI-1.17, MM-BI-1.20, and MM-BI-1.21.

Impact BI-4
Impacts Following Mitigation
Implementation of Mitigation Measures MM-BI-1.4, MM-BI-1.5, MM-BI-1.6, MM-BI-1.17, MM-BI-1.20, and MM-BI-1.21 would ensure the Project does not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, and the impacts would be less than significant with mitigation.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

IMPACT BI-5: THE PROJECT WOULD NOT CONFLICT WITH ANY LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES, SUCH AS A TREE PRESERVATION POLICY OR ORDINANCE. *(LESS THAN SIGNIFICANT)*

The Project Area is located in San Bernardino County, so it is subject to local regulations and policies, as outlined in the County Policy Plan. Implementation of the APMs and mitigation measures previously identified would ensure consistency with the County Policy Plan in order to avoid or minimize impacts to biological resources. The Project would not conflict with any local policies or ordinances protecting biological resources; therefore, impacts would be *less than significant*.

Impact BI-5
The Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
Mitigation Measures
Mitigation is not necessary. Impact BI-5 would be less than significant.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

IMPACT BI-6: THE PROJECT WOULD NOT CONFLICT WITH THE PROVISIONS OF AN ADOPTED HABITAT CONSERVATION PLAN, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN. *(LESS THAN SIGNIFICANT)*

The CDCA spans over 25 million acres, of which 12 million acres are public lands managed by the BLM. The purpose of the CDCA Plan is to manage conservation within these areas while also allowing renewable energy development and land management. One of the key components of the CDCA Plan is the DRECP.

The Project falls within the Castle Mountains and Ivanpah ACECs. ACECs are areas where the BLM has determined that important historical, cultural, scenic, fish and wildlife, or other natural resources occur, and special protection is warranted. In addition, ACECs may be designated for safety in areas with natural hazards.

The Castle Mountains ACEC encompasses 3,270 acres of BLM managed lands and is located south of the California/Nevada border and is surrounded by the Mojave National Preserve (BLM 2016b). It was designated to protect habitat quality, sensitive species and sensitive natural communities, landscape connectivity, provide compatible public uses, and conserve cultural values. It overlaps with the Castle Mountain ERMA.

The Ivanpah ACEC encompasses 78,190 acres of BLM managed lands, and is located north of I 15 and is bounded by the Mojave National Preserve to the north and west (BLM 2016c). It was designated to manage the area in accordance with the Desert Tortoise Recovery Plan, protect habitat quality, sensitive species, landscape connectivity, provide compatible public uses, and protect sensitive cultural resources. It overlaps with the Ivanpah Valley SRMA and Shadow Valley ERMA.

The Castle Mountains and Ivanpah ACECs were designated as part of the DRECP LUPA in September 2016 (BLM 2016a). Therefore, the Project would need to conform to the Conservation and Management Actions outlined in the DRECP that would otherwise apply to activities within the ACECs. Both the Castle Mountain and Ivanpah ACECs only intersect portions of the utility lines, while the Ivanpah ACEC intersects only with the utility components of the Phase II Expansion. The proposed temporary and permanent disturbances for the utility ROWs are located adjacent to existing roads; along SR164, all disturbances are proposed entirely within the existing CDOT ROW. Disturbance within each ACEC in the DRECP is limited to a specified percentage of the total ACEC area, as described in CMA ACEC-DIST-1 (BLM 2016a). The Castle Mountains ACEC encompasses 3,270 acres, the Ivanpah ACEC encompasses 78,190 acres, and the proposed disturbance for the Project in California is 1,833.38 acres (271.68 of which is currently developed). The Project only intersects with a small portion of the utility components of the Phase II Expansion, therefore the 1% disturbance caps for the Castle Mountains and Ivanpah ACECs would not be exceeded by the Project. Additionally, the Phase II Expansion does not directly conflict with the applicable RMPs or management plans for ACECs. There are no other federal, state, or local designated conservation areas within or directly adjacent to the Project Area. There is USFWS-designated critical habitat for desert tortoise within 10 miles of the Project Area (USFWS 2025). However, there are no USFWS-authorized habitat conservation plans, and no CDFW natural community conservation plans within 10 miles of the Project Area. Therefore, the Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan and the impact is *less than significant*.

Impact BI-6
The Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.
Mitigation Measures
Mitigation is not necessary. Impact BI-6 would be less than significant.

4.4.6 Cumulative Impacts

IMPACT BI-7: THE PROJECT WOULD CONTRIBUTE TO CUMULATIVE IMPACTS RELATED TO BIOLOGICAL RESOURCES. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

Cumulative impacts for a project would be significant if the incremental effects of the individual project are considerable when combined with the effects of past projects, other current projects, and probable future projects. A Cumulative Development Scenario Project List (Table 3-1) is provided in Chapter 3, *Environmental Setting*, of this EIR. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period.

As the County experiences growth in development projects, broad-scale impacts to biological resources are also increasing. San Bernardino County has an extremely diverse mineral wealth and is home to thousands of mining operations across its territory (San Bernardino County 2026). Currently, the nearest mining project is the Desert Antimony Drill project, which is approximately 13 miles northwest of the Project.

Several special status plants and wildlife species occupy the Project Area and the surrounding area. Implementation of the Project could impact special status species that use the study area, such as the desert tortoise and bighorn sheep, along with more common species that support the ecosystem. Habitats within the Project Area sustain a diverse range of insects, plants, reptiles, and small birds that serve as a crucial prey base for raptors and terrestrial wildlife. In addition, as detailed in the literature review and database search, the region is home to a variety of special status species, most of which are anticipated to utilize the Project Area intermittently, if at all. When considered together with other existing or proposed projects in the County, impacts to special status species due to primarily habitat loss, and wildlife corridor impairment may be cumulatively considerable.

Caltrans, CDFW, and Brightline West have entered into an agreement to design and construct three wildlife overcrossings across I-15 and the future Brightline West high-speed rail system connecting Las Vegas and Southern California (Caltrans 2023). These dedicated overcrossings would provide a sustainable and safe path for wildlife over the existing northbound and southbound highway lanes and the future high-speed rail system to be built within the median (Caltrans 2023). CDFW has identified three priority locations for the wildlife overcrossing, all in San Bernardino County (Caltrans 2023). These overcrossings will be built near Zzyzx Road, near Mountain Pass and near Rasor Road, spanning the entire width of I-15 including the Brightline West rail line (Caltrans 2023). The Cady Wildlife Crossing is approximately 70 miles southwest of the Project, the Soda Mountain Wildlife Crossing is approximately 58 miles southwest of the Project, and the Clark Mountain Wildlife Crossing is approximately 16 miles west of the Project (CDFW 2023). Beyond the three wildlife overcrossings, the Brightline West project will maintain or improve more than 600 culverts and large-scale undercrossings under the I-15 corridor that exist today (Caltrans 2023). The project also will restore and install desert tortoise fencing and directional wildlife exclusionary fencing at the same locations as the wildlife crossings (Caltrans 2023). The proposed Brightline overcrossings would reduce project impacts associated with temporary and/or permanent disruptions to local wildlife movement, most notably impacts that pertain to desert bighorn sheep.

All the proposed APMs and mitigation measures would reduce cumulative impacts to vegetation communities, common species, special status wildlife, habitat for special status wildlife, special status plants, and surface waters to less than significant. The measures listed are intended to reduce project impacts, both permanent and temporary, direct and indirect, for all wildlife and vegetation, and special status plant and wildlife species, including their habitats, to less than significant. These measures are also intended to reduce impacts to sensitive vegetation communities to less than significant. Other projects in the vicinity of the proposed Project would be required to comply with all federal, state, and local regulations related to biological resources, and to develop BMPs and mitigation measures as necessary. Thus, the implementation of the above-listed APMs and mitigation measures would reduce the Project's cumulative impacts to vegetation communities, common species, special status wildlife, habitat for special status wildlife, special status plants, and surface waters to *less than significant with mitigation*.

Impact BI-7 (Cumulative Impacts)
The Project would not contribute to any cumulative impacts related to biological resources.
Mitigation Measures
Implement Mitigation Measures MM-BI-1.1 through MM-BI-1.29, MM-BI-2.1 through MM-BI-2.5, and MM-BI-3.1.
Impacts Following Mitigation
Implementation of Mitigation Measures MM-BI-1.1 through MM-BI-1.29, MM-BI-2.1 through MM-BI-2.5, and MM-BI-3.1, would ensure that cumulative impacts related to biological resources would be less than significant with mitigation.

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4.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

This section of the EIR analyzes potential impacts related to cultural and tribal cultural resources resulting from the implementation of the proposed Project. The analysis is based on a review of existing resources, technical data, and applicable laws, regulations, and guidelines, including the significance criteria set forth in Appendix G of the State CEQA Guidelines, as well as technical reports prepared for the proposed Project.

4.5.1 Existing Conditions

The information presented below on the natural and cultural setting of the Project Area is taken from SWCA's *Class III Results for the California Portion of the Castle Mountain Mine Phase II Expansion Project, San Bernardino County, California* (Winslow et al. 2025).

4.5.1.1 Natural Setting

Located within the Mojave Desert, the Project Area falls within the larger Basin and Range physiographic province, which is composed of often-isolated mountain ranges rising abruptly from the broad alluvium desert. These ranges, which include the Castle, McCullough, and New York Mountains, are mostly tilted fault blocks strongly modified by erosion. The broad intermontane basins are deep, alluvium-filled structural depressions that are divided into the piedmont slope and basin floor. Characteristic landforms of the piedmont slope include mountain valley fans, alluvial fans, pediments, and fan piedmonts, whereas the basin floors consist of alluvial pans and playas. The rough, barren, steep, and strongly dissected hills and mountain ranges generally trend in a northwest–southeast alignment. Surface drainage tends to be internal, with most runoff flowing inward from all directions into dry playas. Drainage is generally in the form of rapid runoff following occasional cloudbursts. Playas may be covered by water from this runoff for as long as two months per year.

The region typically receives trace levels of precipitation and is characterized by low humidity, wide diurnal temperature ranges (>77 degrees Fahrenheit), high average temperatures, and strong seasonal winds. The annual precipitation cycle shows distinctive cool and warm seasonal patterning. Cool season precipitation is the most important and extensive source of rain in the desert region. Rainfall is widespread and of relatively long duration during the cool season. Warm-season precipitation results largely from convection in the form of thunderstorms. Cool season precipitation (October–April) averages four inches per year, whereas warm season precipitation (July–October) averages about 1.3 inches per year, with violent convectional downpours causing flash floods and deep landform incisions.

Flora is homogeneous, with variation in species abundance and presence reflecting topography, annual precipitation, and the presence or absence of surface water. There are four primary plant associations: Mojave creosote scrub, desert saltbush scrub, Mojave wash scrub, and blackbrush scrub. These generalized floristic groups include complexes of shrubs, grasses, herbs, succulents, and semi-succulents that supplied Indigenous populations with a range of food, raw materials, medicinal plants, and ritual products. The most characteristic plants are the Joshua tree (*Yucca brevifolia*) and creosote bush (*Larrea tridentata*), both of which are long-lived and thrive in coarse, well-drained, nonsaline soils on basin floors, alluvial fans, and upland slopes at elevations up to 1,800 meters above mean sea level. Species diversity within this community increases with topographic variability, as conditioned by community age, ground surface stability, soil density and rock content, and annual precipitation and temperature. Elsewhere, halophytic perennials like saltbush (*Atriplex* spp.) and bursage (*Ambrosia dumosa*) favor highly salty or alkaline soils on playas, in sinks, or near seeps, while xerophytes occupy drier soils and exhibit lower salt tolerances. Blackbrush scrub thrives at intermediate elevations

(approximately 1,200–1,800 meters above mean sea level) and precipitation thresholds and has few floral associates relative to creosote scrub and sagebrush (*Artemisia* spp.) shrub-steppe of the Great Basin.

Fauna within the region are diverse and include several animals that archaeological records indicate were exploited by prehistoric populations. The most prevalent are reptiles, rodents, small carnivores, and birds. Reptiles like desert tortoise (*Gopherus agassizii*), western banded gecko (*Coleonyx variegatus*), common chuckwalla (*Sauromalus obesus*), desert iguana (*Dipsosaurus dorsalis*), coachwhip (*Masticophis flagellum*), Mojave rattlesnake (*Crotalus scutulatus*), and sidewinder (*C. cerastes*); lagomorphs such as black-tailed jackrabbit (*Lepus californicus*) and desert cottontail (*Sylvilagus audubonii*); rodents such as antelope ground squirrel (*Ammospermophilus leucurus*), desert kangaroo rat (*Dipodomys deserti*), and desert woodrat (*Neotoma lepida*); and carnivores like coyote (*Canis latrans*) and kit fox (*Vulpes macrotis*) are by far the most common. Various species of migratory waterfowl (e.g., *Anas* spp.) are occasional visitors to episodic playa lakes as well.

4.5.1.2 Cultural Setting

PREHISTORY

Over the past decades, a number of sequences covering this region have been developed by a number of regional researchers. The earliest sequences developed were conceived strictly as units of time, but cultural development and lifeways have inevitably been drawn. Whereas later works are best characterized as cultural research overviews, restatements, and syntheses of those early sequences have resulted in some confusion by applying new terminologies to well-established sequences. Other factors contributing to the conflicting sequences include the diversity of lifeways in the region and the lack of stratified and adequately dated sites in the region.

In defining prehistory in the Mojave Desert today, archaeological resources fall within what archaeologists have defined as the Great Basin and Mojave Desert cultural areas, with prehistoric human occupation currently thought to have begun prior to13,800 calibrated years before present (cal. BP) and continuing until historic contact in the early nineteenth century. To facilitate the discussion of prehistory, the archaeological record has been divided into the five periods listed below, which are broadly correlated with major climatic and environmental intervals and associated shifts in technology, settlement, and subsistence.

1. Pleistocene-Holocene Transition (PHT) (ca. 15,000–10,000 cal. BP)
2. Early Holocene (EH) (ca. 10,000–8000 cal. BP)
3. Middle Holocene (MH) (ca. 8000–4000 cal. BP)
4. Neopluvial (NP) (ca. 4000–2000 cal. BP)
5. Late Holocene (LH) (ca. 2000 cal. BP–present)

The five periods discussed below reflect notable intervals of climatic and ecological change that are broadly associated with important shifts in prehistoric technology and settlement and subsistence patterns. These periods do not represent homogeneous climatic periods or specific cultures or adaptations; rather, they are intended to provide a general chronology of the human record that is correlated with regional climatic and environmental records.

Pleistocene-Holocene Transition (ca. 15,000–10,000 cal. BP)

The period from 15,000 to 10,000 cal. BP is commonly referred to as the Paleoindian or Paleoarchaic period, as well as the Terminal Pleistocene/EH. The earliest records of human presence in the Great Basin

and Mojave Desert date to the late Pleistocene (sometime after ca. 15,000 cal. BP) during a period of rapidly warming temperatures and drying of "pluvial" lakes. As a consequence of a limited archaeological record of this time, the nature of human occupation during this earliest period is poorly understood; however, a few thousand years later and roughly coeval with the return of more glacial-like conditions of the Younger Dryas (ca. 13,000–11,600 cal. BP), there is a marked increase in the archaeological record along the shores of now-extinct Pleistocene lakes and river systems.

Early PHT sites are defined primarily by the presence of regionally unique lanceolate and stemmed biface forms, known generally as the "Western Stemmed Tradition." This tradition includes various forms or styles, including Haskett, Cougar Mountain, Parman, Lake Mojave, and Silver Lake, as well as a range of more difficult to categorize forms that are generically labeled as Great Basin Stemmed Series (GBSS). Great Basin Fluted Series (GBFS) forms and Clovis-like artifacts are also occasionally found in the same settings as GBSS sites, and are considered part of this early lithic tradition. The exact chronological relationship between GBFS and GBSS forms is unclear, but evidence indicates that GBSS may predate or is minimally contemporaneous with GBFS forms in the Great Basin, Mojave Desert, and Columbia Plateau. Although GBSS projectile points and PHT sites are quite common in western areas of the Mojave Desert, Early period archaeology is relatively limited in the northeastern Mojave Desert.

PHT assemblages are characterized as containing an array of large projectile points and formal flaked tools and rarely containing ground stone, hearths, or cooking features (e.g., fire-cracked rock [FCR] features). Early tool traditions are contemporaneous with traditions known elsewhere in North America as the Paleoindian period. Similar to the Paleoindian period of the Great Plains and greater American Southwest, Great Basin, and Mojave Desert, PHT assemblages contain tool kits that appear to be oriented toward large game hunting. Because of limited subsistence data demonstrating that PHT foragers focused primarily on large game then megafauna, the term "Paleoindian" is not widely applied. Though limited, the direct subsistence evidence that is available indicates that PHT foragers had a relatively broad diet that included seeds, fish, and small and medium-sized mammals.

Early Holocene (ca. 10,000–8000 cal. BP)

Although it is generally agreed that the EH was wetter than today, the EH period is characterized as a time of continued warming and drying environmental conditions. Much of the debate centers on the question of temperature. Paleoenvironmental estimates based on global circulation models suggest warmer and wetter conditions during the EH. These conditions promoted the development of sagebrush steppe vegetation on valley floors instead of the more xeric saltbush scrub communities of today. Cold-adapted fauna and montane conifers also persisted in some lowland settings, in areas where they cannot survive today. The gradual nature of these changes perhaps explains why GBSS and crescent forms persisted through the EH period.

EH assemblages are distinguished from those of the PHT by the appearance of smaller and lighter side-notched projectile points and the marked increases in milling and cooking-stone technology. Although shifts toward the use of smaller atlatl darts during the EH mark an important technological change, the increased use of these technologies is associated with large game hunting and is unlikely linked with significant changes in EH diet and subsistence strategies. Conversely, the notable increases in the presence of ground stone technology, particularly "heavy-duty" milling equipment, and other plant processing tools and features (e.g., FCR features) undoubtedly mark significant shifts in diet and subsistence strategies during the EH.

EH land use patterns were also different from those of the PHT. EH populations increasingly used high-elevation camps, a pattern unlike in earlier PHT foragers who are thought to have kept primarily to the valleys and lowland settings. Subsistence data from EH sites reflect a broad-spectrum diet with the

increased use of low-ranked, high-processing-cost plant resources like grass seeds, pickleweed (*Sarcocornia* spp.), and prickly pear (*Opuntia* spp.), as well as the frequent hunting of large and small game.

Middle Holocene (ca. 8000–4000 cal. BP)

The MH environmental conditions have long been characterized as atypically hot and dry. As might be expected during a period of extreme conditions, the archaeological record is relatively limited. The MH archaeological record indicates continued use of lake margins and marsh/wetland ecosystems and increased use of dunes where economically important grass seeds can be found, as well as upland areas. MH archaeological assemblages are not dramatically different from those of the EH. Northern Side-Notched, Gatecliff, and Elko Series projectile points are generally assigned to this period. The most common diagnostic of this period is the bifurcated-stem Pinto projectile point. Other items of material culture include scrapers, drills, and flat and concave milling stones.

Subsistence evidence dating to the MH are similar to other Holocene-age sites, indicating the use of high-processing-cost plant resources, such as prickly pear, pickleweed, and Indian ricegrass (A*chnatherum hymenoides*), and MH faunal assemblages are dominated by antelope (*Bovidae* spp.) and jackrabbits (*Lepus* spp.). A correlation between sites with Pinto projectile points and perennial springs indicates that settlement may have shifted toward these locations in response to increasingly arid conditions during the MH.

Neopluvial (ca. 4000–2000 cal. BP)

The end of the dry MH is marked by the onset of the NP, which was the coolest and wettest period since the PHT. This period coincides with the return and/or expansion of meadows and wetland habitats. Although NP fluctuations toward cooler and wetter conditions had an ameliorating effect on the environment and resulted in significant changes in vegetation communities, these changes were far less dramatic than those that occurred during the PHT.

Current archaeological understanding posits steady population growth during the NP, but site distribution and assemblage composition do not drastically vary from preceding periods. NP foragers pursued a variety of resources in mountains, foothills, and valley bottoms—everything from bighorn sheep (*Ovis* spp.) to grasshoppers (*Caelifera* spp.). Occupation of upland habitats continued, with increased use of the uplands as overwintering locations. This upland inhabitance is thought to reflect increased population pressures, increased use of pinyon nuts in some areas, or a shift in settlement patterns with campsites closer to food caches. NP archaeological assemblages show a modest increase in milling stone technologies and increased use of "heavy-duty" milling equipment, in particular.

During the NP, an increase in the types and functions of open-air sites is also seen in the archaeological record. Evidence indicates amplified use of task-specific sites, such as hunting camps, processing camps, and lithic reduction stations, in addition to long- and short-term camps. These types of sites are commonly associated with a shift toward "logistical foraging." Increased use of upland and semi-upland settings, greater reliance on stored foods, and the presence of more task-specific sites toward the end of the NP might be evidence of an overall reduction in residential mobility. Increases in artifacts, sites, and radiocarbon dates are thought to reflect notable human population growth during the NP.

The onset of the wetter conditions in the NP period is marked by the initial adoption of horticulture and an increase in ceremonial sites, with evidence indicating the use of caves and rockshelters for ceremonial purposes, as well as the presence of nonutilitarian artifacts such as painted dart fragments and split-twig figurines. Split-twig figurines, considered an influence from the greater American Southwest, occur in deposits dating from 3800 to 3000 BP in Newberry Cave in the central Mojave Desert. In general, exotic,

and ritual-type artifacts increase in occurrence during the NP, as do elaborate pictographs, such as those found in the Coso Range, which are believed to be associated with hunting rituals. Additionally, notable during this time is evidence for long-distance trade, with marine shells identified at sites in eastern California.

Late Holocene (ca. 2000 cal. BP–Present)

The LH was warmer and drier than the preceding NP, and major vegetation associations reached their modern distribution and content during this interval. Climatic and environmental conditions are characterized as relatively unstable, including several periods of decreasing precipitation and at least one significant cooling event. Available evidence indicates an extended period of increased summer precipitation and relatively warm winters ca. 1500 to 500 cal. BP, followed by a major cooling trend, or the Little Ice Age between ca. 500 and 200 cal. BP. Significant changes in subsistence and technology occur during the LH. Although hunting and gathering was practiced throughout the interval up to the time of historic contact, during the LH we see the practice of horticulture as expressed through the distinctive Ancestral Puebloan culture group in the southern Great Basin and the greater American Southwest.

Late Holocene Period Hunter-Gatherers

As noted above, hunting and gathering societies persisted during the LH period, albeit practicing settlement and subsistence strategies closer to the collector and harvester end of the foraging spectrum. In some cases, hunting and gathering populations began to live in relatively large villages in long-used localities and occupied numerous short- and long-term open-air sites in lake-edge/marsh settings. During the LH period, winter base camps were established in places previously unoccupied or previously only used as temporary field camps.

The adoption of bow and arrow weaponry and ceramics occurred among hunting and gathering populations during the LH. Rosegate Series projectile points, which mark the transition to the adoption of bow and arrow technology, are commonly identified in LH sites. Some argue for a reduced emphasis on large game animals and an increased emphasis on plant resources (including green cone pine nut procurement) during the LH. Storage technologies and features increase in size and abundance during the LH, including ceramic storage containers and lined storage pits.

The onset of the Little Ice Age (ca. 500 cal. BP) may have brought an end to horticulture in the eastern Great Basin; however, during the Ethnohistoric period (as discussed below), many Nuwuvi (Southern Paiute) were farming when Euro-Americans arrived ca. the mid-1750s. An understudied and interesting question is whether Nuwuvi farming reflects a readoption of agriculture at some unknown date or a continuation of farming from Ancestral Puebloan to historic contact. Nonetheless, post-ca. 500 years ago, most groups practiced subsistence and foraging strategies similar to those practiced throughout most of the Holocene. Archaeological sites that post-date 500 cal. BP are numerous and occur in a variety of environmental settings, including extensive use of upland and lowland locales. The quantity and distribution of sites and temporary task-specific locations or stations during this period suggest the use of extensive logistical forays to hunt and gather an array of food resources in a broad range of habitats.

Late LH assemblages are often associated with Desert Side-notched and Cottonwood Triangular projectile points and, in the eastern and southern Great Basin, with the presence of Intermountain Brown Ware ceramics. Regional archaeologists have long linked Desert Side-notched projectile points and Intermountain Brown Ware pottery with the arrival of ancestral populations of Numic-speaking inhabitants of the region. The problems associated with linking the archaeological record with a language or ethnic group are discussed below.

Numic Expansion

Numic is one of four northern Uto-Aztecan language groups spoken by groups inhabiting vast areas of the Intermountain West and Mexico. All four languages emerged from an ancient diaspora, from an unknown location, of the ancestral Uto-Aztecan speech community. Numic covers much of the Intermountain West, including nearly the entire Great Basin, Mojave Desert, southern Columbia Plateau, much of southern Idaho, western Wyoming, and Colorado Plateau and extending through the southern Great Plains into northeastern Texas. When and how Numic speakers came to occupy such a vast area, as well as when the so-called Numic expansion occurred, have been topics of research and extended debate for over a century.

The Numic language family is a group of closely related language dialects. The three dialect groups of Numic are Mono-Paviotso or Western Numic; Koso and Shoshone-Comanche or Central Numic; and Kawaiisu-Ute (including Southern Paiute) or Southern Numic. All three languages are represented in a geographically small area near the southwest corner of the Great Basin, from which they fan out over a vast area to the north and east. Although linguists and anthropologists have thoroughly defined the geographic distribution of the different Numic languages, questions related to the location of the original Numic homeland and when and how the Numic expansion occurred remain unresolved. However, to account for the lack of linguistic divergence over such a large area and accommodate for the geographic clustering of all three Numic groups, as well as the related language family (Takic and Tubatulabal) in the southwestern portion of the Great Basin and southern California, the conventional narrative has been that the Numic homeland is somewhere in southeastern California. Linguists have placed the time of the Numic expansion at about 1,000 years ago.

ETHNOHISTORIC PERIOD (CA. AD 1750–PRESENT)

Native American groups with Tribal territories that fall within the Project Area include the Nuwuvi (Southern Paiute), Nüw (Chemehuevi), and Aha Makhav (Mojave). Descriptions of each of these groups are provided below.

Nuwuvi (Southern Paiute) and Nüw (Chemehuevi)

Historically, the Numic-speaking Southern Paiute (Nuwuvi) and Chemehuevi (Nüw) occupied a crescentic region extending from southeastern Utah and northeastern Arizona, southwestward to the deserts of California and Nevada. The Las Vegas subgroup inhabited a relatively large area extending into the Mojave Desert, including the Spring Mountain Range and roughly bounded on the west by the Black Mountains and on the north by the Avawatz Mountains. The Chemehuevi, now recognized as a separate Tribe, are generally classified by anthropologists as the southwesternmost branch of the Southern Paiute. Prehistorically, their territory was arranged in a patchwork of semisedentary use areas where available water sources formed bases to which resource collection was tied seasonally. Broader boundaries were conceptualized to extend to flowing water bodies, encompassing the internal use areas. These internal areas were woven together by a complex system of trails. With their knowledge of the landscape, Southern Paiute and Chemehuevi managed and modified the environment to ensure their survival within their traditional homelands.

At the time of historic contact with a Spanish expedition (1776), the Southern Paiute occupied the plateaus and canyon lands of southern Utah, northern Arizona, and the desert regions of southern Nevada and southern California. It is thought that prior to the nineteenth century, the Chemehuevi were largely located in the area north and west of the Colorado River. By the early to mid-nineteenth century, the Chemehuevi had settled along the Colorado River in territory traditionally held by the Mojave people, which included the Chemehuevi Valley, Cottonwood Island, and Palo Verde Valley.

Settlement and Subsistence

Southern Paiute subsistence regime was based on a seasonal round with a primary emphasis on the women's collection of plant foods. Where agriculture was practiced, this fit into the seasonal rounds of hunting and gathering, thereby accommodating both subsistence practices. Southern Paiutes capitalized on the array of wild food resources available in the various environmental zones they inhabited. Wild plant foods included grass seeds, yucca, pine nuts, agave, mesquite, prickly pear, acorns, wild grapes, and roots.

The seasonal round typically began at aggregation camps or villages during the winter. Subsistence during this period was based on the use of stored resources, primarily pine nuts and mesquite. Toward the end of the winter/early spring, when the stored resources were depleted, less palatable foods were sought, such as juniper berries, Joshua tree and agave shoots, and caterpillars and locust. Winter villages dispersed, with the single-family groups spreading across the landscape in search of resources. As spring progressed, various seeds became available, and cactus fruits were sought on the valley floors.

If agriculture was practiced, fields were prepared. Seasonal harvesting of resources procured from different elevations and within a variety of valley locations gave balance to an otherwise spontaneous collection of edible products and necessary cultural materials.

Before contact, the Southern Paiutes lived in small family units; the unmarried men lived by themselves. At contact, these groups lived by a water source that they considered to be their own. People continued to live in wickiups and rockshelters well into the twentieth century. Winter houses were dome shaped and tall enough to stand upright inside. To construct them, the ground was first cleared and then post holes (four or more) for the uprights were dug along the walls for the mesquite supports. If the houses were smaller, a central post forked at the top would be set in the ground. Additional posts of willow were leaned against the central dome of whichever type of wood. A covering of cane, arrow weed, or grass, depending on what was at hand, was added for the walls, and perhaps some mud was placed along the base. The doorway faced east, and the house had a central fire pit. A cliffrose bark mat often covered the doorway, and additional mats were put on the floor. The house would be used for two or three years or longer, being renewed only periodically. It was occupied in winter, with people moving in shortly after harvesting their crops.

Additional structures that might characterize a site included a semicircular brush-walled shade with four upright posts, used primarily in the spring and summer, and the storage platforms. There is no mention of excavated storage pits at valley sites, although this technique was used in the mountains and in caves.

Summer activities included large game hunting, a subsistence effort reserved for men. Large game included deer, bighorn sheep, and, in some areas, antelope. For the Chemehuevi, a man inherited a song from his father, which defined his kinship and territorial hunting rights. These songs constituted oral maps of the Chemehuevi domain. Hunting territories were extensive given the locally impoverished natural environment.

Small game, obtained by all members of the band or a family, was still probably more important as a source of animal protein. They used a bow and arrow, snares, and nets, catching various species of rodents, rabbits and hares, lizards, squirrels, mice, insects, birds, and desert tortoise. Indeed, Southern Paiute and Chemehuevi camps were considered ethnically distinctive because of the large numbers of tortoise-shell fragments littering their margins, with Southern Paiute documented as eating tortoises in the late 1860s. Fish were eaten occasionally but were probably not significant food for the Southern Paiute; the Chemehuevi on the other hand rejected them entirely.

In the summer, seeds and berries of various kinds were collected. Where possible, summer gathering moved into the cooler upland areas, where plant maturation was slower than in the hotter and drier valley interiors. Late summer and early fall brought all aspects of Southern Paiute society to the gardens where produce was shared, even among those who themselves did not farm. In the late summer and early fall, the population moved into higher elevations for the pine nut harvest. Southern Paiute pinyon tracts were owned by men, whereas mesquite groves were owned by the family unit. In general terms, however, fall was a season of great mobility, with people moving up and down mountain elevations to obtain and cache winter foods. Additionally large game hunting occurred, and rabbit drives were also conducted on the valley floors. With the completion of the fall harvest, families moved back to their winter aggregation camps.

Some Southern Paiute groups embraced horticulture before the Euro-Americans entered the region, probably being introduced by neighboring people. The Native population planted various indigenous plants as well as the introduced Old World crops. Winter garden sites were occupied by one or more households of relatives and friends. Floodplain farming was practiced along the Colorado River, with field crops including hard-shelled pumpkin and a regular pumpkin; two different squashes; red, white, blue, and mixed color corn; tepary beans and spotted beans; sunflower; amaranth; small-kernelled wheat (Sonoran wheat); quail beans or chickpeas; and hard-shelled watermelon.

History

Beginning about 1540, early Spanish incursions into the Southwest appear to have had little direct impact on Southern Paiute groups for as much as 250 years, although indirect impacts were likely felt. By the early nineteenth century, however, Spanish impacts were both direct and devastating. The Spanish colonies of northern New Mexico and southern California had institutionalized slavery by this time, and archival evidence suggests that Southern Paiutes may have been held as slaves in Santa Fe and surrounding communities as early as the late 1700s. Their presence by 1810 is well documented. The Southern Paiute were located between Ute raiders on the north and east and Navajos on the south. Their territory straddled the Old Spanish Trail, which opened for commerce in the 1830s and became a route for slaving activities.

Southern Paiute captives were often sold as slaves in Santa Fe; carried off to southern California, transported there by Ute captors; or sold to traffickers along the Old Spanish Trail. Slave raiding against the Southern Paiute ended soon after the Mormons settled in Utah in 1847. Mormon farms and settlements spread throughout the region by 1855, displacing Southern Paiutes from their best gathering and horticultural lands. Traditional food supplies were further depleted by livestock, timbering, and other activities. The Southern Paiute retaliated by raiding settlements and travelers during the late 1850s and the 1860s. Within the next two decades, several reservations were established, including the Moapa Reservation on the Muddy River in 1872; the Colorado River Reservation in 1874; the Shivwits Reservation near Saint George, Utah, in 1891; and the Las Vegas Colony in Las Vegas, Nevada, in 1911. The Las Vegas group traveled widely and had friendly contact with numerous California Tribes, including the Kawaiisu, Serrano, Cahuilla, and Diegueño.

Mormons established the Las Vegas Mission in 1855 and abandoned it two years later, moving on to an area along the Colorado River. Development of transportation along the river further disrupted the Southern Paiute culture. Although some of the Chemehuevi remained nomadic through the 1870s, others settled more permanently along the rivers at Palo Verde and Chemehuevi Valley and on Cottonwood Island. Smallpox epidemics in the late 1870s contributed to drastic reductions in the population. By the 1880s, many of the remaining Paiute had abandoned their former way of life to settle around Anglo towns. Some of the Chemehuevi settled near Fort Mojave or worked for the railroad.

The late nineteenth and early twentieth centuries saw the creation of several reservations in Paiute territory, including the Moapa, Kaibab, Las Vegas Colony, and Shivits. As the Chemehuevi lost more of their agricultural fields, some came to occasionally reside on the reservation at Parker, Arizona. Although the Chemehuevi had agreed to settle on the Colorado River Reservation in 1880 after the turmoil created by the Calloway Affair, by 1885 they had returned to Chemehuevi Valley (Stewart 1968a:18). In 1907, land was set aside in California for the Chemehuevi, but it was too arid to support them. In 1912, much of the reservation was inundated by the creation of Lake Havasu, and the remaining inhabitants were forced to disperse. In the 1950s, the Indian Lands Commission ruled that 3.6 million acres of land had been taken from the Chemehuevi. A judgement was awarded and placed in trust for the Tribe. The Chemehuevi Tribe was formally recognized in the 1960s under the Indian Reorganization Act.

Aha Makhav (Mojave)

Most anthropologists identify this lower Colorado River Tribe as either the Mojave or Mohave. The spelling is considered rather important, as the Mojave with a "j" was representative of a people and the Mohave with an 'h" designated the geographic appellation. That is no longer the case, and some Mojave people prefer the same spelling as the place name. The name Mojave is derived from the Yuman words for three (homk) and mountain (avi). One of the national identifications was Hamakhava. Contemporary Mojave often refer to themselves as the Aha Makhav (aha meaning "water" and macav meaning "along or beside"); hence the designation "By the River" or Pipa Aha Macav (The People by the River).

The Mojave trace the origin of their people to Spirit Mountain—Mastamho—and are thought to have occupied their territory since as early as AD 900. The traditional territory of the Mojave centered within the Mojave Valley and along the Colorado River; however, their area extended into the Mojave Desert, and reports of Mojave activities extend north to the Great Basin, west to the Pacific Ocean, south to Yuma, Arizona, and southeast to Gila Bend. The Tribe consisted of three groups: the northern Matha lyathum, the central Hutto-pah, and the southern Kavi lyathum. There is some evidence that substantial Mojave occupation of the central Mojave Desert may have occurred while the main habitation areas along the Colorado River were maintained. Oral tradition from the Chemehuevi and Mojave suggests that Mojave were living in the Mojave Sinks at some point; Chemehuevi tradition suggests that Mojave were decimated in the central Mojave Desert through warfare. Archaeological remains from the Cronise Basin indicate influence from the Colorado River area, which may be evidence of Mojave occupation.

The Mojave were organized into patrilineal exogamous communities, although not all community members lived in the same locality; only women used the community names. The Mojave moved freely between groups and saw themselves as one people with a well-defined territory; they were governed by a hereditary chief, aha macav pina ta'ahon, and leaders from the three groups. Dreams and visions feature as a central concept in their culture; the Mojave received their knowledge and power from dreams, and all special talents or skills and success during life were dependent on proper dreaming. The Mojave cremated their dead, and all material possessions were burned with that person.

The Mojave language is a member of the River Yuman branch of the Yuman-Cochiti linguistic family and includes numerous distinctive languages and dialects. Ethnographic literature reports that the traditional Mojave territory included both riverine and inland areas; the river settlements were primarily north of the Bill Williams River up to the present Nevada border. This area of Mojave occupation extended on both sides of the lower Colorado River from south of Davis Dam to Topock. At one time, however, the Mojave also occupied Cottonwood Island farther to the north and the Chemehuevi and Colorado valleys to the south. The historical record indicates that the Mojave were encountered by the Juan de Oñate Spanish expedition as far south as the present Colorado River Indian Reservation (CRIR) in 1604 and that they intermittently controlled areas as far south as Palo Verde Valley.

Three groups made up the Aha Macav, and they lived on both sides of the lower Colorado River from Davis Dam in the south to Topock in the north. The northernmost element of the Mojave Nation was the Matha lyathum, who lived from Black Canyon south to the Mojave Valley. The Hutto-pah settled in the central Mojave Valley. The Kavi lyathum resided in an area south of Mojave Valley to south of the current city of Needles.

Settlement and Subsistence

Subsistence emphasized dry farming, which relied on the regular overflow of the Colorado River to irrigate crops along the banks, and wild plant gathering. Crops were planted with a digging stick after annual flooding events; farming was both productive and reliable. Occasional crop failures occurred during years with late inundations or years with no flooding.

Wild plants, fruits, and roots, especially the mesquite bean, were harvested in the summer months; mesquite trees were considered property, and permission was required before harvesting. Fish was the primary meat source—traps and nets were the most common techniques. Hunting, although apparently minimal, included bow and arrow hunting of mountain sheep and deer during the summer and smaller game, such as rabbits, using throwing sticks, traps, and organized drives during the winter months. Material possessions were often unadorned, and clothing was minimal due to the warm environmental conditions. Pottery made from sedimentary clay and crushed sandstone was coiled and patted with a paddle, dried, painted with ochre, and fired in open pits or rudimentary kilns.

Pots, bowls, and ladles were decorated with geometric patterns. Women constructed unique pottery dolls for children, including clothing and human hair. The Mojave tended to trade for baskets; their own were often irregularly constructed. Face tattooing with lines and dots was a common practice; it was believed that the spirit of a Mojave who died without face tattoos would go into a rathole and remain.

The Mojave are not known in the ethnographic record to have had villages but rather sprawling settlements or rural neighborhoods that were scattered throughout the valleys near arable land. The houses were usually situated on low rises along the floodplain. Residences comprising a settlement might be spread out over one or two miles, with perhaps four or five miles separating them from the next settlement.

The settlement constituted a local group, the nucleus of which was an extended family, either patrilocal or bilocal, although because of much shifting around of population and because of marital instability, unrelated families might be resident in a settlement. During much of the year, the Mojave resided under the shade of a ramada, resorting to their more substantial sand-covered houses only in cold weather. The winter houses were low and rectangular in floor plan. Four large cottonwood posts supported a sloping roof of poles, which was covered with a thatch of arrow weed. The sides and ends of the house, which consisted of vertical poles, were also sloping. A layer of sand and earth or river mud several inches in thickness was piled over the exterior of the house. Native-style houses have not been built since the beginning of the twentieth century.

History

The first documented meeting between the Mojave and Europeans was in 1604, when New Mexico governor Don Juan Oñate traveled through Mojave territory on an expedition. The Mojave provided directions and food and accompanied the expedition for part of the journey. Although no additional recorded contact occurred until the late eighteenth century, the Mojave were aware of continuing Spanish impact through their neighbors, and they themselves acquired Spanish wheat and horses through the Quechan. Other early contact included Father Francisco Garcés, who traveled west along a Mojave trade route, in 1775 to 1776. No attempt was made by the Spanish to establish a mission. Franciscan missions

along California's coast were baptizing farther inland, and many of the baptized rebelled at the control exerted by the missions and fled into the San Jacinto and San Bernardino Mountains and reached Mojave settlements on the Colorado River. Because of the resentment toward the missions, the Mojave participated in and may have led an attack on Mission San Gabriel Arcángel in 1810.

Beginning in 1826, the Mojave met with multiple fur trappers with varying success, partially due to the Mojave's reverence for beavers. Between 1826 and 1831, Mojave territory was visited by at least seven hunting parties. The first expedition led by Jedediah Smith in 1826 was met by the Mojave with hospitality, including guides and food. The next expedition led by James Ohio Pattie met with hostility, and later violence, when they marched through Mojave territory with beaver pelts that they refused to trade. Some subsequent expeditions and trappers experienced hostile encounters, although others were welcomed and assisted.

By 1850, the United States had acquired the Southwest from Mexico; the U.S. Army Corps of Engineers sent Captain Lorenzo Sitgreaves on an expedition to map and explore the area. Initially met with food and openness, the Mojave later attacked the expedition. In 1854, a scientific party, the Whipple Expedition, led by Lieutenant Amiel Weeks Whipple, met with greater success. The Mojave traded and exchanged information with the expedition; they were a valuable source of information to the scientists studying plants, animals, and minerals, as well as to the surveyors in finding a proposed railroad route.

The Beale Expedition, in 1857, led by Superintendent of Indian Affairs in California Edward Fitzgerald Beale, left wagon tracks and campsites for later use while surveying with camels through Mojave territory. Originally, the Mojave attempted to trade with the expedition but were met with hostility; the expedition was later attacked in 1858 as they attempted to cross the river. Two wagon trains were also attacked by the Mojave as they camped at the river; there appear to have been misunderstandings, as the wagon trains had inadvertently destroyed valuable tree stands and crops. In 1859, as a result of the attack, a detachment of cavalry headed by Colonel William H. Hoffman was sent to establish a fort for the protection of wagon trains in the area. In 1859, a supply group from Beale and a mail party from the Central Overland Mail Company were also attacked. On April 23, 1959, the fort at Beale's Crossing was established. The Mojave accepted terms of surrender after 700 soldiers stood ready at the crossing. The terms included harassment-free travel through the territory, no opposition to the establishment of roads and posts, and the return of nine hostages. Fort Mojave was closed in 1861 during the Civil War, and the Mojave were asked to guard the buildings. Mojave Road remained in use by miners and suppliers.

The CRIR was established in 1865, and during this period, some Mojave moved south to live with the Yavapai, Walapai, and Chemehuevi. Conditions were poor, and by the end of 1870, only about 500 Mojave remained on the CRIR, surviving on rations. By 1890, approximately 3,000 Mojave living around the fort were called the Fort Mojave, and the fort's building and acreage were transferred to the U.S. Department of the Interior. Land set aside by the government to pay for railroads in the area, including the Atlantic and Pacific Railroad, was sold to settlers, and the Mojave lost rights to use their traditional lands. In 1904, an allotment plan gave each Tribal member five acres of irrigable land; the rest of the land was opened to non-Indian settlers who treated the Mojave poorly.

The fort became an industrial boarding school for the Fort Mojave and other non-reservation Indians. From 1890 to 1931, all Mojave children were forced to live at the school, and a persistent effort was made to replace their cultural traditions with American ones. The Mojave were pressured to move to the CRIR, as the railroad had taken so much land that traditional farming was no longer feasible. Proposed damming of the Colorado River would have taken even more land. With the Mojave's refusal to move, the 14,000 acres belonging to the Fort Mojave military post and an additional 17,328 acres were set aside as the Fort Mojave Indian Reservation in 1910 to 1911.

As more Mojave moved to Needles, California, to find work in the increasingly important railroad town, farming activities decreased, and by 1965 only two farms remained. After the implementation of the Indian Reorganization Act, the Colorado Indian Tribes at the CRIR adopted their own constitution in 1937. In more recent years since 1964, the Fort Mojave Indian Reservation has gained approval to lease some land for development and has begun to oversee development of a recreation area; in 1970, the Colorado River Indian Tribes secured full title to reservation lands.

HISTORIC PERIOD

Although the earliest historical explorations of California are traced to 1542 with the arrival of the first Europeans, particularly the exploration of San Miguel Bay by Juan Rodríguez Cabrillo, the widely accepted start of the Historic period is 1769, with the joint founding of the Mission San Diego de Alcalá and the Royal Presidio. The Hispanic period in California's history includes the Spanish Colonial (1769–1820) and Mexican Republic (1820–1846) periods. This era witnessed the transition from a society dominated by religious and military institutions consisting of missions and presidios to a civilian population residing on large ranchos or in pueblos.

The most significant influx of Euro-American populations into the Mojave Desert occurred during what is referred to as the American period in California history, which began in 1848 with the conquest of California by Americans and then the onset of the California Gold Rush. In their headlong rush to the Pacific Coast, early California Euro-American emigrants passed over much of the Mojave Desert, which was envisioned as a vast expanse of hostile desert to be avoided or traversed as quickly as possible.

To that end, the following historical context is discussed within the framework of historical themes that are relevant to the proposed Project: transportation, mining, ranching, and military.

Transportation

One of the historical themes identified for the proposed Project is the use of various transportation corridors through the Mojave Desert, from prehistoric times to the present. These trails, roads, highways, and railroads throughout the centuries have connected Nevada, Utah, Arizona, and New Mexico with the California Coast.

Roads

Named roads within or in the immediate vicinity of the Project Area include Nipton Road and several unnamed roads traveling to and from the historic-era mining camps of Hart, Crescent, Barnwell, Juan, Searchlight, Vanderbilt, and Ivanpah, as well as several water wells. What is known as Nipton Road today was a wagon road from the Colorado River to the mines at Ivanpah during the late nineteenth century. By the turn of the century and with the construction of the railroad, a station was established at Ivanpah, and the wagon road was used to transport mineral products, goods, and people to and from various mines and camps to the rail station.

The alignment of the early wagon road has changed over the years, likely due to washouts, as the road crosses several large drainage channels. The modern highway travels between Interstate (I-) 15 in California and I-95 in Nevada (Searchlight, Nevada). The modern paved two-lane highway in Nevada is referred to as both Nevada State Route 164 and the Joshua Tree Highway. The highway, paved in 1963, was designated Arizona State Route 68 and is referred to as the Colorado River Highway.

Other historic-era roads in the area include various unnamed dirt roads, some of which have been graded and are being used as access for modern utility corridors or, specifically in the case of what is now known as Walking Box Ranch Road, as access to CMM.

Railroads

Railroads transformed the United States throughout the nineteenth century, prompting development of industry throughout the country and providing conduits for development along their lines. The Mojave Desert was one of the earliest potential locations for the transcontinental railroad: the so-called "35th Parallel Route," or southern route, explored by Lieutenant A. W. Whipple in 1854. If chosen for the transcontinental railroad, the 35th Parallel Route would have placed the railroad through the South and given an economic boost to the slave-owning states of pre-Civil War America. Ultimately, the decision of which route to choose for the railroad to the Pacific was shelved because of sectional politics, but within half a century, the eastern Mojave Desert was crossed by two transcontinental railroads, as well as a regional line.

Desert geography and competition between railroad companies dictated placement of the first railroad south of the cross-desert Mojave Road. In most parts of the United States, railroads generally followed existing routes of travel because they were usually the paths of least geographic resistance. Whipple followed Mojave Road in his 1854 explorations. In the desert, the steepness of the terrain was of less concern to early travelers than the availability of water. Consequently, Mojave Road, like the Indigenous trails it overlay, traveled through mountain ranges rather than around them. This feature made the track of Mojave Road unsuitable for railroad use and created another pattern of transportation across the eastern desert. A more moderately graded route was identified in 1868 by General William J. Palmer, working for the Union Pacific Railroad (UPRR), Eastern Division. That railroad was never built, but the Southern Pacific Railroad constructed a line through the desert in 1882 to 1883 from Mojave to Needles, largely along Palmer's route. This road was built to forestall competition from the Atlantic & Pacific Railroad (A&P), which was controlled by the Atchison, Topeka, and Santa Fe Railroad (AT&SF), also referred to as the Santa Fe. The A&P reached the east bank of the Colorado River in May 1883, and the lines were connected three months later, but Southern Pacific's control of the track through the Mojave precluded its usefulness to the A&P. In 1884, after the AT&SF threatened to build a line parallel to Southern Pacific's route to allow traffic to pass, the AT&SF sold its desert track to the A&P.

Railroads were an important transportation feature in the region, and several lines crisscrossed the valleys of the Mojave Desert. The region provided few resources for the railroads, which primarily served the mining industry—which was itself susceptible to volatile bust-boom cycles—making it difficult for railroad financiers to secure investments. Many companies surveyed or laid claims to rights-of-way (ROWs) only to have one of many economic or environmental factors working against them. The landscape remained isolated until the early 1900s due to these economic and environmental uncertainties. The lines that are most relevant to the proposed Project are the UPRR and the San Pedro, Los Angeles & Salt Lake City Railroad Company (SP, LA & SL).

Prior to 1900, the UPRR had surveyed and laid claim to a possible railroad route between Salt Lake City, Utah, and Los Angeles, California, closely following the route of the Mormon Trail. UPRR set its sights on connecting its line south from Promontory, Utah, through the Mojave Desert, and in 1880 it began plans to build. In 1882, Southern Pacific Railroad began construction on a line across the Mojave Desert to Needles, which later became part of the main line of the AT&SF. Construction of the UPRR Salt Lake Route began just after the turn of the twentieth century. Although some minor track building had taken place in Utah around that time, most of the route, including that passing through Nevada, was temporarily abandoned.

Two railroad companies—SP, LA & SL (incorporated in 1901) and the Oregon Short Line Company (incorporated in 1881 as a subsidiary of UPRR)—engaged in fierce competition over rights to the former UPRR route. Eventually, a federal court ruled that the Oregon Short Line Company was the rightful owner of the route and ordered SP, LA, & SL to withdraw. By 1903, the two companies formed a

partnership, working in tandem to construct the line. Work on the line proceeded quickly, performed by ethnically diverse construction crews composed of Greeks, Syrians, Italians, Austrians, Irish, Spaniards, Mexicans, Finns, and some Asians. Tracks for the so-called "Salt Lake Route" were completed by January 1905, with the first train traveling the route on January 5. SP, LA & SL changed its name in 1916 to LA & SL. In 1921, UPRR acquired LA & SL's interests in the Salt Lake Route and began operating it as part of the UPRR system.

Searchlight and the El Dorado Mining District near the town of Nelson, Nevada, west of Lake Mead along the west bank of the Colorado River, experienced a mining boom in the early twentieth century. The first railroad to service to the area was the Quartette Mining Company's narrow-gauge line, which was completed in 1902. Construction of the much-anticipated standard gauge Barnwell and Searchlight Railroad, a 23-mile line from Searchlight to Manvel, California (later renamed Barnwell) operated by AT & SF, began in 1906 and was completed in March 1907. Searchlight's mining boom had peaked by that point, and, despite the dismantling of the narrow-gauge line, traffic on the Barnwell and Searchlight Railroad slowed. A storm in August 1909 did considerable damage, and the line required extensive repairs. A similar storm occurred in September 1923, and the line was never repaired; it was officially abandoned in February 1924.

MINING

By the mid-1800s, Euro-Americans began entering the Mojave Desert, most merely traveling through the region, but many stayed after the discovery of precious metals. The first confirmed discovery of gold in San Bernardino County was at Salt Spring in 1849. Ore was also found in the Clark, Providence, New York, Whipple, Turtle, and Sacramento Mountains. Mining remained active through World War II (WWII); although there was a decrease during the 1920s, an increase in gold prices in the 1930s caused many small mines to reactivate. With the onset of WWII, iron was extracted from the Providence Mountains, specifically from Vulcan Mine. Since then, gold, silver, and tungsten have been mined in smaller amounts. Silver was discovered first in the Providence Mountains in 1863 in the Macedonia Canyon area; significant silver deposits were also discovered at the Bonanza King Mine in 1880. With the decrease in silver prices, gold mining at Hidden Hill, Gold Valley, and other western mining camps began in earnest.

Specific to the proposed Project is the discovery of gold in the Castle Mountains in late 1907 by miners James Hart and brothers Bert and Clark Hitt. By January 1908, the newfound mining camp had been established and immediately carried the name Hart. The Hart Townsite would be short-lived, as a fire destroyed much of the townsite in December 1910. Although most of the townsite was destroyed, mining continued, and people continued to reside in Hart until the Hart Miner's Union was disbanded in 1915 and the post office was closed.

Limited mining of precious metal continued in the district until 1942, though the Hart Townsite was never reoccupied. In the 1930s, the Big Chief Mine was reopened, renamed the Valley View Mine, and mined periodically until the early 1940s. Then in 1942, during WWII, federal regulations classified gold mines as nonessential to the war effort, and miners were either conscripted into military service or sent to work in mines that produced material needed by the military. The discovery of kaolin clay deposits in the 1920s led to a new type of mine development that would continue intermittently until the 1980s. Today, the historic mine site is active once again under new owners and is known as CMM.

Other notable mining districts in the vicinity of the Project Area include Ivanpah, Crescent, and Searchlight, which are briefly discussed below. Additional districts, mines, and camps include Barnwell, Juan, and Vanderbilt, which have their own histories that intertwine with the history of Hart and the overall development of the region.

Copper and silver were discovered in the Clark Mountain area in the late 1860s, and the town of Ivanpah was established in 1870. In 1871, Ivanpah consisted of several buildings, including a hotel, two stores, and the headquarters for the Paiute Company. A small smelting furnace was built at Ivanpah in 1873, a five-stamp mill was built in 1875, and a 10-stamp mill was constructed about one mile from town in 1876. Ivanpah had a post office from 1878 until 1899, when mining activities and the town declined. In 1892, the Nevada Southern Railroad Company was created to connect Needles with Ivanpah. The line was completed to Manvel in the New York Mountains mining district by 1893 but only reached the Ivanpah Valley in 1902. A new townsite of Ivanpah was developed by 1903, and in 1918 a third townsite known as Ivanpah (formerly South Ivanpah) was established.

The Crescent District is in southern Clark County near the Nevada-California boundary and is bordered by the Sunset District to the north and the Vanderbilt District to the south in San Bernardino County, California. The ore from the district's mines was transported to Goodsprings by burro where it was processed in *arrastras*, a simple, horse- or mule-powered mill used by early miners to crush ore into a fine powder. In July 1878, an apostate band of former members of the church attacked the group and killed most of the miners. Prospecting did not resume in the area until gold was discovered in 1894, and about two years later, turquoise deposits previously worked by Native Americans were located. The Toltec Gem Company operated a turquoise mine there between 1897 and 1900. Between 1905 and 1906, a narrow-gauge railroad was proposed to connect the SP, LA & SL railroad stop at Nipton with Searchlight. This route, which would have run through Crescent, was never completed, largely due to competition from the AT&SF that established a branch line to Searchlight from Barnwell (Paher 1970).

The Crescent District boom took place between 1904 and 1907. Although 300 claims were filed during that period, no important discoveries were made. A mining camp called Nippeno was established at the crossroads of two wagon trails six miles west of the district. In late 1904 to early 1905, Nippeno became a water stop for the SP, LA & SL and was connected to Searchlight by a stagecoach line. A Cornish immigrant, Harry Trehearne, came into possession of Nippeno in 1905, when he opened a general store, restored the hotel, and dug the first well. In 1910, the town's name was changed to Nipton to avoid confusion with another train stop along the line, "Nippomo." In 1905, the Crescent Township was established six miles east of Nippeno. The settlement included tents and wooden structures and boasted a post office, six saloons, restaurants, a newspaper, lodging, a bakery, and a union hall. The town lasted less than two years, and by 1907, when mining production was declining, the settlement was abandoned.

Searchlight enjoyed a short gold boom until the turn of the century; however, with the construction of the SP, LA & SL, the appearance of mining began to change. The railroad stimulated the mining of zinc, lead, and copper deposits in several districts between 1908 and 1934. The production of metal came primarily from three districts: gold and silver from Searchlight and Eldorado and copper, lead, and zinc from Goodsprings. The Searchlight boom lasted through the turn of the century and continued to produce minerals for many years after the boom waned. Other materials such as manganese, vanadium, molybdenum, cobalt, platinum, and palladium were mined in commercial quantities by 1910.

RANCHING

Grazing of nonnative livestock in the Mojave Desert dates to the earliest Euro-American uses of the desert. Travelers over the Old Spanish Trail, Mojave Road, and other routes almost always had stock with them and in turn would graze them as they crossed the desert. At times, herds of cattle and sheep were driven across the Mojave Desert to resupply Fort Mojave or were moved to fresh rangelands in New Mexico and Arizona, and military outposts along Mojave Road are reported to have undertaken small-scale grazing activity to supplement food supplies for stock.

Entrepreneurs would take advantage of the open rangeland and market in the form of miners and railroad workers by establishing ranches in the region as early as the 1870s through to the end of the nineteenth century. Of interest to the current survey are George Briggs and LeRoy Blackburn, who had established ranches at Marl Springs and Government Holes in California around 1875. By 1894, Briggs, Blackburn, and other investors merged their holdings and formed the Rock Springs Land & Cattle Company (RSLCC), with headquarters at Barnwell, Nevada, near the terminus of the newly constructed Nevada Southern Railroad. The RSLCC, like other large outfits in the Mojave Desert, grazed cattle on public land without fences. To that end, by 1886, RSLCC was aggressively working to purchase or trade for ownership of water rights in the region, effectively enabling the RSLCC to control much of the range. At various times, the outfit had more than 10,000 head of cattle on its holding of 1,000,000 acres.

During the 1920s, the RSLCC suffered financial losses because of several bad seasons of drought, resulting in the decision to sell its assets, including lands, livestock, and grazing and water rights. As part of the disposition, the Nevada ranch lands were given to John Woolf, who had served as the RSLCC ranch manager. The grazing rights associated with the original ranch extended north from the ranch headquarters to Railroad Pass, east to U.S. Route 95 and the Colorado River, south to the Newberry Mountains, and west across Crescent Peak and the California border. Woolf would later sell his interests, including water and grazing rights, to cowboy actor Rex Bell (born George F. Beldam) in May 1931.

The passage of the Taylor Grazing Act of 1934 changed the landscape of ranches throughout the region. The act compelled individual ranchers to clearly delineate and fence their ranges, as well as to develop water sources, and required grazers to pay fees to the government for forage consumed by each animal on public lands. The passing of the Taylor Grazing Act would result in the sale of several large ranches due to impending government regulations, but some saw this act as an opportunity to develop new ranches.

Bell would marry silent screen star Clara Bow in December 1931 in Las Vegas, and the two quickly began construction of a large ranch house, which would become known as the Walking Box Ranch, where they would raise two sons born in 1934 and 1938. During the 1930s, Bell would work in cooperation with the Civilian Conservation Corps to construct two wells on the grazing lands associated with the ranch. Bell continued to make movies in Hollywood during his time at the Walking Box Ranch while a ranch manager handled the daily ranching operations. Although not a seasoned rancher, Bell would go on to have a successful political career as a leader in the local ranching community, serving on the first advisory board for Nevada Grazing District #5. In the 1940s, Bell sold the north half of his grazing rights, north of the old Nipton Road, to his ranch manager Al Marshall, and by the mid-1940s, Bell and his family had moved to Las Vegas where he opened a western wear store. At that time, the Walking Box property was leased to Wyatt Marshall and a business partner for a 5-year period. After a failed bid for a Congressional seat in the 1940s, Bell would be elected Lieutenant Governor in 1954 and serve until his death in 1962. Following the lease period, Bell sold the Walking Box Ranch to Karl Weikel, a former Navy officer, in 1951, and the property became known as the YKL Ranch. Weikel continued cattle operations through the 1970s and would eventually sell to Viceroy Gold Corporation in 1989. Viceroy's interest in the property stemmed from their need for better access to local mining operations; however, the ranch was rehabilitated during their ownership and used as an executive retreat.

In years to come, the U.S. Fish and Wildlife Service and The Nature Conservancy established desert tortoise conservation habitat, effectively ending the remains of cattle ranching in the area.

MILITARY

The establishment of a lasting and long-term military presence in the Mojave Desert began in the mid-nineteenth century in reaction to conflict between Native Americans and Euro-Americans. As previously discussed, Fort Mojave was established to protect Mojave Road and important routes between California and Arizona.

Multiple forts and camps were constructed and intermittently outfitted along Mojave Road. In 1860, two Euro-Americans were murdered at Bitter Springs, on the Salt Lake Trail; the "Pah-Utes" were blamed, although conflicting evidence suggested that the members of the church may have been responsible. Thus, an Army unit led by James H. Carlton spent three months in the eastern Mojave Desert traveling through Devil's Playground, the Granite Mountains, and across Soda Lake. After several Native Americans were executed, a cease-fire was negotiated at Camp Cady. During the years from 1866 to 1868, the military was responsible for mail escort, and several military outposts, including Soda Springs, Marl Springs, Rock Spring, and Piute Creek, were established. These posts were eventually abandoned when mail service was transferred to a more southerly route.

In the earliest days of WWII, when the United States was thrust into the greatest global conflict the world had ever seen, the War Department realized the necessity for well-trained troops able to withstand the rigors of battle in rough terrain and in inhospitable environmental conditions. The resulting new training facility was the Desert Training Center (DTC), the largest military training ground in the history of military maneuvers. The simulated theater of operation covered some 19,000 square miles of the Mojave Desert—from the outskirts of Pomona, California; eastward to within just miles of Phoenix, Arizona; southward to Yuma, Arizona; and northward to the southern tip of the state of Nevada. The mission of the DTC was to train U.S. Army and Army Air Corps units and personnel to live and fight in the desert, to test and develop suitable equipment, and to develop tactical doctrines, techniques, and training methods. The facility was considered key for units engaged in combat during the 1942 to 1943 North African campaign.

To command the DTC, the War Department sent George S. Patton Jr., Commander of the 1st Armored Corps, to California in March 1942 to establish a headquarters for the DTC. A native of southern California, Patton knew the area well from his youth and from having participated in Army maneuvers in the Mojave Desert in the 1930s. His initial orders were to select areas within the desert that would be suitable for the large-scale maneuvers necessary to prepare American soldiers for combat against the German Afrika Korps in the African desert.

Patton and his advanced team designated various locations within the DTC where tent camps would be constructed. The camps were situated so that each unit could train individually without interfering with the others. Airfields, hospitals, supply depots, and sites for other support services were selected, as was a Corps maneuvering area. The idea was that each division and/or major unit would train in its own area, and near the end of the training period would participate in a Corps (two divisions or more) exercise in the Corps maneuvering area at Palen Pass. Upon completion of the Corps exercise, the trained units would leave the DTC, and new units would arrive to begin their training and the process would repeat.

The first and largest camp established was Camp Young, several miles east of Coachella, California. Constructed and laid out as Patton requested, Camp Young is only a few miles east of the current Project Area. The camp was composed primarily of pyramidal tents, with only sparse wooden structures. All constructed buildings were temporary in nature and served as administrative offices or hospitals. Tents had no electricity and contained cots, footlockers, and musette bags.

Despite logistical problems, the DTC officially opened on April 30, 1942. Troops generally arrived in troop trains, as the rubber in vehicle tires was considered too valuable to the overall war effort to be wasted in the transportation of troops by truck across country. Some of the early military units included:

- Headquarters and headquarters Company, [1st] Armored Corps
- 91st Recon squadron (mechanized) (1st Cavalry Division)
- 185th Sep CA Battalion (Antiaircraft Automatic Weapons, Mobile)
- Company B, 80th Engineer Battalion

- 8th Engineer Squadron (1st Cavalry Division)
- 62nd field Artillery Battalion (105mm Howitzer) (1st Cavalry Division)
- 3rd Battalion, 1st Infantry Division
- 4th Machine Records Unit (Mobile)

Additionally, there was a provisional medical battalion consisting of several companies, several Quartermaster regiments, the 1st Signal Armored Battalion, a Signal Photo Company, and several tank battalions, which the DTC first opened in 1942. By the end of May 1942, more than 4,800 enlistees were stationed at Camp Young. Within days of arrival, troops would make their first march into the desert. Patton required all soldiers and officers to be able to run a 10-minute mile while equipped with rifles and full packs. Approximately 10,000 men took part in the first large-scale exercise, which covered 300 miles in seven days, beginning with the 13-week mobilization training programs, followed by 13 weeks of unit training, and finally 14 weeks of combined training to include at least one maneuver of a division against a division. The later phases of this program could be carried out with ruthless efficiency in the Mojave Desert.

By the spring of 1943, the North African campaign was in its final stages and the primary mission of the DTC had changed. Troops originally coming to the DTC for desert training maneuvers were now being deployed worldwide. To reflect that change in mission, the name of the center was changed to the California-Arizona Maneuver Area (C-AMA). The renamed training center's mission was to serve as a theater of operations to train combat troops, service units, and staff under conditions like those that might be encountered overseas. The C-AMA was enlarged to include a Communications Zone and a Combat Zone, approximately 350 miles wide and 250 miles long. Despite the success of the training facility, by late 1943 the C-AMA was suffering shortages of personnel, as these specialists were needed overseas, and few could be spared for the C-AMA. General Lesley J. McNair recommended shutting down the C-AMA. As troops had been evacuating the base since early 1944, the War Department agreed with McNair, and the facility was declared surplus on April 1, 1944.

All equipment and material that could be removed was removed, and the various campsites were closed. An attempt was made to remove unexploded ordnance; however, the Army recognized that the entire maneuver area, some 19,000 square miles, had been used for live-fire exercises and clearing the entire area was nearly impossible. For many years following the closure of the DTC/C-AMA, wooden signs could be found throughout the Mojave Desert stating "Danger. Entering an abandoned U.S. maneuver area." For several decades beyond the closure, it was clear that substantial amounts of unexploded ordnance dating to the WWII era remained in the area. Ordnance dumps have been found in several areas of the Mojave Desert, as well as individual munitions such as explosive shells, hand grenades, anti-tank mines and fuses, shrapnel, and other materials. Following the Army cleanup, the entire facility was classified as surplus and the Army's responsibility for the land ended.

Operation Desert Strike

Operation "Desert Strike" occurred in May 1964 when the military once again used the Mojave Desert between Searchlight, Nevada; Kingman, Arizona; and Barstow, California. The training activities for a joint Army-Air Force exercise included 89,000 troops who practiced amphibious landings on the Colorado River banks, constructed machine-gun emplacements at railroad crossings, and used heavy weaponry. The operation was designed to test Cold War tactics and equipment. Two mythical countries, Nezona and Calonia, were "created," including governing bodies, which were in a dispute over water rights to the Colorado River. Nezona forces launched a massive surprise attack on Calonia on May 17, 1964, in response to Calonia's seizure the previous night of two Colorado River dams. Calonia forces were driving deeply into their own territory, and when their sovereignty was perceived to be threatened,

responded with tactical nuclear weapons. Nezona's advance was stalled, but the attack elicited a retaliatory nuclear strike. The operation ended on May 29, 1964, and marked the end of the largest military training exercise since WWII.

4.5.1.3 Existing Cultural Resources and Tribal Cultural Resources

CULTURAL RESOURCES

Class III cultural resources inventories of CMM were conducted in 2018 by ASM Affiliates (Powell and Winslow 2018) and in 2021 by SWCA (Winslow 2021). A Class III study of the proposed water pipeline, transmission line, and staging areas was completed in 2025 by SWCA (Winslow and Vicari 2025). The three inventory reports cover the entirety of the area that may be physically impacted by the proposed Project. The indirect impact area consists of a 1-mile buffer surrounding portions of the Project footprint that contain proposed elements that could change the integrity of the setting, feeling, or association of historical resources within or near the Project corridor. An analysis of indirect impacts to cultural resources was completed for the proposed Project in 2026 by SWCA (McMurray et al. 2026).

The Class III inventories consisted of record searches, archival research, and intensive pedestrian surveys. For the California portion of the Project Area, record search data on file at the South Central Coastal Information Center (SCCIC) and the Bureau of Land Management (BLM) Needles Field Office were reviewed. These data were supplemented with information from online sources, including the BLM Government Land Office (GLO) website, U.S. Geological Survey (USGS) historical topographic map explorer website, Built Environment Resources Directory, Internet searches, and regional libraries. Intensive pedestrian surveys were conducted in accordance with BLM standards and guidelines; standard transect spacing was 15 meters, though spacing was reduced to three to five meters within identified cultural resource sites to adequately define and characterize surface artifacts and features.

The Class III surveys identified 221 cultural resources within the California portion of the Project Area. These included four historic built environment resources, 85 archaeological sites, and 132 isolated artifacts (Tables 4.5-1 through 4.5-3). As part of the cultural resource inventory studies, National Register of Historic Places (NRHP) evaluations were completed on cultural resources identified within the Project Area. For previously evaluated resources, the Class III studies assessed the current condition of resources to determine if they possessed the qualities necessary for listing in the NRHP and if the existing determinations remained valid. Although NRHP evaluations were generally based solely on surface observations, a testing plan was developed and implemented by SWCA at two sites (P-36-005872/CA-SBR-5872 and P-36-032492/CA-SBR-32492/H [Prehistoric Component]) to collect additional information that was needed to confirm previous NRHP recommendations of eligibility (Winslow 2024). Eight archaeological sites within the Project Area were not evaluated for listing in the NRHP.

Most of the cultural resources identified in the Project Area have not been evaluated for listing in the California Register of Historical Resources (CRHR). However, in accordance with California Public Resources Code (PRC) Section 5024.1(d)(1), resources that had been formally determined eligible for or are listed in the NRHP are automatically eligible for the CRHR and are considered historic resources under CEQA. For the purposes of this impact analysis, it is assumed that the NRHP eligibility determinations and recommendations may be used to assess the CRHR eligibility of resources within the Project Area. Resources unevaluated for listing in the NRHP are assumed to be eligible for the CRHR for the purposes of the proposed Project.

Eleven cultural resources identified in the Project Area are eligible for listing in the CRHR, including eight resources that are assumed to be eligible for this analysis (see Table 4.5-1 and Table 4.5-2). Two of these resources (P-36-003066/CA-SBR-2066H and P-36-024864/CA-SBR-2486H) are historic built environment resources. The remaining nine resources are archaeological sites, six of which date to the

prehistoric period (P-36-005705/CA-SBR-5705, P-36-5706/CA-SBR-5706, P-36-005707/CA-SBR-5707, P-36-005708/CA-SBR-5708, P-36-005872/CA-SBR-5872, and P-36-032513/CA-SBR-32513), two of which date to the historic period (P-36-006835/CA-SBR-6835 and JM-S-08), and one resource contains prehistoric and historic-era components (P-36-003060/CA-SBR-3060/H).

In total, 48 cultural resources were identified within the indirect impacts area for the California portion of the proposed Project. Five of these resources were excluded from the indirect impacts analysis because they qualify for listing in the CRHR solely under Criterion 4 and are not subject to indirect impacts. The remaining 43 resources all consist of site types that are not classified as being sensitive to indirect impacts (e.g., limited surface expression or integrity of setting).

Table 4.5-1. Historic Built Environment Resources within the California Portion of the Project Area

Primary or Temp No.	Trinomial	Location	Resource Description	CRHR Eligibility
P-36-001910	CA-SBR-1910H	Utility ROW	SP, LA, & SL Railroad	Not eligible
P-36-003066	CA-SBR-3066H	Utility ROW	Nipton townsite	Assumed eligible
P-36-014496	CA-SBR-12980	Utility ROW	Nipton Road	Not eligible
P-36-024864	CA-SBR-24864H	Utility ROW	Earthen levees	Assumed eligible

Table 4.5-2. Archaeological Sites within the California Portion of the Project Area

Primary or Temp No.	Trinomial	Location	Resource Description	CRHR Eligibility
P-36-003040	CA-SBR-3040/H	CMM, Utility ROW	Historic Hart Well/ prehistoric artifact scatter	Not eligible
P-36-003047	CA-SBR-3047H	Utility ROW	Historic Barnwell and Searchlight railroad remnants	Not eligible
P-36-003060	CA-SBR-3060/H	CMM	Multicomponent Hart Townsite	Prehistoric component (ineligible); Historic component (eligible)
P-36-005704	CA-SBR-5704	CMM	Prehistoric quarry	Not eligible
P-36-005705	CA-SBR-5705	CMM	Prehistoric lithic procurement	Assumed eligible
P-36-005706	CA-SBR-5706	CMM	Prehistoric lithic procurement	Assumed eligible
P-36-005707	CA-SBR-5707	CMM	Prehistoric lithic procurement	Assumed eligible
P-36-005708	CA-SBR-5708	CMM	Prehistoric lithic procurement	Assumed eligible
P-36-005837	CA-SBR-5837H	CMM	Historic mine site	Not eligible
P-36-005871	CA-SBR-5871H	CMM	Historic can scatter and prospect	Not eligible
P-36-005872	CA-SBR-5872	CMM	Prehistoric lithic, ceramic, and ground stone scatter	Eligible
P-36-005877	CA-SBR-5877H	CMM	Historic Big Chief/Valley View Mine (previously recorded as Green & Gold Mine)	Not eligible
P-36-005970	CA-SBR-5970	CMM	Prehistoric lithic scatter	Not eligible
P-36-006835	CA-SBR-6835	Utility ROW	Historic Von Schmidt Line	Assumed eligible
P-36-008186	CA-SBR-8186	CMM	Prehistoric milling station	Not eligible
P-36-014496	CA-SBR-14496H	Utility ROW	Historic Nipton Road	Not eligible

Primary or Temp No.	Trinomial	Location	Resource Description	CRHR Eligibility
P-36-014988	CA-SBR-13133H	Utility ROW	Historic refuse scatter	Not eligible
P-36-024863	--	Utility ROW	Road	Not eligible
P-36-032490	CA-SBR-32490H	CMM	Historic can scatter and cairn	Not eligible
P-36-032491	CA-SBR-32491H	CMM	Historic mining features	Not eligible
P-36-032492	CA-SBR-32492H	CMM	Prehistoric lithic, ceramic, and ground stone scatter with historic mining features and refuse scatter	Not eligible
P-36-032493	CA-SBR-32493H	CMM	Historic road	Not eligible
P-36-032494	CA-SBR-32494H	CMM	Historic can scatter and cairn	Not eligible
P-36-032495	CA-SBR-32495H	CMM	Historic mining features and refuse scatter	Not eligible
P-36-032496	CA-SBR-32496H	CMM	Historic mine site	Not eligible
P-36-032497	CA-SBR-32497H	CMM	Historic mine site and refuse scatter	Not eligible
P-36-032498	CA-SBR-32498H	CMM	Historic refuse scatter and cairn	Not eligible
P-36-032499	CA-SBR-32499H	CMM	Historic mining features and refuse scatter	Not eligible
P-36-032500	CA-SBR-32500H	CMM	Historic mine site and refuse scatter	Not eligible
P-36-032501	CA-SBR-32501H	CMM	Historic mine site and refuse scatter	Not eligible
P-36-032502	CA-SBR-32502H	CMM, Utility ROW	Historic pipeline, road, and refuse scatter	Not eligible
P-36-032503	CA-SBR-32503H	CMM	Historic pipeline, road, and refuse scatter	Not eligible
P-36-032504	CA-SBR-32504	CMM, Utility ROW	Prehistoric lithic scatter	Not eligible
P-36-032505	CA-SBR-32505	CMM	Prehistoric lithic procurement area	Not eligible
P-36-032506	CA-SBR-32506H	CMM	Historic mine site and refuse scatter	Not eligible
P-36-032507	CA-SBR-32507H	CMM	Historic cairns	Not eligible
P-36-032508	CA-SBR-32508H	CMM	Historic mining features and refuse scatter	Not eligible
P-36-032509	CA-SBR-32509H	CMM	Historic refuse scatter	Not eligible
P-36-032510	CA-SBR-32510	CMM	Prehistoric lithic scatter	Not eligible
P-36-032511	CA-SBR-32511	CMM	Prehistoric lithic scatter	Not eligible
P-36-032512	CA-SBR-32512	CMM	Prehistoric lithic and ground stone scatter	Not eligible
P-36-032513	CA-SBR-32513	CMM	Prehistoric Lithic Scatter (Lake Mojave Projectile Point)	Eligible
P-36-032514	CA-SBR-32514H	CMM	Historic mine site and refuse scatter	Not eligible
P-36-032515	CA-SBR-32515	CMM	Prehistoric lithic scatter	Not eligible
P-36-032516	CA-SBR-32516	CMM	Prehistoric lithic scatter	Not eligible
P-36-032517	CA-SBR-32517H	CMM	Historic mining features	Not eligible
P-36-032518	CA-SBR-32518H	CMM	Historic cairns	Not eligible
P-36-032519	CA-SBR-32519	CMM	Prehistoric lithic scatter	Not eligible
P-36-032520	CA-SBR-32520	CMM	Prehistoric lithic scatter	Not eligible
P-36-032521	CA-SBR-32521H	CMM	Historic mining features	Not eligible
P-36-032522	CA-SBR-32522H	CMM	Historic can scatter	Not eligible
P-36-032715	CA-SBR-32715	CMM	Prehistoric lithic scatter	Not eligible

Primary or Temp No.	Trinomial	Location	Resource Description	CRHR Eligibility
P-36-032716	CA-SBR-32716	CMM	Prehistoric lithic scatter	Not eligible
P-36-032717	CA-SBR-32717	CMM, Utility ROW	Historic mining features	Not eligible
P-36-032718	CA-SBR-32718	CMM	Historic cairns	Not eligible
P-36-032719	CA-SBR-32719	CMM	Prehistoric lithic scatter	Not eligible
JM-S-01	--	Utility ROW	Historic refuse scatter	Not eligible
JM-S-02	--	CMM	Historic refuse scatter	Not eligible
JM-S-03	--	CMM	Historic refuse scatter	Not eligible
JM-S-04	--	CMM	Historic refuse scatter	Not eligible
JM-S-05	--	Utility ROW	Historic refuse scatter	Not eligible
JM-S-08	--	CMM	Historic structural remnants	Assumed eligible
JMM-S-01	--	Utility ROW	Historic refuse scatter	Not eligible
JMM-S-02	--	Utility ROW	Historic refuse scatter	Not eligible
JMM-S-03	--	Utility ROW	Historic refuse scatter	Not eligible
KM-S-02	--	CMM	Historic refuse scatter	Not eligible
KM-S-07	--	CMM	Historic refuse scatter	Not eligible
KM-S-08	--	CMM	Historic refuse scatter	Not eligible
KM-S-09	--	CMM	Historic refuse scatter	Not eligible
KM-S-10	--	CMM	Historic refuse scatter	Not eligible
KM-S-11	--	CMM	Historic rock alignment, exposed water line and refuse	Not eligible
KM-S-12	--	CMM	Prehistoric lithic scatter and historic can	Not eligible
KM-S-13	--	CMM	Historic refuse scatter	Not eligible
KM-S-14	--	CMM	Historic refuse scatter	Not eligible
KM-S-15	--	CMM	Historic refuse scatter	Not eligible
LV-S-04	--	CMM	Historic refuse scatter	Not eligible
LV-S-07	--	CMM	Historic refuse scatter	Not eligible
LV-S-08	--	CMM	Historic refuse scatter	Not eligible
LV-S-09	--	CMM	Historic cadastral marker, mining claim marker, and refuse scatter	Not eligible
LV-S-10	--	CMM	Historic refuse scatter	Not eligible
LV-S-11	--	CMM	Historic refuse scatter	Not eligible
LV-S-12	--	CMM	Historic prospect and can	Not eligible
SR-S-02	--	CMM	Historic refuse scatter	Not eligible
SR-S-03	--	CMM	Historic refuse scatter	Not eligible
VV-S-01	--	Utility ROW	Historic refuse scatter	Not eligible

Table 4.5-3. Isolated finds within the California Portion of the Project Area

Temp No.	Resource Age	Location	Resource Description	CRHR Eligibility
AD-IO-01	Historic	CMM	One metal beverage can	Not eligible
AD-IO-03	Historic	CMM	Metal meat tin	Not eligible
DP-10-01	Prehistoric	Utility ROW	Quartzite flake	Not eligible
DP-10-02	Prehistoric	Utility ROW	Two quartzite flakes	Not eligible
IO-CP-01	Historic	CMM	Fuel can	Not eligible
IO-CP-02	Historic	CMM	Collapsed cairn	Not eligible
IO-CP-03	Historic	CMM	Cadastral marker	Not eligible
IO-CP-06	Historic	CMM	Collapsed cairn	Not eligible
IO-CP-07	Historic	CMM	Cairn	Not eligible
IO-CP-08	Historic	CMM	Sanitary can	Not eligible
IO-CP-09	Historic	CMM	Cairn	Not eligible
IO-CP-10	Historic	CMM	Metal sheet fragment	Not eligible
IO-CP-11	Historic	CMM	Cairn	Not eligible
IO-CP-12	Historic	CMM	Adit	Not eligible
IO-CP-13	Historic	CMM	One beverage can and one sanitary can	Not eligible
IO-CP-14	Historic	CMM	Metal basin	Not eligible
IO-CP-15	Historic	CMM	Cairn	Not eligible
IO-CP-16	Historic	CMM	Cairn	Not eligible
IO-CP-17	Historic	CMM	Fuel can	Not eligible
IO-CP-18	Historic	CMM	Collapsed cairn	Not eligible
IO-CP-19	Historic	CMM	Cairn	Not eligible
IO-CP-20	Historic	CMM	Carin	Not eligible
IO-CP-21	Historic	CMM	Hole-in-cap can	Not eligible
IO-CP-22	Historic	CMM	Meat can and sanitary can	Not eligible
IO-CP-23	Historic	CMM	Meat can	Not eligible
IO-CP-24	Prehistoric	CMM	Rhyolite flake	Not eligible
IO-CP-26	Historic	CMM	Cairn	Not eligible
IO-CP-29	Prehistoric	CMM	Chert flake	Not eligible
IO-CP-30	Prehistoric	CMM	Utilized chert flake	Not eligible
IO-CP-31	Prehistoric	CMM	Chert flake	Not eligible
IO-CP-34	Prehistoric	CMM	Chert flake	Not eligible
IO-CP-40	Historic	CMM	Cairn	Not eligible
IO-CP-42	Prehistoric	CMM	Two chert flakes	Not eligible
IO-CP-43	Historic	CMM	Log Cabin syrup	Not eligible
IO-CP-44	Historic	CMM	Vent-hole can	Not eligible
IO-CP-45	Prehistoric	CMM	Chert flake	Not eligible
IO-CP-46	Historic	CMM	Collapsed cairn	Not eligible
IO-CP-47	Historic	CMM	Collapsed cairn	Not eligible
IO-CP-48	Historic	CMM	Collapsed cairn	Not eligible

Temp No.	Resource Age	Location	Resource Description	CRHR Eligibility
IO-CP-49	Historic	CMM	Sanitary can	Not eligible
IO-CP-50	Historic	CMM	Cairn	Not eligible
IO-CP-51	Historic	CMM	Collapsed cairn	Not eligible
IO-CP-52	Prehistoric	CMM	Rhyolite flake	Not eligible
IO-CP-53	Historic	CMM	Partially collapsed cairn	Not eligible
IO-CP-54	Prehistoric	CMM	Rhyolite flake	Not eligible
IO-CP-55	Historic	CMM	Cairn marker	Not eligible
IO-CP-56	Historic	CMM	Tobacco can	Not eligible
IO-CP-57	Historic	CMM	Collapsed cairn	Not eligible
IO-CP-58	Historic	CMM	Cairn	Not eligible
IO-CP-59	Historic	CMM	Collapsed cairn	Not eligible
IO-CP-60	Historic	CMM	Sanitary can	Not eligible
IO-CP-61	Historic	CMM	Sanitary can	Not eligible
IO-CP-62	Historic	CMM	Three beverage cans	Not eligible
IO-CP-63	Historic	CMM	Cigarette tin	Not eligible
IO-CP-64	Historic	CMM	One beverage can and one tobacco tin	Not eligible
IO-CP-65	Historic	CMM	Two cairns	Not eligible
IO-CP-66	Historic	CMM	Cairn	Not eligible
IO-CP-67	Historic	CMM	Collapsed cairn	Not eligible
IO-CP-68	Historic	CMM	Two cairns	Not eligible
IO-CP-69	Historic	CMM	Cairn	Not eligible
IO-CP-70	Historic	CMM	Two prospecting pits	Not eligible
IO-CP-71	Historic	CMM	Prospecting trench	Not eligible
IO-CP-72	Historic	CMM	Two cairns	Not eligible
IO-CP-73	Historic	CMM	Cairn and prospecting pit	Not eligible
IO-CP-74	Historic	CMM	Cairn and prospecting pit	Not eligible
IO-CP-75	Historic	CMM	Cairn and prospecting pit	Not eligible
IO-CP-76	Historic	CMM	Adit	Not eligible
IO-CP-77	Historic	CMM	Adit	Not eligible
IO-CP-78	Historic	CMM	Rock alignment	Not eligible
IO-CP-79	Historic	CMM	Prospecting pit	Not eligible
IO-CP-80	Historic	CMM	Two prospecting pits	Not eligible
IO-CP-81	Historic	CMM	Cairn	Not eligible
IO-CP-82	Historic	CMM	Adit	Not eligible
IO-CP-83	Historic	CMM	Cairn	Not eligible
IO-CP-84	Historic	CMM	Cairn	Not eligible
IO-JK-02	Historic	CMM	Cairn	Not eligible
JM-IO-01 (2021)	Historic	CMM	Metal sanitary can	Not eligible
JM-IO-01 (2025)	Prehistoric	Utility ROW	Cryptocrystalline silicate (CCS) flake	Not eligible
JM-IO-02 (2021)	Historic	CMM	Three metal sanitary cans	Not eligible

Temp No.	Resource Age	Location	Resource Description	CRHR Eligibility
JM-IO-02 (2025)	Historic	Utility ROW	Colorless glass bottle fragment	Not eligible
JM-IO-03 (2021)	Prehistoric	CMM	CCS flake	Not eligible
JM-IO-03 (2025)	Historic	Utility ROW	Sanitary can	Not eligible
JM-IO-04	Historic	CMM	Sanitary can	Not eligible
JM-IO-05	Historic	CMM	Sanitary can	Not eligible
JM-IO-06	Historic	CMM	Cadastral marker	Not eligible
JM-IO-07	Prehistoric	CMM	CCS flake	Not eligible
JM-IO-08	Historic	CMM	Metal fuel can	Not eligible
JM-IO-09	Prehistoric	CMM	Quartzite flake	Not eligible
JM-IO-10	Historic	CMM	Mule shoe	Not eligible
JM-IO-11	Historic	CMM	Agua glass bottle base and body fragments	Not eligible
JM-IO-12	Prehistoric	CMM	CCS tested cobble	Not eligible
JM-IO-13	Prehistoric	CMM	CCS flake	Not eligible
JM-IO-14	Historic	CMM	Hole-in-cap can	Not eligible
JM-IO-15	Historic	CMM	Sanitary can	Not eligible
JM-IO-16	Historic	CMM	Cadastral marker	Not eligible
JM-IO-17	Historic	CMM	Metal fish tin	Not eligible
JM-IO-18	Historic	CMM	Sanitary can	Not eligible
JM-IO-19	Historic	CMM	Tobacco tin	Not eligible
JM-IO-20 (2021)	Historic	CMM	Sanitary can	Not eligible
JM-IO-21	Prehistoric	CMM	Rhyolite flake	Not eligible
JM-IO-22	Historic	CMM	Vent-hole can	Not eligible
JM-IO-23	Historic	CMM	Sanitary can	Not eligible
JMM-IO-01	Historic	CMM	Sanitary Can	Not eligible
JMM-IO-02	Historic	CMM	Oil can	Not eligible
JMM-IO-03	Historic	CMM	Coffee can	Not eligible
JMM-IO-04	Prehistoric	Utility ROW	Metate fragment	Not eligible
JMM-IO-05	Historic	Utility ROW	Colorless glass jar	Not eligible
JMM-IO-06	Prehistoric	Utility ROW	CCS flake	Not eligible
JMM-IO-07	Prehistoric	Utility ROW	Quartzite mano	Not eligible
JMM-IO-08	Historic	Utility ROW	Three amethyst glass fragments	Not eligible
JMM-IO-09	Historic	Utility ROW	Hole-in-cap can	Not eligible
KM-IO-01	Prehistoric	CMM	CCS flake	Not eligible
KM-IO-02	Prehistoric	CMM	Quartzite flake	Not eligible
KM-IO-03	Historic	CMM	Sanitary can	Not eligible
KM-IO-04	Historic	CMM	Hole-in-top can	Not eligible
KM-IO-05	Historic	CMM	Sanitary can	Not eligible
KM-IO-06	Prehistoric	CMM	One obsidian flake	Not eligible
LV-IO-01	Prehistoric	CMM	Chert core	Not eligible
LV-IO-02	Historic	CMM	Hole-in-cap can	Not eligible

Temp No.	Resource Age	Location	Resource Description	CRHR Eligibility
LV-IO-03	Historic	CMM	Coffee can	Not eligible
LV-IO-04	Historic	CMM	Hole-in-cap can	Not eligible
LV-IO-05	Historic	CMM	Sanitary can	Not eligible
LV-IO-06	Historic	CMM	Cadastral marker	Not eligible
LV-IO-07	Historic	CMM	Vent-hole can	Not eligible
LV-IO-08	Historic	CMM	Colorless medicine glass bottle	Not eligible
LV-IO-09	Historic	CMM	Fuel can	Not eligible
SR-IO-01	Historic	CMM	Cadastral marker	Not eligible
SR-IO-02	Historic	CMM	Flat top beverage can	Not eligible
SR-IO-03	Historic	CMM	Cadastral marker	Not eligible
SR-IO-04	Historic	CMM	Vent-hole can	Not eligible
SR-IO-05	Historic	CMM	Vent-hole can	Not eligible
SR-IO-07	Historic	CMM	Flat top beverage can	Not eligible

TRIBAL CULTURAL RESOURCES

An initial letter requesting consultation under both Section 106 of the National Historic Preservation Act (NHPA) and Assembly Bill (AB) 52 was sent via certified U.S. mail to the following 22 Native American Tribes on April 18, 2025:

1. Big Pine Paiute Tribe of the Owens Valley
2. Chemehuevi Indian Tribe
3. Cocopah Indian Tribe
4. Colorado River Indian Tribes
5. Fort Independence Indian Community
6. Fort Mojave Indian Tribe
7. Fort Yuma Quechan Tribe
8. Havasupai Tribe
9. Hopi Tribe
10. Hualapai Indian Tribe
11. Jamul Indian Village
12. Kaibab Band of Paiute Indians
13. Las Vegas Paiute Tribe
14. Las Vegas Tribe of Paiute Indians
15. Lone Pine Paiute-Shoshone Tribe
16. Moapa Band of Paiute Indians
17. Pahrump Paiute Tribe
18. Timbi-sha Shoshone Tribe

19. Twenty-Nine Palms Band of Mission Indians
20. Utu Utu Gwaitu Paiute Tribe
21. Yavapai-Apache Indian Nation
22. Yavapai-Prescott Indian Tribe

The following additional eight Native American Tribes were sent letters requesting consultation under NHPA Section 106 and Native American Graves and Protection and Repatriation Act (NAGPRA) via certified U.S. mail on May 3, 2025:

1. Barona Band of Diegueno Mission Indians
2. Campo Band of Diegueno Mission Indians
3. Fort Independence Indian Community
4. Moapa Band of Paiutes
5. Paiute Indian Tribe of Utah
6. Pueblo of Zuni
7. San Juan Southern Paiute Tribe
8. San Pasqual Band of Diegueno Mission Indians

The Chemehuevi Indian Tribe, Hualapai Indian Tribe, and Twenty-Nine Palms Band of Mission Indians responded to the initial letter and requested consultation for the proposed Project. Tribal representatives conducted site visits on November 4, 2025, and January 14, 2026. Representatives from the Chemehuevi Indian Tribe, Twenty-Nine Palms Band of Mission Indians, Fort Mojave Indian Tribe, and the Las Vegas Paiute Tribe attended to learn more about the proposed Project and discuss potential impacts to resources important to their Tribe in the Project Area. Tribal consultation for the proposed Project under AB 52 is ongoing and has not yet been completed.

The Project Area lies within an area identified as the Salt Song Trail, which is a Southern Paiute and Chemehuevi sacred trail system that makes a circuit between the Mojave and Colorado Deserts and the southern portion of the Wasatch Range, passing through Utah, Nevada, California, and Arizona (Wright 2022; EIR Appendix 6). The trail is believed to be traveled by the deceased, with the aid of traditional practitioners who, through song, story, and prayer, usher the deceased along the path on their post-burial journey to the afterlife (Imperial County Planning and Development Services Department 2015:2-45). A precise delineation and boundary justification for the Salt Song Trail Landscape is difficult because the landscape extends over a large swath of the Southwest and California (Musser-Lopez and Miller 2010). The California Energy Commission (CEC) determined that the Salt Song Landscape is eligible for listing on the CRHR as a district (Gates 2012). No formally designated tribal cultural resources have been disclosed to the County within the Project Area; however, ongoing consultation with Tribes in the region and on the Project have indicated that there are several issues of concern, including precontact archaeological sites, water use, wildlife, visual resources, and impacts to vegetation.

4.5.2 Regulatory Setting

4.5.2.1 Federal

NATIONAL HISTORIC PRESERVATION ACT OF 1966

The NHPA established both the NRHP and the Advisory Council on Historic Preservation (ACHP). Under NHPA, significant cultural resources, or historic properties, include prehistoric or historic districts, sites, buildings, structures, or objects listed in or eligible for the NRHP. These properties may also include artifacts, records, and remains associated with them, and can encompass properties of traditional religious or cultural importance to Native American Tribes or Native Hawaiian organizations. Some historic properties are further recognized as National Historic Landmarks, indicating their exceptional national significance.

The NRHP is the official federal list of places considered worthy of preservation, managed by the National Park Service (NPS) within the U.S. Department of the Interior. It includes National Historic Landmarks and other historic sites overseen by NPS.

To be listed in or deemed eligible for the NRHP, a property must meet at least one of the following criteria (36 Code of Federal Regulations [CFR] Section 60.4):

A. Associated with events that have made a significant contribution to the broad patterns of our history; or

B. Associated with the lives of persons significant in our past; or

C. Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

Additionally, a property must retain historic integrity, meaning it can effectively convey its significance. Integrity is evaluated through seven aspects: location, design, materials, workmanship, setting, feeling, and association. Most eligible properties possess several, if not all, of these qualities.

4.5.2.2 State

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires analysis of impacts to historical resources and defines historical resources as those listed in or determined to be eligible for listing in the CRHR. A historical resource includes, but is 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 (PRC Section 5020.1).

Section 15064.5 of the State CEQA Guidelines states the term “historical resources” shall include the following:

> (1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code § 5024.1, Title 14 CCR, Section 14 CCR, Section 4850 et seq.).

(2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 14 CCR, Section 4852).

(4) The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.

Pursuant to CEQA, the assessment of impacts to historical resources involves a two-step process including identifying whether a project site contains or is located near any historical resources, and evaluating whether a proposed project would cause a "substantial adverse change" to the significance of those resources. A "substantial adverse change" is defined as an alteration that materially impairs the physical characteristics that convey the resource's significance and support its eligibility for listing on federal, State, or local historic registers.

California Register of Historical Resources

The CRHR serves as an authoritative reference for State and local agencies, private organizations, and the public to identify and protect California's historical resources from substantial adverse change. Eligibility criteria for the CRHR are modeled after those established for the NRHP. Statutorily, certain resources are automatically included in the CRHR, such as California properties formally listed in or determined eligible for the NRHP, State Landmarks, and State Points of Interest.

According to PRC Section 5024.1(c), a resource may be considered historically significant if it retains integrity and meets at least one of the following criteria. A property may be listed in the CRHR if the resource:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

The California Office of Historic Preservation (OHP) is vested with broad authority under both federal and State law to manage and implement historic preservation programs throughout California. The State Historic Preservation Officer is responsible for determining eligibility of properties for listing in the NRHP.

The standard for evaluating "substantial adverse effect" is defined in PRC Sections 5020.1(q) and 21084.1. A substantial adverse change is characterized by demolition, destruction, relocation, or alteration that would impair the significance of a historical resource. Such impairment constitutes an adverse environmental impact. In accordance with the State CEQA Guidelines, a significant impact occurs if a project would alter the significance of a cultural resource. Potentially significant impacts include demolition, replacement, substantial alteration, or relocation of the resource. The significance of a resource must be determined prior to evaluating the level of significance of project-related activities through the following steps in order to comply with the State CEQA Guidelines:

- Identify cultural resources.
- Evaluate the significance of the cultural resources based on established thresholds of significance.
- Evaluate the effects of a project on all cultural resources.
- Develop and implement measures to mitigate the effects of a project on significant cultural resources.

Assembly Bill 52

The passage of AB 52 amended CEQA to recognize tribal cultural values alongside scientific and archaeological values when assessing project impacts and mitigation measures. This legislation established the category of "tribal cultural resources." According to PRC Section 21074, a resource qualifies as a tribal cultural resource if it is listed or determined eligible for listing in the NRHP, CRHR, or a local register of historic resources; or if a lead agency, using CRHR criteria and considering the cultural significance to a California Native American Tribe, elects to treat the resource as a tribal cultural resource.

To identify tribal cultural resources, lead agencies are required to consult with local Native American Tribes that are traditionally and culturally affiliated with the geographic area of a proposed project, as defined in PRC Section 21073. This consultation must be conducted in a manner that respects the cultural values of all parties and, where feasible, seeks consensus regarding proposed actions. Projects that may result in a substantial adverse change to the significance of a tribal cultural resource are considered to have a potentially significant environmental effect under CEQA (PRC Section 21084.2).

PRC Section 21080.3.1 mandates that, within 14 days of determining a project application is complete or deciding to undertake a project, the lead agency must provide formal notification to the designated contact or Tribal representative of California Native American Tribes that have requested notification in writing and are culturally affiliated with the project area. Tribes interested in consultation must respond in writing within 30 days of receiving the lead agency's formal notification. Upon receiving a request for consultation, the lead agency must initiate consultation within 30 days, as specified in PRC Sections 21080.3.1(d) and 21080.3.1(e).

CALIFORNIA POINTS OF HISTORICAL INTEREST

California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. Points of historical interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the CRHR. No historic resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired.

To be eligible for designation as a Point of Historical Interest, a resource must meet at least one of the following criteria:

- The first, last, only, or most significant of its type within the local geographic region (city or county);
- Associated with an individual or group having a profound influence on the history of the local area; or
- A prototype of, or an outstanding example of, a period, style, architectural movement, or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

CALIFORNIA HISTORICAL LANDMARKS

California Historical Landmarks (CHLs), similar to California Points of Historical Interest, are buildings, structures, sites, or places that have anthropological, architectural, cultural, economic, experimental, military, political, scientific, technical, religious, or other value. In order to receive designation as a California Historical Landmark, the resource must meet at least one of the same criteria used to designate a Point of Historical Interest as well as have the approval of the property owner(s), be recommended by the State Historical Resources Commission, and be officially designated by the Director of California State Parks.

PUBLIC RESOURCES CODE SECTION 5097.98

PRC Section 5097.91 established the California Native American Heritage Commission (NAHC), whose duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

The NAHC identifies, catalogs, and protects Native American cultural resources on public and private lands in California. The NAHC is also responsible for ensuring California Native American Tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act.

CALIFORNIA PUBLIC RECORDS ACT

Sections 6254(r) and 6254.10 of the California Public Records Act, as codified in the California Government Code, were established to safeguard archaeological sites from unauthorized excavation, looting, and vandalism. Section 6254(r) authorizes public agencies to withhold information from public disclosure regarding Native American graves, cemeteries, and sacred places maintained by the NAHC. Section 6254.10 exempts from disclosure any records related to archaeological site information and

reports maintained or possessed by the California Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, other State agencies, or local agencies. The exemption also applies to records obtained through consultation processes between Native American Tribes and State or local agencies.

CALIFORNIA HEALTH AND SAFETY CODE SECTIONS 7050 AND 7052

California Health and Safety Code (HSC) Section 7050.5 requires that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease immediately, and the County Coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives or for the purpose of reinterment or cremation under authority of law.

CALIFORNIA PENAL CODE SECTION 622.5

California Penal Code Section 622.5 provides misdemeanor penalties to every person, not the owner thereof, who willfully injures, disfigures, defaces, or destroys any object or thing of archaeological or historical interest or value, whether situated on private lands or within any public park or place.

CALIFORNIA PUBLIC RESOURCES CODE SECTION 5097

PRC Section 5097.5 provides misdemeanor penalties to any person that knowingly and willfully excavates upon, or removes, destroys, injures, or defaces, 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.

4.5.2.3 Local

SAN BERNARDINO COUNTYWIDE PLAN

The Cultural Resource Element of the San Bernardino Countywide Plan (CWP) establishes direction on notification, coordination, and partnerships to preserve and conserve cultural resources, provides guidance on how new development can avoid or minimize impacts on cultural resources, and provides direction on increasing public awareness and education efforts about cultural resources in San Bernardino County (County of San Bernardino 2020). Relevant goals and policies from the Cultural Resource Element of the County Policy Plan are summarized in Table 4.5-4 (County of San Bernardino 2020).

Table 4.5-4. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Cultural Resource Element	
Goal CR-1	**Tribal Cultural Resources.** Tribal cultural resources that are preserved and celebrated out of respect for Native American beliefs and traditions.
Policy CR-1.1	**Tribal notification and coordination.** The County will notify and coordinate with tribal representatives in accordance with state and federal laws to strengthen their working relationship with area tribes, avoid inadvertent discoveries of Native American archaeological sites and burials, assist with the treatment and disposition of inadvertent discoveries, and explore options of avoidance of cultural resources early in the planning process.
Policy CR-1.2	**Tribal planning.** The County will collaborate with local tribes on countywide planning efforts and, as permitted or required, planning efforts initiated by local tribe.

Goal/Policy	Goal/Policy Description
Policy CR-1.3	**Mitigation and avoidance.** The County will consult with local tribes to establish appropriate project-specific mitigation measures and resource-specific treatment of potential cultural resources. The County requires project applicants to design projects to avoid known tribal cultural resources, whenever possible. If avoidance is not possible, the County requires appropriate mitigation to minimize project impacts on tribal cultural resources.
Policy CR-1.4	**Resource monitoring.** The County encourages active participation by local tribes as monitors in surveys, testing, excavation, and grading phases of development projects with potential impacts on tribal resources.
Goal CR-2	**Historic and Paleontological Resources.** Historic resources (buildings, structures, or archaeological resources) and paleontological resources that are protected and preserved for their cultural importance to local communities as well as their research and educational potential.
Policy CR-2.1	**National and state historic resources.** The County encourages the preservation of archaeological sites and structures of state or national significance in accordance with the Secretary of Interior's standards.
Policy CR-2.2	**Local historic resources.** The County encourages property owners to maintain the historic integrity of resources on their property by (listed in order of preference): preservation, adaptive reuse, or memorialization.
Policy CR-2.3	**Paleontological and archaeological resources.** The County strives to protect paleontological and archaeological resources from loss or destruction by requiring that new development includes appropriate mitigation to preserve the quality and integrity of these resources. We require new development to avoid paleontological and archeological resources whenever possible. If avoidance is not possible, we require the salvage and preservation of paleontological and archeological resources.
Policy CR-2.4	**Partnerships.** The County encourages partnerships to champion and financially supports the preservation and restoration of historic sites, structures, and districts.
Policy CR-2.5	**Public awareness and education.** The County increases public awareness and conducts education efforts about the unique historic, natural, tribal, and cultural resources in San Bernardino County through the County Museum and in collaboration with other entities.

4.5.3 Thresholds of Significance

4.5.3.1 Cultural Resources

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to cultural resources if the project would:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

c) Disturb any human remains, including those interred outside of dedicated cemeteries.

Each of these thresholds is discussed under Section 4.5.5, *Project-Specific Impacts and Mitigation Measures*, specifically under Section 4.14.5.1, *Cultural Resources*, below.

4.5.3.2 Tribal Cultural Resources

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to tribal cultural resources if the project would:

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
    ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Each of these thresholds is discussed under Section 4.5.5, *Project-Specific Impacts and Mitigation Measures*, specifically under Section 4.14.5.2, *Tribal Cultural Resources*, below.

4.5.4 Impact Assessment Methodology

The purpose of a CEQA analysis of archaeological and historic built environment resources is to determine whether a proposed project will affect any cultural resources that qualify as historical resources, as defined by CEQA. Cultural resources that are impacted either directly or indirectly by a project may cause a substantial material change to the integrity of the resource or its immediate surroundings, based on the State CEQA Guidelines Appendix G thresholds of significance, detailed above. Direct impacts include the physical demolition, replacement, substantial alteration, or relocation of historical resources that result in the material impairment of a resource. Indirect impacts may include visual, auditory, and atmospheric changes to the immediate surrounding of a historical resource that results in the loss of integrity to the resource.

Cultural resources assessments were completed to assess the potential for adverse impacts to cultural resources as a result of ground disturbance associated with the California portion of the proposed Project (Powell and Winslow 2018; Winslow 2021, 2014; Winslow and Vicari 2025). This assessment included SCCIC and BLM record searches and literature reviews, archival research, intensive pedestrian surveys, and archaeological test excavations. The indirect impact analysis was conducted to inventory historical resources within the surrounding area that may be indirectly impacted by atmospheric, auditory, or visual intrusions from the proposed Project. Impact analysis for tribal cultural resources was informed by the County's consultation with California Native American Tribes in accordance with AB 52 (ongoing as of January 2026). PRC Section 21084.2 states that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. The State CEQA Guidelines do not define what constitutes a significant adverse change that is specific to tribal cultural resources, but the criteria for historical resources given in the State CEQA Guidelines Section 15064.5(b) provide an appropriate analog for assessing potential impacts to tribal cultural resources, especially where the tribal cultural resource is designated based on its eligibility or listing on the CRHR.

4.5.5 Project-Specific Impacts and Mitigation Measures

4.5.5.1 Cultural Resources

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

IMPACT CR-1: THE PROJECT WOULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE PURSUANT TO SECTION 15064.5. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

Two historic built environment resources that qualify as historical resources under CEQA were identified within the utility ROW of the Project Area—the Nipton townsite (P-36-003066/CA-SBR-2066H) and two earthen levees that are associated with the larger Nipton townsite (P-36-024864/CA-SBR-2486H). The Nipton townsite (P-36-003066/CA-SBR-2066H) will be avoided through Project design; however, a portion of the earthen levees (P-36-024864/CA-SBR-2486H) will be directly impacted by the proposed Project. No historical resources were identified within one mile of the Project Area that will be indirectly impacted by the proposed Project.

As a result of this analysis, it was determined that development of the proposed Project could impact significant historical resources and that mitigation measures are necessary to reduce or avoid impacts to less-than-significant levels. Upon implementation of Mitigation Measure MM-CR-1.1, the proposed Project would not cause a substantial adverse change in the significance of historical resources pursuant to Section 15064.5. Therefore, impacts would be *less than significant with mitigation*.

Impact CR-1	
The Project would cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.	
Mitigation Measures	
MM-CR-1.1	***Historical Resources Treatment Plan (HRTP).*** *A Historical Resources Treatment Plan (HRTP) shall be prepared and submitted for approval for California Register of Historical Resources (CRHR)-eligible cultural resources and tribal cultural resources. Treatment of cultural resources and tribal cultural resources shall follow the procedures established by State and local regulations. Avoidance, documentation, and/or data recovery will be used as mitigation alternatives. The HRTP shall be submitted to San Bernardino County for review and approval.* *As part of the HRTP, a research design and a scope of work shall be prepared for evaluation of cultural resources and data recovery investigations or additional treatment of CRHR-eligible sites or tribal cultural resources that cannot be avoided. Data recovery of most resources would consist of sample excavation and/or surface artifact collection, as well as site documentation. A possible exception would be a site or tribal cultural resource where burials, cremations, or sacred features are discovered that cannot be avoided. The HRTP shall define and map all known CRHR-eligible resources and tribal cultural resources and shall identify the cultural values that contribute to their CRHR eligibility and significance to the affiliated Tribes.* *A cultural resources protection plan shall be included in the HRTP that details how CRHR-eligible resources and tribal cultural resources will be avoided and protected during construction. Measures shall include, at a minimum, designation and marking of Environmentally Sensitive*

Impact CR-1
Areas (ESAs), cultural resource monitoring, and Worker Environmental Awareness Program (WEAP) training. *The HRTP shall provide detailed provisions for cultural monitoring activities and include procedures for halting construction; making appropriate notifications to agencies, officials, and Native Americans; assessing CRHR eligibility in the event that unknown cultural resources are discovered during construction; and reporting requirements.* *For all unanticipated cultural resource and tribal cultural resource discoveries, the HRTP shall detail the methods, consultation procedures, and timelines for assessing CRHR eligibility, formulating a mitigation plan, and implementing treatment. Mitigation and treatment plans for unanticipated discoveries shall be approved by San Bernardino County, the Bureau of Land Management (if applicable), and Native American consulting Tribes prior to implementation. The HRTP shall include provisions for analysis of data in a regional context; reporting of results; the disposition of artifacts and data; and dissemination of reports to State and local repositories.* *The HRTP will be prepared and implemented by archaeologists and other discipline specialists conducting the studies that meet the Secretary of the Interior's Standards (per 36 Code of Federal Regulations 61).*
Impacts Following Mitigation
With implementation of Mitigation Measure MM-CR-1.1 to address the substantial adverse change in the significance of a historical resource, impacts would be less than significant.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

IMPACT CR-2: THE PROJECT COULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE PURSUANT TO STATE CEQA GUIDELINES SECTION 15064.5 DURING PROJECT CONSTRUCTION. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

Nine archaeological resources have been identified within the Project Area that are eligible or assumed eligible for listing in the CRHR. Avoidance and preservation in place is the preferred manner to mitigate impacts to significant archaeological resources. If CRHR-eligible sites cannot be avoided through Project design, then the proposed Project would result in direct impacts to significant archaeological resources. No archaeological resources were identified within one mile of the Project Area that will be indirectly impacted by the proposed Project.

Ground-disturbing activities also have the potential to encounter subsurface archaeological resources that have not been previously identified in the Project Area. The archaeological materials uncovered during Project development may possess the necessary attributes to be considered eligible for the CRHR. If archaeological resources discovered during ground-disturbing activities meet the eligibility requirements for listing in the CRHR and retain their integrity, they would be historical resources under CEQA.

As a result of this analysis, it was determined that ground disturbance for the proposed Project could impact significant archaeological resources and that mitigation measures are necessary to reduce or avoid impacts to less-than-significant levels. Upon implementation of Mitigation Measure MM-CR-1.1, the proposed Project would not cause a substantial adverse change in the significance of an archaeological

resource pursuant to State CEQA Guidelines Section 15064.5. Therefore, impacts would be *less than significant with mitigation*.

Impact CR-2
The Project could cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5 during Project construction.
Mitigation Measures
Implement Mitigation Measure MM-CR-1.1.
Impacts Following Mitigation
With implementation of Mitigation Measure MM-CR-1.1 to address the inadvertent discovery of unknown archaeological resources, construction impacts would be less than significant.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

IMPACT CR-3: THE PROJECT COULD DISTURB PREVIOUSLY UNIDENTIFIED HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF DEDICATED CEMETERIES, IF PRESENT WITHIN THE PROJECT AREA OF DISTURBANCE. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

One archaeological resource, the Hart Townsite (P-36-003060/CA-SBR-3060/H), contains a historic-era cemetery. If the portion of the site (Locus 18) containing the cemetery cannot be avoided, the proposed Project could result in impacts to human remains in a dedicated cemetery. Additionally, there is a possibility that human remains, including those interred outside of dedicated cemeteries, may be encountered unexpectedly during ground-disturbing activities. As such, it is recommended that inadvertent discovery protocols for human remains be implemented during Project construction to comply with CEQA and best practice standards. With the implementation of Mitigation Measure MM-CR-1.1 and CR-3.1, the proposed Project would not cause a significant disturbance to any human remains, including those interred outside of dedicated cemeteries. Therefore, impacts would be *less than significant with mitigation*.

Impact CR-3	
The Project could disturb previously unidentified human remains, including those interred outside of dedicated cemeteries, if present within the Project area of disturbance.	
Mitigation Measures	
MM-CR-3.1	***Identification of Human Remains.*** *For human remains discovered on Bureau of Land Management (BLM)-administered land, a plan for securing the discovery site and subsequent actions shall be included in the Historical Resources Treatment Plan (HRTP) required under Mitigation Measure MM-CR-1.1. In the event of a discovery, the BLM must be contacted immediately and California Health and Safety Code (HSC) Section 7050.5 states that no further disturbance shall occur until San Bernardino County (County) Coroner has made the necessary findings as to origin. If the discovery is determined to be subject to the Native American Graves Protection and Repatriation Act (25 United States Code 3001 and 43 Code of Federal Regulations 10), the plan will describe the necessary process for notification of Tribes and*

Impact CR-3
subsequent steps as required by law and regulations. For human remains discovered on private lands, HSC Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code (PRC) Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to treatment and disposition has been made. If the County Coroner determines the remains to be Native American, the Native American Heritage Commission (NAHC) shall be contacted within the period specified by law. The NAHC shall identify the "Most Likely Descendant," who shall then make recommendations to and engage in consultation with the County and property owner concerning the treatment of the remains as provided in PRC Section 5097.98. The landowner may reach an agreement with the Most Likely Descendant for treating and disposing of human remains pursuant to State CEQA Guidelines Section 15064.5(d). Human remains from other ethnic/cultural groups with recognized historical associations to the Project Area shall also be subject to consultation between appropriate representatives from that group and the County.
Impacts Following Mitigation
Based on required compliance with HSC Section 7050.5 and the PRC and implementation of Mitigation Measures MM-CR-1.1 and MM-CR-3.1, impacts would be reduced to less than significant with mitigation.

4.5.5.2 Tribal Cultural Resources

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

IMPACT TCR-1: THE PROJECT WOULD NOT CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A TRIBAL CULTURAL RESOURCE AS DEFINED IN PRC SECTIONS 5020.1(K) AND 5024.1(C). ***(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)***

Native American groups with Tribal territories that fall within the study area include the Nuwuvi (Southern Paiute), Nüw (Chemehuevi), and Aha Makhav (Mojave). An initial letter requesting consultation under AB 52, NHPA Section 106, and NAGPRA was sent via certified U.S. mail to the following 22 Native American tribes Tribes on April 18, 2025:

1. Big Pine Paiute Tribe of the Owens Valley
2. Chemehuevi Indian Tribe
3. Cocopah Indian Tribe
4. Colorado River Indian Tribes
5. Fort Independence Indian Community
6. Fort Mojave Indian Tribe
7. Fort Yuma Quechan Tribe
8. Havasupai Tribe
9. Hopi Tribe
10. Hualapai Indian Tribe
11. Jamul Indian Village

12. Kaibab Band of Paiute Indians
13. Las Vegas Paiute Tribe
14. Las Vegas Tribe of Paiute Indians
15. Lone Pine Paiute-Shoshone Tribe
16. Moapa Band of Paiute Indians
17. Pahrump Paiute Tribe
18. Timbi-sha Shoshone Tribe
19. Twenty-Nine Palms Band of Mission Indians
20. Utu Utu Gwaitu Paiute Tribe
21. Yavapai-Apache Indian Nation
22. Yavapai-Prescott Indian Tribe

The Chemehuevi Indian Tribe, Hualapai Indian Tribe, and Twenty-Nine Palms Band of Mission Indians responded to the initial letter and requested consultation for the Project. BLM invited Tribal Representatives to site visits on November 4, 2025, and January 14, 2026. Representatives from the Chemehuevi Indian Tribe, Twenty-Nine Palms Band of Mission Indians, Fort Mojave Indian Tribe, and the Las Vegas Paiute Tribe attended to learn more about the Project and discuss potential impacts to resources important to their Tribe in the Project Area. Additional site visits would be conducted upon request. The proposed Project has the potential to result in physical impacts to five precontact archaeological resources that are eligible or assumed eligible for listing in the CRHR, as well as lands within the Salt Song Trail Landscape area. Impacts to tribal cultural resources would be determined in consultation with California Native American Tribes. Government-to-government consultation for the Project as well as consultation under Section 106 and AB 52 is on-going and has not yet been completed for the Project.

Impact TCR-1
The Project would not cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Sections 5020.1(k) and 5024.1(c).
Mitigation Measures
Implement Mitigation Measure MM-CR-1.1
Impacts Following Mitigation
Based on required compliance with the PRC and implementation of Mitigation Measure MM-CR-1.1, impacts would be reduced to less than significant with mitigation.

4.5.6 Cumulative Impacts

4.5.6.1 Cultural Resources

IMPACT CR-4: THE PROJECT COULD RESULT IN THE CUMULATIVE DISTURBANCE AND DESTRUCTION OF CULTURAL RESOURCES, INCLUDING HISTORIC AND ARCHAEOLOGICAL RESOURCES, PURSUANT TO STATE CEQA GUIDELINES SECTION 15064.5, OR HUMAN REMAINS. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

Implementation of the proposed Project could contribute to the cumulative degradation of significant cultural resources in San Bernardino County. The destruction of cultural resources can have the potential for significant cumulative impacts that are inherently important to the descendants of Indigenous peoples and make the study of prehistoric and historic life unavailable for study by scientists. Eleven cultural resources, including two historic built environments and nine archaeological resources, have been identified within the Project Area that are eligible or assumed eligible for listing in the CRHR. If avoidance of CRHR-eligible resources is not possible, then implementation of Mitigation Measures MM-CR-1.1 and MM-CR-3.1 would reduce potential impacts associated with known historical and archaeological resources to a less-than-significant level. Because the inadvertent discovery of subsurface archaeological resources during Project construction could occur, implementation of Mitigation Measures MM-CR-1.1 and MM-CR-3.1 would reduce potential impacts associated with the unanticipated discovery of unknown buried archaeological resources. Implementation of Mitigation Measure MM-CR-3.1 would reduce potential impacts on human remains to a less-than-significant level. Future projects with potentially significant impacts on cultural resources would be required to comply with federal, State, and local regulations and ordinances protecting cultural resources through implementation of similar Project-specific mitigation measures during Project construction. Therefore, through compliance with regulatory requirements, standard conditions of approval, and Mitigation Measures MM-CR-1.1 and MM-CR-3.1, the potential cumulative impacts resulting from the proposed Project are considered *less than significant with mitigation* and less than cumulatively considerable.

Impact CR-4 (Cumulative Impacts)
The Project could result in the cumulative disturbance and destruction of cultural resources, including historic and archaeological resources, pursuant to State CEQA Guidelines Section 15064.5, or human remains.
Mitigation Measures
Implement Mitigation Measures MM-CR-1.1 and MM-CR-3.1.
Impacts Following Mitigation
With implementation of Mitigation Measures MM-CR-1.1 and MM-CR-3.1, cumulative impacts to known and potentially unknown cultural resources would be less than significant.

4.5.6.2 Tribal Cultural Resources

IMPACT TCR-2: THE PROJECT COULD RESULT IN THE CUMULATIVE DISTURBANCE AND DESTRUCTION OF TRIBAL CULTURAL RESOURCES, INCLUDING KNOWN AND UNKNOWN CRHR-ELIGIBLE RESOURCES AND RESOURCES CONSIDERED BY THE COUNTY TO BE SIGNIFICANT TRIBAL CULTURAL RESOURCES PURSUANT TO PRC SECTION 5024.1. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

Tribal cultural resources are nonrenewable, irreplaceable, and inherently important to the Native American descendants, and their destruction prevents further study of past lifeways and history. Projects that could be developed in or near the Project Area include the projects listed in Table 3-1 of Chapter 3, *Environmental Setting*, as well as additional development projects beyond the geographic limit of the cumulative project listing in Chapter 3. Due to evidence of Native Americans within the Project Area and the surrounding area, there is moderate potential for the inadvertent discovery of Native American archaeological sites within the Project Area. Therefore, the development of projects in the Project Area could result in the destruction of tribal cultural resources and would have the potential to result in cumulative impacts associated with the loss of tribal cultural resources. Given the potential for tribal cultural resources and the number of construction activities that involve disturbance of areas sensitive for tribal cultural resources, cumulative impacts to tribal cultural resources could occur through physical demolition, destruction, relocation, or alteration to a resource such that it would cause an adverse change in the significance of tribal cultural resources—CRHR-eligible resources as defined in PRC Section 2020.1(k) or resources considered by the County to be tribal cultural resources pursuant to PRC Section 5024.1.

The proposed Project has the potential to contribute to a loss of tribal cultural resources that could combine with impacts from past, present, and reasonably foreseeable projects prior to implementation of the mitigation measures outlined previously in this section. The Project's contribution toward cumulative effects on tribal cultural resources in the region could be significant if mitigation measures were not required and implemented to address the potential for direct impacts and the potential for the Project to contribute to cumulative impacts.

Impact TCR-2 (Cumulative Impacts)
The Project could result in the cumulative disturbance and destruction of tribal cultural resources, including known and unknown CRHR-eligible resources and resources considered by the County to be significant tribal cultural resources pursuant to PRC Section 5024.1.
Mitigation Measures
Implement Mitigation Measure MM-CR-1.1.
Impacts Following Mitigation
With implementation of Mitigation Measures MM-CR-1.1, cumulative impacts to known and potentially unknown tribal cultural resources would be less than significant.

4.6 ENERGY

This section of the EIR analyzes potential impacts related to energy resulting from the implementation of the proposed Project. The analysis is based on a review of existing resources, technical data, and applicable laws, regulations, and guidelines, as well as technical reports prepared for the proposed Project. The analysis is also informed by the energy significance criteria set forth in Appendix G of the State CEQA Guidelines, including consideration of whether the proposed Project would result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.

4.6.1 Existing Conditions

Consumption of energy is generally a result of the construction and operation of new buildings and structures within the built environment and can be categorized as direct or indirect consumption. Direct energy use includes fuel used to operate construction equipment and the energy used for building equipment or utility systems, including lighting, control mechanisms for facilities (e.g., water pumps), and irrigation systems. Indirect sources of energy use include long-term consumption of energy during the repair or maintenance of equipment.

4.6.1.1 Regional Conditions

ELECTRICITY

Electricity is produced through the conversion of energy resources (e.g., fossil fuels, nuclear power, renewable power) and is consumed for various uses, including lighting, heating and cooling systems, and appliances, as well as alternative fuel vehicles and other industrial processes. The rate at which energy is consumed or generated is expressed in megawatts, while total energy consumption or generation over time is quantified in megawatt-hours, kilowatt-hours, or gigawatt-hours.

In California, energy production, consumption, and related research are managed and regulated by the California Energy Commission (CEC) and California Public Utilities Commission (CPUC), respectively. Most of California's electricity is generated in-state, with imports from the Northwest and Southwest accounting for approximately 30% in 2023 (CEC 2023). In 2024, California was the fourth-largest producer of electricity and the third-largest consumer of electricity in the nation. While California is the second-largest total energy consumer nationwide, it is ranked as the third-lowest for energy consumption on a per-capita basis.

California consistently ranks among the top energy consumers in the nation due to its large population and diversified economy, with energy use spread across transportation, residential, commercial, and industrial sectors. California's total electricity sales and broader energy consumption are high in absolute terms, yet the State's aggressive efficiency standards, climate policies, and clean energy deployment have helped keep per-capita energy use among the lowest in the United States, even as the State continues transitioning toward renewable sources and reducing dependence on fossil fuels. California was one of the largest energy consumers in the nation in 2023, with total energy consumption of about 6,816.7 trillion British thermal units (Btu). California's high total reflects its large population and diversified economy across transportation, industry, residential, and commercial sectors.

In Nevada, total energy consumption is substantially lower than larger states due to its smaller population and limited industrial base, and the state relies heavily on energy imports, particularly for electricity and fossil fuels, because it produces only modest amounts of natural gas and crude oil compared with the energy it consumes. Renewables, especially solar and geothermal, comprise a growing share of in-state

electricity generation, but Nevada remains a net importer of energy to meet overall demand. Nevada's total energy consumption in 2023 was approximately 689 trillion Btu, reflecting its smaller economy and population.

PETROLEUM FUELS

Petroleum fuels are produced through the process of extraction and refinement of crude oil and include gasoline, diesel, and other high-energy-density fuels, which are primarily consumed by on- and off-road equipment as well as some industrial processes. Currently, the United States is the world's top producer of petroleum. In 2024, California ranked as the eighth-largest producer nationally of crude oil (U.S. Energy Information Administration 2025).

Statewide drilling operations in California are concentrated predominantly in Kern and Los Angeles Counties, with production areas connected to oil refineries by a network of crude oil pipelines. The crude oil pipelines extend from the Los Angeles area to San Francisco and the Central Valley, reinforcing California's high capacity for crude oil refinement. California also processes Alaskan and foreign crude oil, which is received at ports across Long Beach, Los Angeles, and the San Francisco Bay area.

In California, gasoline and diesel are the most widely used transportation fuels. Gasoline, the leading transportation fuel, primarily powers light-duty vehicles, including cars, pickup trucks, and sport utility vehicles. Diesel, the second most used transportation fuel, is primarily consumed by heavy-duty vehicles, including public transit buses, long-haul trucks, and freight trains. Diesel is also used for construction, agriculture, and port operations.

OTHER ENERGY TYPES

In addition to electricity and petroleum fuels, natural gas is used across California for residential, commercial, and industrial purposes. Natural gas is a fossil fuel formed when layers of buried organic matter are exposed to intense heat and pressure over thousands of years. The energy is stored in the form of hydrocarbons and can be extracted in the form of natural gas, which can be combusted to generate electricity, enabling this stored energy to be transformed into usable power or to be used directly for heating, cooking, and other uses. Of all energy sources, natural gas provides the largest portion of the total in-state capacity and electricity generation in California (CEC 2025). However, projected natural gas demand in California is forecasted to decline through 2040 due to increasingly aggressive energy efficiency goals, anticipated dual substitution, and tightening of Title 24 Codes and Standards (SoCalGas 2024).

California is also among the top states in the nation in electricity generation from renewable resources. In 2023, California was the nation's top producer of electricity from solar, geothermal, and biomass energy. Renewable electricity generation accounted for 58% of California's total electricity generation in 2023 (CEC 2023).

While other energy sources, including natural gas and renewables, serve the general area of the proposed Project, these sources are not expected to be altered or directly serve the proposed Project and thus are not discussed further.

4.6.1.2 Local Setting

CLIMATE

California's climate is marked by diversity, from dry desert regions in the southeast to cold and precipitous regions in the north. The Project Area is in the Inland Deserts region of California,

characterized by a desert climate that houses some of the hottest and most arid conditions in the United States, and is historically marked by periods of drought and intermittent intense precipitation. The Project Area is near the southern border of Nevada, the driest state in the United States, where in the past 10 years, the average annual precipitation has decreased by 2.2% and average annual temperatures have increased by 5.7% when compared to the beginning of the twentieth century.

Precipitation is highly variable both spatially and temporally in California, with the southeastern region experiencing annual precipitation rates of less than three inches per year. Since the start of the twentieth century, temperatures have increased by almost 3°F in California, and average annual temperatures from 1991 to 2020 demonstrate that this period was substantially warmer than previous 30-year periods.

The local meteorology of the Mine Area and surrounding area is represented by measurements recorded at the National Climatic Data Center (NCDC) Searchlight, Nevada, meteorological station. The normal annual precipitation is approximately 7.8 inches. December temperatures range from a normal minimum of 36.6°F to a normal maximum of 53.0°F. July temperatures range from a normal minimum of 72.3°F to a normal maximum of 97.4°F (NCDC 2025).

ENERGY SERVICE PROVIDERS

Southern California Edison

Southern California Edison (SCE) is one of the largest electric utility providers in the United States, serving approximately 15 million customers. SCE's service territory covers approximately 50,000 square miles across central, coastal, and Southern California, excluding the city of Los Angeles and some other cities. SCE has made a commitment to delivering reliable, clean, and affordable electricity in addition to prioritizing sustainability and supporting California's goal of achieving net-zero greenhouse gas emissions by 2045. SCE would be the electricity provider for off-site water sourcing.

According to the 2023 Power Content Label, SCE's overall energy resources were supplied from approximately 37.6% of renewable energy resources (i.e., biomass and biowaste, geothermal, eligible hydroelectric, solar, and wind), 4.5% of large hydroelectric sources, 20.0% natural gas, and 9.1% nuclear. Solar accounts for 19.8% of SCE's power mix and is currently the largest renewable energy resource (SCE 2024).

Nevada Energy

Nevada Energy (NV Energy) is a public utility company that provides electricity and natural gas services to much of Nevada. NV Energy covers nearly 46,000 square miles, providing power to both urban and rural areas in Nevada. The company operates a diverse mix of power generation resources, including natural gas, solar, geothermal, and hydroelectric facilities, and is working toward Nevada's goal of achieving 50% renewable energy by 2030 and 100% carbon-free energy by 2050. NV Energy would be the primary electricity provider for the proposed Project.

According to the 2025 Power Content Label, NV Energy's overall energy resources consisted of approximately 66.0% natural gas, 24.1% solar, 4.9% geothermal sources, 2.1% hydroelectric, 1.8% wind, and 0.41% coal (NV Energy 2025).

Existing On-Site Energy Use

Existing mining operations include open heap leach mine pits and overburden sites. Electrical power for existing mining and processing activities is currently supplied by on-site diesel generators, which provide electricity for heap leach, crushing, and agglomeration operations; solution management systems;

lighting; maintenance facilities; and administrative uses. No permanent off-site electrical transmission line currently serves the Mine Area under baseline conditions. In addition to stationary power generation, diesel fuel is used for mobile mining equipment, including haul trucks, loaders, dozers, drills, water trucks, and ancillary support vehicles. Diesel is also used for backup generators and construction or maintenance equipment as needed. Fuel is delivered to the Mine Area and stored in approved on-site fuel tanks in accordance with applicable regulations.

4.6.2 Regulatory Setting

4.6.2.1 Federal

ENERGY POLICY AND CONSERVATION ACT AND CORPORATE AVERAGE FUEL ECONOMY STANDARDS

The Energy Policy and Conservation Act was enacted in 1975 and established fuel economy standards for new light-duty vehicles sold in the United States. As a result of the act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing and regularly updating vehicle standards.

Compliance with federal fuel economy standards is determined based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States. The Corporate Average Fuel Economy (CAFE) program, administered by the USEPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The USEPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. The NHTSA, part of the U.S. Department of Transportation, is responsible for establishing additional vehicle standards and for revising existing standards. Based on the information generated under the CAFE program, the U.S. Department of Transportation is authorized to assess penalties for noncompliance.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon (mpg). Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. In October 2012, the USEPA and NHTSA issued final rules to further reduce GHG emissions and improve CAFE standards for light-duty vehicles for model years 2017 and beyond. The goals of the 2012 program were to increase fuel economy to the equivalent of 54.5 mpg and to limit vehicle emissions to 163 grams of carbon dioxide per mile for the fleet of cars and light-duty trucks by the model year 2025.

In June 2024, the NHTSA finalized updated CAFE standards for model years 2027–2031 for passenger cars and light trucks, which reversed the trajectory created by the 2020 rollback and gradually increased fuel economy requirements through 2031. The 2024 CAFE update targets roughly 50.4 mpg by 2031.

ENERGY POLICY ACT

The Energy Policy Act, signed into law in January 2005, addresses energy production in the United States (e.g., energy efficiency, renewable energy, oil and gas, coal, Tribal energy, nuclear matters and security), vehicles and motor fuels (e.g., ethanol, hydrogen, electricity, energy tax incentives), hydropower and geothermal energy, and climate change technology. This act guarantees loans to corporations that develop or use innovative technologies that do not produce GHG emissions. The Energy Policy Act also includes the Renewable Fuel Standard as a provision, which increases the amount of biofuel that must be mixed with gasoline to be sold in the United States.

ENERGY INDEPENDENCE AND SECURITY ACT

The Energy Independence and Security Act of 2007 was enacted to improve vehicle fuel economy and help reduce dependence on foreign oil. Specifically, the act increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard, which requires fuel producers to use at least 36 billion gallons of biofuel in 2022 and reduces the nation's demand for oil by setting a national fuel economy standard of 35 mpg by 2020, an increase in fuel economy standards of 40%. The Energy Independence and Security Act also sets energy efficiency standards for lighting and appliances.

4.6.2.2 State

WARREN-ALQUIST ACT

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the CEC. The act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The CPUC regulates privately owned utilities in the energy, rail, telecommunications, and water fields.

ASSEMBLY BILL 32: CLIMATE CHANGE SCOPING PLAN AND UPDATES

In October 2008, the California Air Resources Board (CARB) published its first Climate Change Scoping Plan. Updated every 5 years, the Scoping Plan presents the State's plan to achieve the GHG reductions in California required by AB 32. The 2008 Scoping Plan presented the main strategies for achieving the target emission levels identified in AB 32 and included CARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations were associated with improving emissions standards for light-duty vehicles, implementing the Low Carbon Fuel Standard program, implementing energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems, and developing a renewable portfolio standard for electricity production.

The Scoping Plan states that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. CARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors.

The first update of the Scoping Plan, approved by CARB on May 22, 2014, set interim goals for 2030 through 2035 on the way to reaching the 2050 goals. The 2017 Scoping Plan was released in November 2017 and incorporated strategies for achieving the 2030 GHG reduction target established in SB 32 (discussed below) and EO B-30-15.

On November 16, 2022, CARB approved the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan). The 2022 Scoping Plan continues the path to achieve the SB 32 2030 target and expands upon earlier plans by targeting an 85% reduction in GHG below 1990 levels by 2045 (CARB 2022).

SENATE BILL 32 AND ASSEMBLY BILL 197 OF 2016

SB 32, signed by Governor Brown on September 8, 2016, effectively extends California's GHG emission-reduction goals from 2020 to 2030. This new emission-reduction target of 40% below 1990 levels by 2030 is intended to promote further GHG reductions in support of the State's ultimate goal of reducing GHG emissions by 80% below 1990 levels by 2050. SB 32 also directs CARB to update the

Climate Change Scoping Plan to address this interim 2030 emission-reduction target. Achievement of these goals will have the co-benefit of increasing energy efficiency and reducing California's dependency on fossil fuels. AB 197, signed at the same time as SB 32, established legislative oversight of the CARB to increase its accountability.

CALIFORNIA ENERGY PLAN

The CEC is responsible for preparing the California Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The 2008 California Energy Plan, last updated in 2011, calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs.

ASSEMBLY BILL 1007: STATE ALTERNATIVE FUELS PLAN

AB 1007 (Chapter 371, Statutes of 2005) required the CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other federal, state, and local agencies (CEC and CARB 2007). The State Alternative Fuels Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The plan assesses various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing significant degradation of public health and environmental quality.

EXECUTIVE ORDER S-06-06 (BIOENERGY ACTION PLAN)

EO S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower and directs State agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. EO S-06-06 establishes the following targets to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce at least 20% of biofuels within California by 2010, 40% by 2020, and 75% by 2050. EO S-06-06 also calls for the State to meet a target for the use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 plan and provides a more detailed action plan to achieve the following goals:

- Increase environmentally and economically sustainable energy production from organic waste
- Encourage the development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications
- Create jobs and stimulate economic development, especially in rural regions of the state
- Reduce fire danger, improve air and water quality, and reduce waste

CAP-AND-INVEST PROGRAM

The 2008 Climate Change Scoping Plan identified a cap-and-trade program as one of the strategies for California to reduce GHG emissions. The cap-and-trade program was a key element in California's climate plan, setting a statewide limit on sources responsible for 85% of California's GHG emissions and establishing a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013, applying to large electric power

plants and large industrial plants. In 2015, fuel distributors, including distributors of heating and transportation fuels, also became subject to the cap-and-trade rules. At that stage, the program encompassed approximately 360 businesses throughout California and nearly 85% of the State's total GHG emissions. Covered entities subject to the cap-and-trade program include sources that emit more than 25,000 MT CO_2e per year. Triggering of the 25,000 MT CO_2e per year "inclusion threshold" is measured against a subset of emissions reported and verified under the California Regulation for the Mandatory Reporting of Greenhouse Gas Emissions. Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions and are free to buy and sell allowances on the open market. California held its first auction of GHG allowances on November 14, 2012.

California's GHG cap-and-trade system reduced GHG emissions to 1990 levels by 2020. In September 2025, AB 1207 and SB 840 were signed into law, establishing updated climate goals through 2045 and rebranding the program to "Cap-and-Invest." The legislation requires emissions reductions of at least 40% below 1990 levels by the year 2030 and net zero GHG emissions by the year 2045.

CALIFORNIA RENEWABLES PORTFOLIO STANDARD

The California Renewable Portfolio Standard (RPS) program (SB 1078; 2002) requires that 20% of the available energy supplies come from renewable energy sources by 2017. In 2006, SB 1078 accelerated the 20% mandate to 2010. These mandates apply directly to investor-owned utilities. On April 12, 2011, Governor Brown signed into law SB 2X, which modified the California RPS program to require that both public- and investor-owned utilities in California receive at least 33% of their electricity from renewable sources by the year 2020. SB 2X also requires regulated sellers of electricity to meet an interim milestone of procuring 25% of their energy supply from certified renewable sources by 2016.

Senate Bill 350

SB 350, signed October 7, 2015, is the Clean Energy and Pollution Reduction Act of 2015. The objectives of SB 350 are (1) to increase the procurement of electricity from renewable sources from 33% to 50% by the end of 2030; and (2) to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

Senate Bill 100

SB 100, signed September 10, 2018, is the 100 Percent Clean Energy Act of 2018. SB 100 updates the goals of California's RPS and SB 350, as discussed above, to the following: achieve a 50% renewable resources target by December 31, 2026, and achieve a 60% target by December 31, 2030. SB 100 also requires that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers and 100% procured to serve all State agencies by December 31, 2045.

EXECUTIVE ORDER S-01-07 (CALIFORNIA LOW CARBON FUEL STANDARD)

EO S-01-07, the Low Carbon Fuel Standard (LCFS) (issued January 18, 2007), requires a reduction of at least 10% in the carbon intensity of California transportation fuels by 2020. Regulatory proceedings and implementation of the LCFS were directed to CARB. CARB released a draft version of the LCFS in October 2008. The final regulation was approved by the Office of Administrative Law and filed with the Secretary of State on January 12, 2010; the LCFS became effective on the same day.

In calculating statewide emissions and targets, the 2017 update has assumed the LCFS to be extended to an 18% reduction in carbon intensity beyond 2020. On September 27, 2018, CARB approved a rulemaking package that amended the LCFS to relax the 2020 carbon intensity reduction from 10% to 7.5%, and to require a carbon intensity reduction of 20% by 2030.

ASSEMBLY BILL 1279 (CALIFORNIA CLIMATE CRISIS ACT)

In September 2022, the State Legislature adopted AB 1279, known as the California Climate Crisis Act. This bill establishes the State's goal of reaching net-zero GHG emissions as quickly as possible, and no later than 2045, and subsequently sustaining net negative GHG emissions. The act also stipulates that, by 2045, statewide anthropogenic GHG emissions must be reduced by at least 85% below 1990 levels.

SENATE BILL 605 AND SENATE BILL 1383

SB 605, enacted in 2014, directs CARB to develop a comprehensive plan for reducing short-lived climate pollutants (SLCPs) in California (California Health and Safety Code Section 39730). SB 1383, enacted in 2016, further requires CARB to approve and begin implementing this plan by January 1, 2018 (California Public Resources Code [PRC] Sections 42652–43654). SB 1383 sets specific reduction targets for SLCPs: a 40% decrease from 2013 levels by 2030 for methane and hydrofluorocarbons, and a 50% decrease for anthropogenic black carbon. The bill also outlines measures for reducing emissions from dairy and livestock operations, as well as landfills. In response, CARB adopted its SLCP Reduction Strategy in March 2017, which provides a statewide framework for cutting emissions of black carbon, methane, and fluorinated gases.

CALIFORNIA CODE OF REGULATIONS, TITLE 24 (CALIFORNIA BUILDING STANDARDS CODE)

The California Building Standards Code (24 CCR) consists of a compilation of several distinct standards and codes related to building construction, including plumbing, electrical, interior acoustics, energy efficiency, and accessibility for persons with physical and sensory disabilities. These standards are updated every 3 years. The most recent update, the 2025 California Building Standards, went into effect on January 1, 2026.

Building Energy Efficiency Standards/Energy Code (24 CCR Part 6)

The Building Energy Efficiency Standards or the California Energy Code (24 CCR Part 6), originally enacted in 1978, establishes energy efficiency standards for residential and nonresidential buildings to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission. The 2022 standards continue to improve upon the previous (2019) Title 24 standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Compliance with Title 24 is enforced through the building permit process.

California Green Building Standards (24 CCR Part 11)

The California Green Building Standards (CALGreen) Code (24 CCR Part 11) was developed to help the State achieve its GHG emissions reduction goals under AB 32 by codifying standards for reducing building-related energy, water, and resource demand, which in turn reduces GHG emissions from energy, water, and resource demand. The CALGreen Code establishes mandatory measures for new residential and nonresidential buildings, which include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality.

CALIFORNIA CODE OF REGULATIONS, TITLE 20

Requirements for manufacturers to ensure that appliances comply with both federal and state energy and water efficiency standards are established in 20 CCR 1401–1410. The CEC certifies appliances based on evidence provided by manufacturers demonstrating compliance with these standards. New appliances regulated under 20 CCR include refrigerators, refrigerator-freezers, freezers, room air conditioners, room air conditioning heat pumps, central air conditioners, spot air conditioners, vented gas space heaters, gas pool heaters, plumbing fittings and fixtures, fluorescent lamp ballasts, lamps, emergency lighting, traffic signal modules, dishwashers, clothes washers and dryers, cooking products, electric motors, low-voltage dry-type distribution transformers, power supplies, televisions, consumer audio and video equipment, and battery charger systems. Testing protocols are outlined in 20 CCR for each appliance type, requiring them to meet specific standards for energy and water performance and design. Additionally, 20 CCR defines three categories of standards: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

2023–2024 INTEGRATED ENERGY POLICY REPORT

The CEC published the 2023 Integrated Energy Policy Report (IEPR) and subsequent 2024 update to guide and identify pathways to deeply decarbonize the state's electricity system in response to meeting the SB 100 goal of zero-carbon by 2045. The report provides an analysis of electricity sector trends, building decarbonization and energy efficiency, zero-emission vehicles, energy equity, climate change adaptation, electricity reliability, natural gas assessment, and electricity, natural gas, and transportation energy demand forecasts. The aim is to leverage California's clean electricity system to decarbonize, or remove carbon from, other portions of the state's energy system. SB 1389 (Chapter 568, Statutes of 2002) requires the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery, distribution, electricity demand, and price to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the State's economy, and protect public health and safety (CEC 2024). The 2023 IEPR is the most recent full biennial report and was published with analysis on a wide range of energy trends and policy issues. The 2024 IEPR Update was adopted by the California Energy Commission in October 2025. This update supplements the 2023 IEPR with the latest data and forecasts, including a 2024 electricity demand forecast and new topics like wave and tidal energy assessments. The 2025 IEPR is currently in process. The CEC has issued the scoping order and held workshops throughout 2025 as part of developing the 2025 IEPR, with an expected draft release in late 2025 and final adoption anticipated in early 2026.

Assembly Bill 2076: Reducing Dependence on Petroleum

California Assembly Bill 2076 (Reducing Dependence on Petroleum) is a 2000 state law that directed the California Energy Commission and the California Air Resources Board to jointly prepare a strategy to lower the state's reliance on petroleum fuels and expand cleaner alternatives. Under AB 2076, the agencies produced the Reducing California's Petroleum Dependence report with performance-based goals such as increasing the use of alternative fuels (targeting about 20% of on-road fuel by 2020 and 30% by 2030), improving vehicle fuel efficiency, and lowering per-capita vehicle miles traveled (VMT). A broader objective of the bill was to reduce overall petroleum demand to a level at least 15 % below what it was in 2003, encouraging long-term planning and policies to diversify California's transportation energy mix and reduce environmental and economic risks associated with petroleum dependence.

4.6.2.3 Local

SAN BERNARDINO COUNTYWIDE PLAN

The CWP, adopted by the Board of Supervisors in 2020, updates and expands the County's General Plan by addressing the physical, social, and economic issues facing the unincorporated portions of the county (County of San Bernardino 2024a). The CWP consists of the County Policy Plan, the County Business Plan, and a communities plan. The County Policy Plan, based on the former General Plan, consists of 11 elements: Land Use, Housing, Infrastructure and Utilities, Transportation and Mobility, Natural Resources, Renewable Energy and Conservation, Cultural Resources, Hazards, Personal and Property Protection, Economic Development, and Health and Wellness. The County Business Plan consists of a policy-based governance element along with an implementation plan. The communities plan consists of 35 Community Action Guides that provide a framework for communities to create future character and independent identity through community actions. Relevant policies in the Natural Resources, Renewable Energy and Conservation**,** and Hazards Elements of the CWP are summarized in Table 4.6-1 (County of San Bernardino 2024b).

Table 4.6-1. Applicable Policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Natural Resources Element	
Policy NR-1.8	**Construction and operations**. We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.
Policy NR-1.9	**Building design and upgrades.** We use the CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions.
Hazards Element	
Policy HZ-1.11	**Energy efficiency retrofits**. We encourage owners of existing residential and commercial properties to retrofit the walls, doors, windows, ceilings, roofs, ductwork, and other elements of their building envelopes in order to improve energy efficiency and better protect occupants from extreme temperatures.

4.6.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to energy if the project would:

a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Each of these thresholds is discussed under Section 4.6.5, *Project-Specific Impacts and Mitigation Measures*, below.

4.6.4 Impact Assessment Methodology

The following impact assessment is based, in part, on the air quality, GHG emissions, and energy technical report prepared for the proposed Project (Ramboll 2025a). The assessment evaluates energy use during Project construction and operation.

4.6.4.1 Construction

Energy use during Project construction would be associated with the use of off-road construction equipment, on-site hauling and vendor trucks, and worker vehicles. The consumption of large quantities of electricity is not anticipated during Project construction because most construction equipment is diesel- or gas-powered. Fuel efficiency was estimated by vehicle and fleet type based on EMFAC2021 v1.0.1 data for the Mojave Desert Air Quality Management District (MDAQMD), with assumed years of 2026 and 2027. Commuting trips to and from the vanpool were assumed to comprise a default fleet mix, while single-axle vehicles were assumed to have a 50/50 gasoline/diesel fleet, double-axle vehicles were assumed to be all diesel-fueled, and vanpool buses were assumed to be entirely gasoline-fueled.

4.6.4.2 Operations

Project operation would include electricity use for facilities operations and fuel consumption from on-road vehicles and off-road equipment. Transportation fuel-use estimates were calculated by applying average fuel usage rates per vehicle mile to estimated vehicle trips associated with the proposed Project. Fuel efficiency was estimated by vehicle and fleet type based on EMFAC2021 v1.0.1 data for MDAQMD, with an assumed year of 2027. On-site pickup trucks, fuel delivery, product delivery, contractor, other delivery, and reagent delivery trucks are assumed to be entirely diesel-fueled, apart from the liquefied natural gas (LNG) fuel delivery trucks, which are exclusively fueled by compressed renewable natural gas (RNG). Vanpool vans/buses are assumed to be entirely gasoline-fueled. Employee vehicles were assumed to comprise a default fleet mix.

Electricity for on-site facilities will be supplied by approximately 10 megawatts (MW) generated from on-site natural gas turbines and up to 10 MW from the grid via NV Energy, while off-site water sourcing will be powered by SCE.

As the site does not have access to a direct natural gas pipeline, the LNG turbines will be delivered to the site, requiring approximately three fuel deliveries per day to on-site storage tanks. The use of LNG-fired turbines is driven by the proposed Project's remote location, limited grid capacity, and the need for reliable, continuous power to support mining and processing operations. Fully electrifying on-site power demand through grid supply or renewable energy with battery storage was evaluated and determined to be infeasible at this time due to infrastructure constraints, reliability limitations, and the inability of current renewable and storage technologies to meet continuous industrial load requirements.

The proposed on-site generation represents an energy-efficient and operationally reliable approach that minimizes the use of diesel-powered generators and reduces overall energy losses associated with long-distance power transmission.

4.6.5 Project-Specific Impacts and Mitigation Measures

a) Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

IMPACT EN-1: THE PROJECT WOULD NOT RESULT IN POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES DURING PROJECT CONSTRUCTION OR OPERATION. *(LESS THAN SIGNIFICANT)*

Construction

Project construction is expected to occur over a period of 18 months, starting as early as 2026. Project construction may commence after this date, which would likely reduce any energy estimates presented here due to improved technology and increased regulation. During the proposed Project's construction period, there would be a temporary increase in energy consumption due to the on-road and off-road vehicle activity. The proposed Project will use renewable diesel in all its off-road equipment, when available from suppliers, consistent with regulatory requirements under the California Air Resources Board (CARB) In-Use Off-Road Diesel-Fueled Fleets Regulation (CARB 2022a). The estimated fuel use during the construction phase is summarized in Table 4.6-2.

Table 4.6-2. Estimated Total Construction Energy Use

Source	Gasoline Usage (gal)	Conventional Diesel Usage (gal)	Renewable Diesel Usage (gal)	Electricity Usage (MWh)
Off-Road Construction Equipment	n/a	n/a*	1,106,002	n/a
On-Road Construction Trips	266,098	158,952	n/a	16,632
Total	**266,098**	**158,952**	**1,106,002**	**16,632**

Source: Ramboll (2025a)

*If renewable diesel if not available and conventional diesel is utilized, the conventional diesel will total 1,264,954 gallons.

Notes: n/a = not applicable; gal = gallon; MWh = megawatt-hours

The demand for renewable diesel during construction is estimated to be 1.11 million gallons, for use in off-road equipment, which represents approximately 0.4% of the estimated 2022 off-road vehicle diesel fuel consumption in California and 0.02% of the total existing and new renewable diesel production nationwide. Therefore, the impact of Project construction on local and regional fuel supplies would be temporary and minimal (Ramboll 2025a).

The proposed Project would be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation, which controls the operation of certain off-road diesel engines, vehicles, or equipment with greater than 25 horsepower. Under this regulation, construction equipment uses and associated energy consumption for the proposed Project would not require the use of equipment that would wastefully or inefficiently consume energy as this regulation provides fleet turnover and idling limits standards. Energy use associated with the construction of the proposed Project would be temporary and would not be anticipated to result in the need for additional capacity for local energy providers. As a result, the construction of the proposed Project would not result in an inefficient, wasteful, or unnecessary consumption of energy.

Therefore, impacts due to energy consumption during Project construction would be *less than significant*, and mitigation is not necessary.

Operations

Project operations would require long-term consumption of energy in the form of diesel fuel (renewable and conventional), electricity, natural gas (conventional transported in liquefied form and renewable used in compressed form), and gasoline. The proposed mining and processing activity is estimated to last approximately 25 years. To conservatively capture variations in year-to-year operations and to present a potential peak year of operation, maximum annual activity data were selected from each activity type, regardless of overlapping years. For example, maximum hauling operations and maximum equipment counts used in the energy inventory are projected to occur in different years, but are conservatively used together in this energy assessment.

Energy use estimates presented and evaluated in this report also include the portion of mining activity that is currently approved and thus represent a conservative evaluation of the proposed Project's potential energy impacts. Project operations are conservatively estimated to begin as early as 2027; operations may commence after this year, and emissions would be expected to decrease as improved technology, vehicle regulations, and additional renewable resources grow. For purposes of quantifying energy use, the year 2027 EMFAC data was conservatively used for on-road travel. The proposed Project will use renewable diesel in all its off-road equipment, when available from suppliers. Detailed energy consumption during Project operations is summarized in Table 4.6-3.

Table 4.6-3. Estimated Annual Operational Energy Use

Source	Gasoline Usage (gal/yr)	Conventional Diesel Usage (gal/yr)	Renewable Diesel Usage (gal/yr)	Natural Gas (MMBtu/yr)	Renewable Natural Gas Usage (MMBtu/yr)	Electricity Usage (MWh/yr)
Off-Road Operational Equipment	n/a	n/a*	8,229,279	n/a	n/a	n/a
On-Road Operational Trips - Off-site	78,128	175,198	n/a	n/a	8.4	12,689
On-Road Operational Trips – On-site	19,294	20,099	n/a	n/a	0.041	n/a
On-site Gasoline Dispensing Facility	26,163	n/a	n/a	n/a	n/a	n/a
On-site Facilities	n/a	n/a	n/a	n/a	n/a	87,600
Off-site Facilities (Water Sourcing)	n/a	n/a	n/a	n/a	n/a	11,511
Emergency Generators	n/a	n/a*	13,360	n/a	n/a	n/a
Diesel Water Well Generators	n/a	n/a*	51,334	n/a	n/a	n/a
On-site Power Generation	n/a	n/a	n/a	938,371	n/a	n/a
Total	**123,586**	**195,298**	**8,293,973**	**938,371**	**8.4**	**111,800**

Source: Ramboll (2025a)

Notes: n/a = not applicable; gal/yr = gallons per year; MMBtu = million British thermal units; MWh/yr = megawatt-hours per year

*If renewable diesel if not available and conventional diesel is utilized, the conventional diesel will total 8,489,271 gallons.

Local and Regional Energy Supplies

The annual demand for gasoline during operations is estimated to be 124,000 gallons, and the demand for conventional diesel is estimated to be 196,000 gallons for use in on-road vehicles. These amounts represent approximately 0.001% and 0.009% of the Southern California region's 2024 annual average gasoline and diesel production throughput, respectively. These amounts represent approximately 0.01%

and 0.05% of Nevada's 2021 annual gasoline consumption and 2020 annual diesel consumption, respectively (Ramboll 2025a).

The demand for renewable diesel in the proposed Project's maximum potential year of operation is estimated to be 8.29 million gallons, for use in off-road equipment. The proposed Project's renewable diesel demand during this maximum potential year represents approximately 3.1% of the estimated 2022 off-road vehicle diesel-fuel consumption in California, 0.30% of the total renewable diesel reported into CARB's LCFS program in 2024, and 0.17% of the total existing and new renewable diesel production nationwide (Ramboll 2025a).

The maximum annual natural gas usage is expected to be 940,000 million British thermal units (MMBTU) during Project operations. The proposed Project's LNG demand during this maximum potential year represents approximately 0.07% of the natural gas consumption in California in 2023 and 0.17% of the natural gas consumption in Arizona in 2023 (Ramboll 2025a).

Compressed RNG will be consumed by the LNG fuel delivery trucks. The annual demand for RNG during operations is estimated to be 8.4 MMBTU. The proposed Project's RNG demand during this maximum potential year represents approximately 0.00003% of the total biomethane reported into CARB's LCFS program in 2024 and 0.00002% of the United States' natural gas vehicle fuel consumption in 2024 (Ramboll 2025a).

During Project operations, the electricity load from the grid is expected to be 111,800 megawatt-hours. Due to the proposed Project's location, it is expected that the primary 10 MW of grid-based electricity will be provided by NV Energy, and the 1.3 MW of off-site water sourcing will be provided by SCE. With this assumed sourcing distribution, the proposed Project's on-site power demand would consume approximately 0.2% of NV Energy's 2023 net generation, and the proposed Project's off-site power demand would consume approximately 0.02% of SCE's 2023 net generation (Ramboll 2025a).

Peak and Base Period Demands

Peak period electrical demand is the short period of time during which electrical power is needed when electricity is in highest demand. Base period electrical load is the minimum amount of electrical demand needed over a 24-hour time period. Wasteful, inefficient, or unnecessary consumption or use of energy during the peak period of electrical demand has greater potential to cause adverse environmental effects compared to during the base period because of the higher demand during the peak period.

In 2024, NV Energy's Southern Nevada peak grid demand was 6,649 MW. In 2024, California ISO's peak demand was 48,323 MW. In comparison, the maximum grid-based peak demand for on-site power is anticipated to be consistent with the 10 MW grid supply. This potential peak demand would represent 0.2% of NV Energy's peak demand and 0.02% of California ISO's peak demand (Ramboll 2025a).

The proposed Project does not propose uses or operations that would inherently result in excessive and wasteful energy consumption. The energy demands associated with the proposed Project are characteristic of large-scale mining and mineral processing operations and are driven by the physical requirements of material extraction, hauling, and processing, rather than discretionary or avoidable design choices. The proposed Project would include on-site power generation in the form of natural gas turbines, which would supply approximately 10MW for on-site operational activities. Operational energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary as the Project design includes reestablishing grid power to reduce reliance on petroleum fuels, use of efficient LNG turbines to eliminate the need for fossil fuels in other stationary process equipment, vanpool program, and the use of renewable diesel when available. Therefore, impacts due to energy consumption during Project operations would be *less than significant*, and mitigation is not necessary.

Impact EN-1
The Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation.
Mitigation Measures
Mitigation is not necessary. Impact EN-1 would be less than significant.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

IMPACT EN-2: THE PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT A STATE OR LOCAL PLAN FOR RENEWABLE ENERGY OR ENERGY EFFICIENCY. *(LESS THAN SIGNIFICANT)*

Relevant plans and policies related to energy use include the IEPR, State Alternative Fuels Plans, and San Bernardino County General Plan Renewable Energy and Conservation Element. The evaluation of the proposed Project's consistency with these plans considers the proposed Project holistically. This approach is consistent with these plans and policies, which also consider projects holistically (i.e., the plans and policies generally do not segregate impacts by construction and operation).

2023–2024 Integrated Energy Policy Report

The 2023 IEPR and subsequent 2024 update highlight the implementation of California's innovative policies and the role they have played in establishing a clean energy economy, as well as provide more detail on several key energy policies, including increasing energy efficiency measures, shifting away from fossil fuels, and integrating more renewable energy into the electricity system.

The proposed Project would include the installation of a 69-kilovolt overhead powerline to receive electricity from the grid, as well as 13 natural gas-fired turbines to generate supplemental electricity and support on-site operations. While natural gas is a fossil fuel, the use of high-efficiency turbines in this context reduces reliance on less efficient diesel-powered generators and supports a gradual transition toward increased use of grid-supplied electricity as renewable generation continues to expand statewide. This approach will eliminate the need for fossil fuels in other stationary sources at the site and will allow for an increasing mix of renewable energy to supply the site's power needs over time. The proposed Project will also fuel all off-road equipment with renewable diesel when available from suppliers.

Through these combined measures—grid interconnection, displacement of diesel generators with higher-efficiency natural gas turbines, and use of renewable diesel for mobile equipment—the proposed Project would align with the 2023–2024 IEPR's direction to improve energy efficiency, reduce emissions from fossil fuel use, and facilitate an incremental transition toward cleaner energy sources. Therefore, the proposed Project will not conflict with or obstruct implementation of the 2023–2024 IEPR.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to AB 2076, the CEC and CARB prepared and adopted a joint-agency report, Reducing California's Petroleum Dependence, in 2003. Included in this report are recommendations to increase the use of alternative fuels to 20% of on-road transportation fuel use by 2020 and 30% by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita vehicle miles traveled. One of the

performance-based goals of AB 2076 is to reduce petroleum demand to 15% below 2003 demand by 2030.

The proposed Project includes the re-establishment of grid-based power supply for a portion of on-site power needs to reduce reliance on liquid petroleum fuels. The proposed Project features also include a vanpool program to reduce commute vehicle miles traveled by workers (both construction and operational), which will effectively reduce petroleum consumption from vehicles. Additionally, the proposed Project is committed to non-petroleum fuel sources (renewable diesel) for all construction and operational off-road equipment when available from suppliers. Therefore, the proposed Project will not conflict with or obstruct implementation of AB 2076.

AB 1007: State Alternative Fuels Plans

The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-State production of biofuels without causing a significant degradation of public health and environmental quality. Additionally, the Bioenergy Action Plan (EO S-06-06) establishes the following targets to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20% of its biofuels in California by 2010, 40% by 2020, and 75% by 2050.

Construction equipment and the off-road mining fleet during Project operation will be fueled by renewable diesel when available from suppliers. The proposed Project will not interfere with or obstruct the production of biofuels and alternative fuels in California. Therefore, the proposed Project will not conflict with or obstruct implementation of the Bioenergy Action Plan or the State Alternative Fuels Plan.

San Bernardino Countywide Plan

The CWP Renewable Energy and Conservation Element highlights County-initiated actions to increase local energy efficiency and renewable energy generation to support the State's energy and climate goals while also promoting an environment of prosperity and well-being. Since the proposed Project is not County-initiated action, these policies do not apply to the proposed Project.

However, as discussed above, several features of the proposed Project are designed to reduce overall energy needs, reduce dependence on petroleum by connecting to the grid and electrifying stationary source equipment within processing lines, and increase the use of renewable fuels, including renewable diesel in construction and operational off-road equipment, when available from suppliers. Vanpooling will also be employed for both construction and operational workers to reduce vehicle trips to the Project Area and the associated fuel use. Additionally, re-establishing a connection to the grid will allow for the future incorporation of additional renewable energy. Therefore, the proposed Project will not obstruct implementation of the County's energy-related policies in the CWP Renewable Energy and Conservation Element. Refer to Section 4.11, *Land Use and Planning*, for an in-depth analysis of the proposed Project's consistency with the CWP.

Conclusion

In conclusion, the proposed Project would be consistent with relevant energy plans, including the Integrated Energy Policy Report, State Alternative Fuels Plans, and County Renewable Energy and Conservation Element. Thus, the proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact EN-2
The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.
Mitigation Measures
Mitigation is not necessary. Impact EN-2 would be less than significant.

4.6.6 Cumulative Impacts

IMPACT EN-3: THE PROJECT WOULD NOT CONTRIBUTE TO CUMULATIVE ENERGY IMPACTS. *(LESS THAN SIGNIFICANT)*

The proposed Project would result in the consumption of energy resources during construction and operation. This energy consumption would occur within the larger context of energy consumption by land uses and mobile sources within the region and the state. For the purpose of this analysis, projects within the cumulative development scenario are identified in Chapter 3, *Environmental Setting*, and generally include past, present, and reasonably foreseeable development projects within the vicinity of the Project Area.

Other projects within the Project vicinity would contribute to energy consumption within the Project Area. As discussed in Section 4.6.5, *Project-Specific Impacts and Mitigation Measures*, the proposed Project would result in less-than-significant impacts related to short- and long-term wasteful, inefficient, or unnecessary energy consumption and would be consistent with state or local renewable energy and energy efficiency plans. Current and future development projects within the Project vicinity would be subject to state and local energy efficiency building standards and standards associated with renewable energy infrastructure (e.g., rooftop solar panel capability, EV parking requirements, etc.). Lastly, the California vehicle fleet would be expected to continue to become more fuel efficient and rely on diversified fuel sources in accordance with AB 1007, EO B-48-18, CAFE program standards, and AB 2076.

Based on required compliance with existing energy efficiency standards and the incremental nature of energy demand associated with individual projects, reasonably foreseeable future projects are not anticipated to result in significant short- or long-term wasteful, inefficient, or unnecessary energy consumption or conflict with a state or local renewable energy or energy efficiency plan. Nevertheless, reasonably foreseeable future projects would be subject to separate environmental review pursuant to CEQA to determine potential impacts related to energy use and reduce energy consumption as necessary. Therefore, the proposed Project would not contribute toward a cumulatively considerable impact related to energy.

Impact EN-3 (Cumulative Impacts)
The Project would not contribute to cumulative energy impacts.
Mitigation Measures
Mitigation is not necessary. Impact EN-3 would be less than significant.

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4.7 GEOLOGY, SOILS, AND MINERAL RESOURCES

This section of the EIR analyzes potential impacts to geology, soils, and mineral resources resulting from the implementation of the proposed Project. The analysis is based on review a review of existing resources, technical data, and applicable laws, regulations, and guidelines, as well as technical reports prepared for the proposed Project, and uses the significance criteria set forth in Appendix G of the State CEQA Guidelines to evaluate the severity of potential impacts to determine whether the proposed Project would result in significant environmental impacts under CEQA.

4.7.1 Existing Conditions

4.7.1.1 Geology and Soils

REGIONAL SETTING

The Project Area is in the southeastern portion of the Mojave Desert geomorphic province (California Geological Survey [CGS] 2002). Mojave Desert geomorphology and topography are largely controlled by fault trends and characterized by isolated mountain ranges separated by desert plains, many draining internally and have central playas. To the north and west, the boundaries of the geomorphic province are marked by major mountain ranges (e.g., the Sierra Nevada and Transverse ranges) and regional faults (e.g., the Garlock and San Andreas Faults). To the east, the geomorphic province is bounded by the Nevada and Arizona borders.

Mountains surrounding the Project Area are primarily composed of granitic and volcanic rocks that formed less than 65 million years ago. The surrounding mountains also include nonmarine sedimentary rocks of a similar age, older volcanic rocks (approximately 145–200 million years old), and marine sedimentary rocks that formed over 300 million years ago (Jennings et al. 1962). Paleozoic strata found in the Mojave Desert are typically representative of continental margin depositional environments (Walker et al. 2002). Mesozoic rocks include marine and nonmarine sedimentary rocks, volcanics, and plutonic igneous bodies that were emplaced during the Nevadan orogeny. Cenozoic strata in the Mojave Desert are widespread and typically include both volcanic and sedimentary rock types.

Proterozoic metamorphic and plutonic rocks form the basement of the Castle Mountains; these are overlain by pre-volcanic sediments and Miocene sedimentary and volcanic rocks. The oldest known unit in the stratigraphic package is metamorphic Proterozoic Basement rocks composed of a massive sequence of biotite schist, biotite gneiss, and meta-granite. Locally overlying the basement rocks is a Proterozoic sedimentary sequence of conglomerate with lesser sandstone. The regionally extensive Peach Springs Tuff unconformably overlies the Proterozoic units. The Miocene-age Castle Mountains Volcanic Sequence (CMVS) includes all volcanic units above the Peach Springs Tuff and below the Piute Range volcanic rocks. The CMVS was emplaced during three intrusive-extrusive episodes between around 18.8 and 13.5 million years ago. The CMVS is defined by the Jacks Well Formation characterized by epiclastic and volcanic rocks with minor mudstone, the Linder Peak rhyolitic volcanic and volcaniclastic rocks, and the Hart Peak rhyolite and late dacite dikes. Linder Peak is represented by a complex suite of volcanics and volcaniclastics, including flow-domes, and clastic tuffs composed of monolithic breccia, polylithic breccia, and ashfall tuffs (M3 2021; EIR Appendix 8). No paleontological or archaeological deposits have been uncovered during either the construction or operation of the existing CMM.

LOCAL SETTING

Topography

The Castle Mountains are a relatively small range extending north–northeast from the northern end of Lanfair Valley in California into Piute Valley in Nevada. The range is about 10 miles in length and two to three miles in width, trending across the northern end of the Piute Range near the California-Nevada state borderline. The Project Area is near the southernmost extent of the Castle Mountain range at an elevation of about 4,500 feet above sea level (asl), and elevations range from about 4,100 asl to 5,100 asl.

Geology

The geology of the Mojave Desert is complex, and rocks found in the Mojave Desert represent nearly all divisions of geologic time, from Precambrian basement rocks to modern alluvium. The Project Area is classified as a low-sulfidation epithermal gold deposit. CMVS rocks are the primary host of epithermal gold mineralization at the Project Area. Structure and associated rock porosity-permeability characteristics are the first-order control on the distribution of gold. Silica alteration and iron oxide minerals generally occur with gold mineralization. Gold and electrum are the dominant gold-bearing minerals identified from gold deportment studies (M3 2021).

Soils

Two Project Area geotechnical studies were completed by M3 to determine key project foundation design criteria, excavation characteristics, and general recommendations for site earthwork. A total of 29 test pits and three geotechnical borings were conducted in 2019 and 2020 to characterize the Project Area subsurface characteristics and how they may affect design and construction relating to facilities on-site. These test pits and borings were specifically located in anticipated locations of major process facilities. Samples were collected from the boring and test pits and tested for expansion index, soil gradation, soil pH, resistivity, and soluble contents. Based on the laboratory data and field evaluation, no geotechnical fatal flaws were identified. The local soil materials were characterized as suitable for construction materials for the various facility components.

The following contains a general summary of the findings of the investigation relating to Phase II facility locations:

- **Phase II North Site (Crushing and Ore Storage):** This area was underlain by a relatively thin mantle of colluvium over tertiary rhyolite tuff in various stages of weathering. The colluvium was described as dark yellowish brown, dry, loose silty sand with localized clayey areas, angular gravel, and cobble-size volcanic fragments to a maximum of seven inches in diameter; this layer ranged in thickness from 18 to 30 inches. Underlying volcanic rhyolite tuff (considered the bedrock unit in this area) was encountered below these depths, of which, the top 24 to 30 inches was generally rippable with an excavator bucket.
- **Phase II South Site (Mill, Processing Plant and Refinery):** This area was underlain by a thicker section of alluvium and a relatively thinner mantle of colluvium over tertiary volcanic rhyolite tuff in various stages of weathering. Test pit 5, located near the proposed process plant facility, showed an alluvium characterized as dark yellowish brown and dry. Loose fine to coarse silty sand with sub-angular gravel and cobble-size volcanic fragments up to six inches in size was encountered to the total depth explored in this area of 9.5 feet. In the proposed location of the grinding mill, a colluvium characterized as dark yellowish brown, soft clay with a trace of sand and angular volcanic fragments to six inches was encountered to a depth of approximately 3.5 feet followed by volcanic rhyolite tuff, which was rippable to an additional five feet in depth.

GEOLOGIC HAZARDS

The Project Area lies within the County's Geologic Hazard (GH) Overlay zoning designation. The GH Overlay is intended to improve public safety by requiring investigations in areas that may be affected by geologic hazards, such as active faults, landslides, debris or mud flows, rockfall, liquefaction, seiches, and unstable soils. A further discussion of the standards of the GH Overlay zone is detailed in Section 4.7.2.3, *San Bernardino County Development Code*.

Landslides

Slope failures, commonly referred to as landslides, include many phenomena of downslope displacement and movement of material, triggered by either static (i.e., gravity) or dynamic (i.e., earthquake) forces. Slope stability depends on several interacting variables, including bedrock geology, geologic structure, the amount of groundwater present, climate, topography, slope geometry, and human activity. Contributing factors to slope movement may decrease the resistance in the slope materials or increase the stresses on the slope, or both. Landslides can occur on slopes of 15% or less, but the probability of slope failure is greater on steeper slopes that exhibit previous landslide features such as scarps, slanted vegetation, and transverse ridges. Landslides typically occur within slide-prone geologic units that contain excessive amounts of water or are on steep slopes, or where planes of weakness are parallel to the slope angle. No landslide hazards are identified for the Project Area based on available California Geological Survey landslide inventory mapping and site-specific geotechnical investigations (CGS 2026; Call and Nicholas, Inc. 2020).

Soils

Potential problematic soil conditions, such as erosion and expansion (linear extensibility or shrink-swell) are potential geologic hazards for engineering components of the proposed Project and are discussed in detail below.

Soil Erosion

Erosion of soil or rock can be driven by the shearing action of water and wind. Water erosion can occur by rill and gully development driven by overland flow or lateral erosion of a stream channel. Soil erosion can eventually lead to damage to building foundations and roadways, loss of topsoil, or substantial changes in drainage patterns or water quality. As such, M3 conducted an analysis at the Project Area to understand peak discharge and runoff volumes to determine requirements for managing of surface flows around and through the Project Area as they relate to the proposed improvements for the proposed Project. A hydraulic analysis was conducted by M3 as a basis for the review on the premise of a 24-hour, 100-year storm event. Watershed volumes and maximum surface water elevations were evaluated to develop criteria for effective handling of the water and to minimize erosion concerns.

The capacity of soils to resist erosion by rainfall and runoff is a function of soil infiltration capacity and resistance to detachment and transport by falling or flowing water. Soils with high infiltration rates and permeability reduce the amount of runoff (and therefore the erosion potential). Soils that contain high percentages of fine sands and silt and that are low in density are generally the most erodible by water and wind. Roughness of the desert soil surface, soil moisture content, mechanical stability of soil aggregates (clumps of soil), and stability of soil crusts also affect the potential for soil loss resulting from wind. Factors that influence the erosion potential of soil (and the K-factor) include aggregate stability, cohesion, soil texture, structure, organic matter content, permeability, gradation (distribution of soil particles), vegetative cover, length and percent of slope, and rainfall/wind intensity. Soil K factor was used to group soils within the Project Area into slight (0.05–0.20), moderate (0.25–0.40), and severe (> 0.40) water

erosion classes (NRCS 2025). The potential for water erosion within the soils Project Area ranges from slight to severe: 712.49 acres are rated slight, 379.64 acres are rated moderate, 677.65 acres are rated severe, and 38.7 acres are not rated.

Expansive Soils

Expansive soils are characterized by their ability to undergo significant volume change (shrink and swell) due to variation in soil moisture content. Changes in soil moisture could result from several factors, including rainfall, utility leakage, and perched groundwater. Expansive soils are typically very fine-grained with a high to very high percentage of clay. Soils with moderate to high shrink-swell potential would be classified as expansive soils. Expansive soils exhibit a shrink-swell behavior, also referred to as linear extensibility. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments during the processes of wetting and drying. Changes to soil moisture could stem from several factors, including rainfall, irrigation, and/or shallow depth to groundwater. Structural damage may occur over a long period, usually as a result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. For the Project Area, based on the nature of alluvial deposition, no expansive soils are expected.

Subsidence and Settlement

Subsidence of the land surface is a general process that can be attributed to natural phenomena such as tectonic deformation, consolidation, hydro-compaction, collapse of underground cavities, oxidation of organic-rich soils, or rapid sedimentation. Human activities, such as the withdrawal of groundwater, can also cause subsidence. Naturally occurring subsidence most frequently takes place in tectonically active areas such as volcanic regions and fault zones. Subsidence due to groundwater withdrawal is possible; however, there is no known subsidence in the Project Area, and other than groundwater pumping to support CMM, no significant pumping occurs within Lanfair Valley.

4.7.1.2 Mineral Resources

MINERAL RESOURCE CLASSIFICATION AND DESIGNATION

Classification is the process of identifying lands containing significant mineral deposits. Designation is the formal recognition by the State Mining and Geology Board (SMGB) of areas containing mineral deposits of regional or statewide significance after consultation with lead agencies and other interested parties (California Department of Conservation [CDOC] 2024).

The objective of classification and designation processes is to ensure, through appropriate lead agency policies and procedures, that strategic mineral deposits of statewide or regional significance are available when needed.

The CGS Mineral Resources Program provides information about California's nonfuel mineral resources. The Mineral Resources Project classifies lands throughout the state that contain regionally significant mineral resources as mandated by the Surface Mining and Reclamation Act of 1975 (SMARA). Nonfuel mineral resources include metals, such as gold, silver, iron, and copper; industrial minerals, such as boron compounds, rare earth elements, clays, limestone, gypsum, salt, and dimension stone; and construction aggregates, such as sand, gravel, and crushed stone. Building and infrastructure development generally results in a demand for minerals, especially construction aggregates. Urban expansion over prime deposits and conflicts between mining and other incompatible land uses throughout California led to SMARA's guidelines for classification and designation of mineral lands, which require all counties and cities to incorporate mineral resources management policies into their general plans for approval by the SMGB.

The classification process has developed Production-Consumption (P-C) region boundaries based on the identification of active aggregate operations (production) and the market areas served (consumption). The P-C region boundaries are modified to include only the parts of the region that are urbanized, or urbanizing, and are classified for their aggregate resource significance. An aggregate resource appraisal further evaluates the presence or absence of important sand, gravel, and dimension stone deposits that are suitable sources of construction aggregate. The classification and designation of these mineral resources is a joint effort of the state and local governments. It is based on geologic factors and requires that the State Geologist classify a mineral resources area as one of the following MRZs, or as a Scientific Resource Zone or Identified Resource Area, as follows:

- **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.
- **MRZ-2a:** Areas underlain by mineral deposits where geologic data show that significant measured or indicated resources are present.
- **MRZ-2b:** Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present.
- **MRZ-3a:** Areas containing known mineral deposits that may qualify as mineral resources.
- **MRZ-3b:** Areas containing inferred mineral deposits that may qualify as mineral resources.
- **MRZ-4:** Areas where geologic information does not rule out either the presence or absence of mineral resources.
- **Scientific Resource Zones:** Contain unique or rare occurrences of rocks, minerals, or fossils that are of outstanding scientific significance.
- **Identified Resource Areas:** County- or State-identified areas where production and information indicates that significant minerals are present.

As part of the classification and designation processes, site-specific conditions are analyzed to calculate the total volume of aggregates within individually identified resource sectors. Designated resource sectors are MRZ-2 areas judged to contain a significant deposit of construction-quality aggregates. Anticipated aggregate demand in the P-C regions for the next 50 years is estimated and compared to the total volume of aggregate reserves identified in the P-C region by the State. Reserves are aggregates that have been determined to be acceptable for commercial use, are in properties owned or leased by aggregate-producing companies, and for which permits have been issued that allow mining and processing of the material. Mineral lands are mapped according to jurisdictional boundaries (i.e., counties), mapping all mineral commodities at one time in the area, using the California Mineral Land Classification System (CDOC 2024). No MRZs have been identified within San Bernardino County.

REGIONAL SETTING

The Castle Mountains are a small range of Miocene volcanic rocks at the northern end of the Lanfair Valley in eastern California and extend north into Nevada. The Castle Mountains are classified as a low-sulfidation epithermal gold deposit, a subtype of the epithermal class of gold and silver deposits. Epithermal gold-silver systems are driven by magmatic activity and form high-level vein, stockwork, disseminated, and/or replacement deposits that may be mined by open-pit and/or underground methods (M3 2021; see EIR Appendix 8).

PROJECT AREA SETTING

The Project Area is classified as a low-sulfidation epithermal gold deposit. CMVS rocks are the primary host of epithermal gold mineralization at the Project Area. Structure and associated rock porosity-permeability characteristics are the first-order control on the distribution of gold. Silica alteration and iron oxide minerals generally occur with gold mineralization. Gold and electrum are the dominant gold-bearing minerals identified from gold deportment studies (M3 2021). The following lithologies were identified at the Project Area: Alluvium, Debris Flow, Dacite, Hart Peak Rhyolite, Rhyolite Breccia, Porphyrytic Rhyolite, Aphyric Rhyolite, Volcaniclastic Diatreme, Volcaniclastic, Mudstone, Epiclastics, Andesite, Peach Springs Tuff, Proterozoic Sediments, and Proterozoic Basement.

The proposed Project includes 1,301 acres of patented lode claims, 8,980 acres of unpatented lode claims, 3,598 acres of unpatented mill site claims, and 3,639 acres of placer claims. The claims are registered under the CMV and Viceroy Gold Corporation.

4.7.2 Regulatory Setting

4.7.2.1 Federal

FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976

The Federal Land Policy and Management Act of 1976 (FLPMA) consolidated public land management under a single federal agency, the BLM within the U.S. Department of the Interior, creating more consistent oversight of agricultural and forestry-related uses on public lands. FLPMA serves as the primary regulatory framework for the management of public lands under multiple-use and sustained yield principles, including livestock grazing and timber production, along with recreation, mineral development, wildlife habitat, and cultural and scenic resources conservation.

CALIFORNIA DESERT CONSERVATION AREA PLAN

The CDCA, encompassing approximately 25 million acres in Southern California, was designated by Congress in 1976 under FLPMA. Of the 25 million acres, the BLM administers approximately 12 million acres. Section 601 of FLPMA, as directed by Congress, required the BLM to prepare a comprehensive, long-range plan for the management of use, development, and protection of public lands within the CDCA. The resulting CDCA Plan (BLM 1999) is founded on principles of multiple use, sustained yield, and the maintenance of environmental quality. The CDCA Plan provides overarching regional guidance for the management of BLM-administered lands within the CDCA and sets forth long-term objectives for both the protection and use of the California desert.

DESERT RENEWABLE ENERGY CONSERVATION PLAN

The *Desert Renewable Energy Conservation Plan* (DRECP) (BLM 2016) is a landscape-level plan established by the BLM for approximately 10.8 million acres of public lands in the California desert. The DRECP provides a framework to balance development and conservation of natural resources, including habitat for sensitive species. For projects within the DRECP planning area, land use plan conformance requires that proposed actions align with the goals, objectives, and conservation and management actions (CMAs) identified in the plan. The CMM was identified in the DRECP as an existing high-priority mineral operation exclusion area.

Land Use Plan Amendment (LUPA)-wide refers to CMAs that apply to activities on all types of land allocations, within the LUPA Decision Area, which includes lands within the interagency DRECP Plan Area and lands outside of the interagency DRECP Plan Area but within the CDCA.

In accordance with the DRECP BLM LUPA, identified soil and water general resources have been characterized in the following manner and are LUPA-wide CMAs:

> **LUPA-SW-8:** As determined necessary on an activity-specific basis, prepare a site plan specific to major soil types present (≥5% of footprint or laydown surfaces) in Wind Erodibility Groups 1 and 2 and in Hydrology Soil Class D as defined by the USDA Natural Resources Conservation Service to minimize water and air erosion from disturbed soils on activity sites.
>
> **LUPA-SW-9:** The extent of desert pavement within the proposed boundary of an activity shall be mapped if it is anticipated that the activity may create erosional or ecological impacts. Mapping will use the best available data and standards, as determined by BLM. Disturbance of desert pavement within the boundary of an activity shall be limited to the extent possible. If disturbance from an activity is likely to exceed 10% of the desert pavement mapped within the activity boundary, the BLM will determine whether the erosional and ecological impacts of exceeding the 10% cap by the proposed amount would be insignificant and/or whether the activity should be redesigned to minimize desert pavement disturbance.
>
> **LUPA-SW-10:** The extent of additional sensitive soil areas (cryptobiotic soil crusts, hydric soils, highly corrosive soils, expansive soils, and soils at severe risk of erosion) shall be mapped if it is anticipated that an activity will impact these resources. To the extent possible, avoid disturbance of desert biologically intact soil crusts and soils highly susceptible to wind and water erosion.

In accordance with the DRECP BLM LUPA, identified minerals lands and existing mining and energy development (locatable, salable, solid leasable, and geothermal minerals) with currently approved Plans of Operations, Notices, Mine and Reclamation Plans, or Plans of Development, under the authorities 43 CFR 3200, 3500, 3600, and 3802/09, have been characterized in the following manner and are LUPA-wide CMAs:

> **LUPA-MIN-1:** High Potential Mineral Areas (identified in CA GEM [California Department of Conservation Geologic Energy Management Division (CalGEM)] data)
>
> - These areas have been identified as mineral lands having existed and/or historic mining activity and a reasonable probability of future mineral resource development. These identified areas will be designated as mineral land polygons on DRECP maps, recognized as probable future development areas for planning purposes, and allowable use areas.
> - If an activity is proposed in a High Potential Mineral Area, analyze and consider the mineral resource value in the NEPA analysis.
>
> **LUPA-MIN-2:** Existing Mineral/Energy Operations. Existing authorized mineral/energy operations, including existing authorizations, modifications, extensions, and amendments and their required terms and conditions, are designated as an allowable use within all BLM lands in the LUPA Decision Area, and unpatented mining claims subject to valid existing rights. Amendments and expansions authorized after the signing of the DRECP LUPA ROD are subject to applicable CMAs, including ground disturbance caps within

Ecological and Cultural Conservation Areas, subject to valid existing rights, subject to governing laws and regulations.

LUPA-MIN-3: Existing High Priority Mineral/Energy Operations Exclusion Areas

- Existing high-priority operation footprints and their identified expansion areas are excluded from DFA [Development Focus Areas] and conservation CMAs, but must comply with LUPA-wide CMAs subject to the governing laws and regulations.
- High-priority operation exclusions are referenced by name with their respective footprint (acreage) below.
    - Castle Mountain/Viceroy Mine (Gold) (General Legal Description: 35º 17'N; 115º3'W)—5,000 surface acres

LUPA-MIN-4: Access to Existing Operations

- Established designated, approved, or authorized access routes to the aforementioned existing authorized operations and areas will be designated as allowable uses.
- Access routes to Plans of Operations and Notices approved under 43 CFR 3809 will be granted subject to valid existing rights listed in 43 CFR 3809.100.

LUPA-MIN-5: Areas Located Outside Identified Mineral Areas.

- Areas which could not be characterized due to insufficient data and mineral potential may fluctuate depending on market economy, extraction technology, and other geologic information- requiring periodic updating. Authorizations are subject to the governing laws and regulations and LUPA requirements.

LUPA-MIN-6: New or expanded mineral operations will be evaluated on a case-by-case basis, and authorizations are subject to LUPA requirements and the governing laws and regulations.

GENERAL MINING LAW OF 1872

The General Mining Law of 1872 established a statutory right allowing claimants to access public lands open for location, stake mining claims in pursuit of locatable minerals, and carry out mining operations in accordance with applicable federal and state statutes and regulations. Among additional provisions, it allows parties to explore for and mine hard-rock minerals, including copper, gold, iron, lead, and silver on federal lands. Upon the discovery of a deposit containing specified materials, parties may submit a claim to the government, initiating the procedural steps required for approval and the permitting of production.

MULTIPLE-USE MINING ACT OF 1955 (PUBLIC LAW 167)

The Multiple-Use Mining Act of 1955 amended the 1947 Materials Act and mining laws to provide for multiple use of the surface of the same tracts of the public lands and granted the ability to conduct mining activities on public lands, locate necessary facilities, and carry out incidental and reasonable uses to mining on public lands, such as National Forest System lands.

MINING AND MINERALS POLICY OF 1970

The Mining and Minerals Policy Act of 1970 establishes the ongoing policy of the federal government to promote and support private enterprise in the development of a stable domestic minerals industry, as well as the orderly and efficient development of domestic mineral resources. The act encompasses all types of minerals, including coal, geothermal resources, oil and gas, and sand and gravel.

4.7.2.2 State

CALIFORNIA BUILDING CODE

The CBC, codified in 24 CCR Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, egress facilities, and general building stability. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction.

The current CBC is the 2025 Triennial Edition, which is based on the 2024 International Building Code (IBC). In addition, the CBC contains necessary California amendments that are based on the American Society of Civil Engineers (ASCE) Minimum Design Standard 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion in building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures, throughout California.

The earthquake design requirements of the CBC consider the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. In California, the California Division of Occupational Safety and Health (Cal/OSHA) and federal OSHA are the agencies responsible for ensuring worker safety in the workplace.

Excavation and trenching are among the most hazardous construction activities. The OSHA Excavation and Trenching standard (29 CFR 1926.650) covers requirements for excavation and trenching operations. OSHA requires that all excavations in which employees are potentially exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area. Cal/OSHA would be the implementing agency for Cal/OSHA and OSHA standards.

SURFACE MINING AND RECLAMATION ACT OF 1975

SMARA was enacted by the California legislature to ensure the reclamation of mined lands, to ensure mineral resources location and quantity data are updated, and to manage the loss of significant mineral resources in response to urban development. SMARA is administered by the CDOC Division of Mine

Reclamation and mandates the CDOC Division of Mines and Geology as well as the SMGB to prepare mineral resource reports for each jurisdiction.

While SMARA does not establish a specific minimum factor of safety for slope stability, Section 3502(b)(3) requires that final reclaimed slopes be constructed at gradients flatter than the critical gradient, suggesting that static factors of safety should exceed 1.0. The section further stipulates that regulatory agencies must require an engineering analysis of stability wherever final slopes approach the critical gradient for the material type involved. Additionally, Section 3704(f) specifies that cut slopes, including final highwalls and quarry faces, must be designed with a minimum slope stability factor of safety that is appropriate for the intended end use and consistent with the surrounding topography and/or the approved end use.

SMARA Sections 2761(a) and (b) and 2790 provide for a two-phase mineral lands inventory process termed Classification-Designation. The primary objective of the process is to ensure the availability and prevent inaccessibility of mineral resources through local lead agency policies and procedures by informing future land use and planning decisions.

4.7.2.3 Local

SAN BERNARDINO COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The goal of hazard mitigation is to minimize or prevent the loss of life and damage to property from hazards such as geologic events, wildfires, floods, droughts, terrorism, and climate change. According to FEMA, hazard mitigation is defined as "any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards." FEMA defines a hazard as "any event or condition with the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, environmental damage, business interruption, or other loss."

The objective of the *County of San Bernardino Multi-Jurisdictional Hazard Mitigation Plan* (County of San Bernardino 2022) is to illustrate the strategies for minimizing or preventing hazard risks in the unincorporated area of the county and the five special districts. The plan's approach incentivizes communities to establish objectives and develop projects aimed at diminishing risk and fostering more disaster-resilient communities through the analysis of potential hazards.

SAN BERNARDINO COUNTYWIDE PLAN

The CWP contains the long-term goals and policies that will guide County decisions, investments, and improvements toward achieving the Countywide Vision. It serves as the County's General Plan for the unincorporated areas and includes policy direction for regional services the County administers in both incorporated and unincorporated areas. Relevant goals and policies from the Hazards and Natural Resources Elements of the County Policy Plan are summarized in Table 4.7-1 (County of San Bernardino 2020).

Table 4.7-1. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Hazards Element	
Goal HZ-1	**Natural Environmental Hazards.** Minimized risk of injury, loss of life, property damage, and economic and social disruption caused by natural environmental hazards and adaptation to potential changes in climate.
Policy HZ-1.8	**Wind erosion hazards.** The County requires new development in medium-high or high wind erosion hazard areas to minimize the effects of wind-blown soil through building and site design features such as fencing, surface treatment or pavement, attenuation or wind barriers, architectural features, building materials, and drought resistant landscaping.
Goal HZ-2	**Human Generated Hazards.** People and the natural environment protected from exposure to hazardous materials, excessive noise, and other human-generated hazards.
Policy HZ-2.11	**Legacy abandoned mine lands.** The County inventories legacy abandoned mines and requires private property owners to eliminate hazardous conditions that could threaten human life and environmental contamination. The County pursues funding to address legacy abandoned mines on County-owned property.
Goal HZ-3	**Environmental Justice.** For unincorporated environmental justice focus areas, equitable levels of protection from environmental and health hazards; expanded opportunities for physical activity and meaningful civic engagement; and access to healthy food, public facilities, safe and sanitary housing.
Policy HZ-3.6	**Contaminated water and soils.** The County advocates for and coordinate with local and regional agencies in efforts to remediate or treat contaminated surface water, groundwater, or soils in or affecting unincorporated environmental justice focus areas. The County pursues grant funding and establish partnerships to implement the County's Site Remediation Program in unincorporated environmental justice focus areas, with particular emphasis in addressing the types of contamination identified in the Hazard Element tables.
Natural Resources Element	
Goal NR-6	**Mineral Resources.** Mineral resource zones that allow extraction industries to continue supporting the regional and national economy while minimizing negative impacts on the public and natural environment.
Policy NR-6.1	**Mineral resource areas.** We prioritize the conservation of land area with mineral resources by prohibiting or discouraging development of land that would substantially preclude the future development of mining facilities in areas classified as Mineral Resource Zone (MRZ) 2a, 2b, or 3a.
Policy NR-6.2	**Mining operations and reclamation.** We require and monitor mineral extraction activities to ensure that the operation and reclamation of mined lands is consistent with the State Surface Mining and Reclamation Act of 1975 (SMARA).
Policy NR-6.3	**Conservation of construction aggregate.** We encourage the continued operation of existing mining facilities and streamline the permitting of new mining facilities (consistent with the Policy Plan and other local, state, and federal regulations) to establish aggregate resources that are sufficient to satisfy 50 years of county demand.

SAN BERNARDINO COUNTY BUILDING REGULATIONS

Chapter 63.01 of the County Code of Ordinances adopts the CBC for the unincorporated area of the county.

SAN BERNARDINO COUNTY DEVELOPMENT CODE

The Development Code establishes overlays which are intended to guide development by providing standards that apply to proposed development in addition to the standards and regulations of the primary land use zoning district, where important community, site, environmental, safety, compatibility, or design issues require particular attention in project planning. As mentioned above, the Project Area lies within the County's GH Overlay zoning designation. The GH Overlay is intended to improve public safety by requiring investigations in areas that may be affected by geologic hazards, such as active faults,

landslides, debris or mud flows, rockfall, liquefaction, seiches, and unstable soils. Development and land uses proposed within the GH Overlay shall comply with the following standards:

- A structure used for human occupancy shall be located 50 feet or farther from any active earthquake fault traces. Lesser setbacks may be applicable in certain situations as determined by an appropriate geologic investigation and approved by the County Geologist or other engineering geologist designated by the Building Official.

Additionally, development and land uses proposed within the GH Overlay shall comply with the following standards from Development Code Title 8, Division 5 (Permit Application and Review Procedures), Section 85.11.030 (Erosion Control Plan and Inspection Required):

(a) **No Land Disturbance or Construction Activity without Prior Approval.** No person, except as provided in this Chapter, shall commence with a disturbance of land (e.g., grading or land clearing) or construction activity that has the potential to cause erosion without first obtaining approval of erosion control measures to ensure that erosion would not reasonably be expected to occur. Best Management Practices (BMPs) shall be implemented at all land disturbance sites, regardless of the area of disturbance.

(b) **Inspections Required.** Site inspections shall be conducted as needed to verify compliance with this Chapter. Project proponents must also recognize that their project is subject to inspection by the Public Works Department, Environmental Management Division, and Regional Water Quality Control Board staff as part of their General Construction Permit obligations.

(c) **Stormwater Pollution Prevention Plan.** Projects disturbing more than one acre are also required to have coverage under the State General Construction Permit issued by the State Water Resources Control Board and develop a Stormwater Pollution Prevention Plan (SWPPP). The property owner is required to abide by all provisions of the State General Construction Permit and obtain a Waste Discharge Identification (WDID) number prior to the issuance of building or grading permits when the disturbance is more than one acre.

(d) **Review Requirements of Plan.** The Building Official, with the concurrence of the Planning Division and the Land Development Division, when appropriate, shall review the plan and determine that the proposed erosion control measures will be adequate and whether or not an erosion control permit is specifically required.

(e) **Maintenance of Features.** The required features of the approved Erosion Control Plan shall be implemented during the land disturbing activity and maintained thereafter in accordance with the approved plan.

4.7.3 Thresholds of Significance

4.7.3.1 Geology and Soils

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to geology and soils if the project would:

a) Directly or indirectly cause potential substantial 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.
b) Result in substantial soil erosion or the loss of topsoil.
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Each of these thresholds is discussed under Section 4.7.5, *Project-Specific Impacts and Mitigation Measures*, specifically under Section 4.7.5.1, *Geology and Soils*, below.

4.7.3.2 Mineral Resources

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to mineral resources if the project would:

a) 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.
b) 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.

These thresholds are discussed under Section 4.7.5, *Project-Specific Impacts and Mitigation Measures*, specifically under Section 4.7.5.2, *Mineral Resources*, below.

4.7.4 Impact Assessment Methodology

Potential impacts were evaluated based on a comprehensive review of the proposed Project and all associated components based on the Geotechnical Report (Call and Nicholas, Inc. 2020; EIR Appendix 7) and Feasibility Study (M3 2021; see EIR Appendix 8) to address seismic hazards, soil stability, and mineral resources specific to the Project Area.

4.7.4.1 Applicant-Proposed Measures

The Applicant has identified and committed to implementing the following applicant-proposed measure (APM) as part of the proposed Project to avoid or substantially lessen potentially significant impacts to paleontological resources, to the extent feasible.

APM-PALEO-1 CMV will not knowingly disturb, alter, injure, or destroy any scientifically important paleontological deposits. If previously undiscovered paleontological resources are discovered by CMV in the performance of any surface disturbing activities, the item(s) or condition(s) will be left intact and immediately brought to the attention of the BLM authorized officer. If significant paleontological resources are found, avoidance, recordation, and/or data recovery will be required, and at the expense of CMV.

4.7.5 Project-Specific Impacts and Mitigation Measures

4.7.5.1 Geology and Soils

a) Would the project directly or indirectly cause potential substantial 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?

IMPACT GE-1: THE PROJECT WOULD NOT CAUSE POTENTIAL SUBSTANTIAL ADVERSE EFFECTS, INCLUDING THE RISK OF LOSS, INJURY, OR DEATH INVOLVING RUPTURE OF AN ALQUIST-PRIOLO EARTHQUAKE FAULT. *(LESS THAN SIGNIFICANT)*

The Project Area is not located within an Alquist-Priolo Earthquake Fault Zone. However, the Castle Mountain stratigraphy is dissected by north-south and northeast-southwest trending extensional faults interpreted to be both syn- and post-volcanic. Continuous extension and normal faulting focused on protracted volcanism and hydrothermal activity. Geologic fault modeling was performed by M3. Five major displacement faults and four minor displacement faults were modeled throughout the deposit. The major faults introduced up to 300 feet of vertical offset between lithologies and highlight mineralized structures. M3 has provided slope recommendations, including interramp slope angles and bench design parameters based on laboratory testing, geotechnical drilling information, and geotechnical modeling. Slope recommendations implemented in the mine plan include slope angle classified by "Geology Specific" and "Over-riding Structural Controls" domains. Geology Specific domains were identified in the South Domes, West, and East domains. Structural domains were coded for the Predator, McLane, Maverick, and Dillon fault zones to specified widths based on alteration; additional domains were added for Alluvium, Backfill, and Waste Dumps. The slope design implemented in the mine plan includes reduced slope angles within specified widths to mapped fault zones. In addition to the mine plan slope design, M3 recommends that the wall slopes be monitored carefully, particularly in the areas where fault zones intersect haulage roads and where points occur at pit phase overlap areas. Because the mine plan includes a reduced slope angle design, the proposed project would not cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of an Alquist-Priolo earthquake fault. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact GE-1
The Project would not cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of an Alquist-Priolo earthquake fault.
Mitigation Measures
Mitigation is not necessary. Impact GE-1 would be less than significant.

ii) Strong seismic ground shaking?

IMPACT GE-2: THE PROJECT WOULD NOT CAUSE POTENTIAL SUBSTANTIAL ADVERSE EFFECTS, INCLUDING THE RISK OF LOSS, INJURY, OR DEATH INVOLVING STRONG SEISMIC GROUND SHAKING. *(NO IMPACT)*

The proposed Project would be subject to Chapter 1613 of the 2022 CBC, which requires buildings, building foundations, and any other associated structures to be constructed to withstand earthquake loads, including seismic ground shaking. Based on the site-specific seismic design parameters applicable to the Project Area, including soil classification, expected ground motion, and compliance with Chapter 1613 of the California Building Code, the proposed Project would not cause a potential substantial adverse effect, including the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, *no impact* would occur, and mitigation is not necessary.

Impact GE-2
The Project would not cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

iii) Seismic-related ground failure, including liquefaction?

IMPACT GE-3: THE PROJECT WOULD NOT CAUSE POTENTIAL SUBSTANTIAL ADVERSE EFFECTS, INCLUDING THE RISK OF LOSS, INJURY, OR DEATH INVOLVING LIQUEFACTION. *(NO IMPACT)*

Proposed development would be required to comply with Chapter 1613 of the 2022 CBC, which requires buildings, building foundations, and associated structures to be designed based on site soil conditions and anticipated seismic loading, including consideration of liquefaction potential. Available geotechnical data indicate that subsurface conditions at the Project Area are not conducive to liquefaction. Based on required compliance with the CBC, the proposed Project would not cause potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction. Therefore, *no impact* would occur, and mitigation is not necessary.

Impact GE-3
The Project would not cause potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

iv) Landslides?

IMPACT GE-4: THE PROJECT WOULD NOT CAUSE POTENTIAL SUBSTANTIAL ADVERSE EFFECTS, INCLUDING THE RISK OF LOSS, INJURY, OR DEATH INVOLVING LANDSLIDES*. (NO IMPACT)*

As mentioned above, no landslide hazards are identified for the Project Area or within 100 miles (CGS 2026). As a result, the Project Area would not be located in an area subject to naturally occurring landslide hazards. In addition, engineered slopes associated with the proposed mine expansion would be designed in accordance with site-specific geotechnical recommendations to maintain long-term stability. Therefore, the Project would not cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. Therefore, *no impact* would occur, and mitigation is not necessary.

Impact GE-4
The Project would not cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

b) Would the project result in substantial soil erosion or the loss of topsoil?

IMPACT GE-5: THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL SOIL EROSION OR THE LOSS OF TOPSOIL. *(LESS THAN SIGNIFICANT)*

Erosion is the process by which soil, rock, or other surface material is worn away and transported from its original location by natural forces such as wind, water, or ice. Erosion shapes landscapes and may result in unstable soil conditions, particularly in hillside development or development within or in proximity to sloped areas. The natural process of creating topsoil is very slow, making existing topsoil a valuable and finite natural resource. In agricultural areas, the quality and depth of topsoil are key determinants of land capability and productivity, and soil characteristics form part of the basis for Important Farmland classifications used by the CDOC. In undeveloped or natural areas, topsoil often includes a native seedbank that contributes to the reestablishment of vegetation following disturbance. When possible, preserving existing topsoil on-site during construction or development projects is a critical conservation practice (USDA 2022).

Project topsoil will be stockpiled in designated topsoil reserve areas over the course of the proposed Project development. Areas will be designated around the perimeter of the Phase II heap leach pad extents

for topsoil removed as a result of the expanded heap leach pad, while topsoil from the crushing plant, process plant, and filtered tailings facility will primarily report to local areas in close proximity to their source near the South process plant. It is estimated that the Project initial heap leach pad, filtered tailings, and plant area will generate approximately 425,000 cubic yards of topsoil, which will be stockpiled for utilization during final reclamation.

As mentioned above, M3 conducted an analysis of the Project Area to understand peak stormwater discharge and runoff volumes to determine requirements for managing of surface flows around and through the Project Area as they relate to the proposed improvements for the proposed Project. The hydraulic analysis was conducted by M3 as a basis for the review on the premise of a 24-hour, 100-year storm event. Watershed volumes and maximum surface water elevations were evaluated to develop criteria for effective handling of the water and to minimize erosion concerns. Diversion channels and culverts around the north end of the heap leach pad and the northern extents of the Mine Area will direct flow around and through regraded surfaces to the natural channel, which has handled much of this flow historically. Channel armoring in the form of Reno/Gabion mattresses will be used at areas sharing a border with new process facilities for erosion control. The existing heap facility has been designed for the management of erosion from the exposed tailings surface and will be sloped and connected to the Phase II heap leach pad to allow drainage of rain events and minimize the potential for erosion.

Additionally, wind erosion is a concern on the exposed tailings surface and will be managed during normal operations with the application of water and/or the use of chemical palliatives. Control of both water and wind erosion during reclamation and closure will be accomplished through the application of a surface armoring layer. Implementation of applicant committed design features identified in the Castle Mountain Mine Plan of Operations and Reclamation Plan would further limit effects of erosion. These features include slope stabilization and micro-catchment contouring to reduce erosion.

Construction and operational activities would have the potential to temporarily increase erosion at the Project Area as a result of grading, trenching, and other ground disturbance. The proposed Project would be required to comply with the National Pollutant Discharge Elimination System (NPDES) Compliance, which requires projects involving grading to comply with provisions of the NPDES. The proposed Project would disturb more than one acre of soil and would be required to obtain an NPDES Construction General Permit from the Colorado River Basin RWQCB. The Construction General Permit requires construction sites that disturb one acre or more of land to implement stormwater controls and to develop a Stormwater Pollution Prevention Plan (SWPPP) with best management practices (BMPs) to minimize the amount of sediment and other pollutants associated with construction sites from being discharged in stormwater runoff.

Based on required compliance with existing SWPPP regulations and implementation of the Castle Mountain Mine Plan of Operations and Reclamation Plan, ground-disturbing activities would not result in substantial erosion or substantial loss of topsoil. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact GE-5
The Project would not result in substantial soil erosion or the loss of topsoil.
Mitigation Measures
Mitigation is not necessary. Impact GE-5 would be less than significant.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

IMPACT GE-6: THE PROJECT WOULD NOT RESULT IN ON- OR OFF-SITE LANDSLIDE, LATERAL SPREADING, SUBSIDENCE, LIQUEFACTION, OR COLLAPSE. *(LESS THAN SIGNIFICANT)*

The Project Area is not in a known California landslide area per CGS mapping, which shows landslides compiled by the CGS from a variety of sources, including, among others, Caltrans, the National Weather Service, state and local emergency services, and law enforcement (CGS 2026). Implementation of the proposed Project would result in construction activities and an expansion of the existing CMM, which would result in ground disturbance throughout the Project Area. The Geotechnical Report prepared for the proposed Project provided slope recommendations, including interramp slope angles and bench design parameters based on laboratory testing, geotechnical drilling information, and an updated geotechnical model (Call and Nicholas, Inc. 2020; see EIR Appendix 7). The Technical Report on the Castle Mountain Project Feasibility Study provided by M3 (see EIR Appendix 8) incorporated the recommendations from Call and Nicholas into the mine plan design to ensure the proposed Project is designed and constructed to withstand potential ground failure and reduce the potential to stress unstable soil conditions at the Project Area. In addition, the proposed leach pad has been designed with a lining system in accordance with CCR Title 27 requirements and International Cyanide Code recommendations, which meet or exceed the North American standards and practices for lining systems, piping systems, and process ponds. These standards and the proposed leach pad are intended to minimize the potential for facility operations to impact soils, surface water, and groundwater, and to reduce the potential for lateral spreading.

Proposed mine expansion activity anticipates an average water use of up to four times the current rate of water extraction during the dry season. The proposed Project would include the extraction of water from multiple well fields, both existing and new, located in the Lanfair water basin and adjacent basins to the proposed Project. The proposed Project will continue to conserve water by use of low evaporation drip emitters, burying drip emitters when feasible, limiting water in ponds with larger evaporative losses, use of binders and dust collectors that limit water needs for dust suppression and using extensive water recycling in the process. In addition, by drawing water from multiple well fields in different water basins, water is drawn from a larger area, which lessens the demand on a single well field/aquifer (M3 2021). Therefore, it is not anticipated that subsidence would occur at the Project Area based on the use of multiple well fields, anticipated aquifer response, and water conservation measures incorporated into Project design and operations. Implementation of the proposed Project would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact GE-6
The Project would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
Mitigation Measures
Mitigation is not necessary. Impact GE-6 would be less than significant.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

IMPACT GE-7: THE PROJECT WOULD NOT BE LOCATED ON EXPANSIVE SOIL, AS DEFINED IN TABLE 18-1-B OF THE UNIFORM BUILDING CODE (1994), AND WOULD NOT CREATE SUBSTANTIAL DIRECT OR INDIRECT RISKS TO LIFE OR PROPERTY. *(NO IMPACT)*

As mentioned above, soils on the Project Area were tested by M3 in 2019 and 2020 to characterize Project Area subsurface characteristics and how they may affect design and construction relating to facilities on-site. A total of 29 test pits and three geotechnical borings were tested. These test pits and borings were specifically located in anticipated locations of major process facilities. Samples were collected from the boring and test pits and tested for expansion index, soil gradation, soil pH, resistivity, and soluble contents. Based on the laboratory data and field evaluation, no geotechnical fatal flaws were identified. The local soil materials were characterized as suitable for construction materials for the various facility components (M3 2021; see EIR Appendix 8).

Based on on-site conditions and development requirements outlined in the CBC, *no impact* associated with expansive soils would occur, and mitigation is not necessary.

Impact GE-7
The Project would not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), and would not create substantial direct or indirect risks to life or property.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

IMPACT GE-8: THE PROJECT WOULD NOT BE LOCATED IN AN AREA WITH SOILS INCAPABLE OF ADEQUATELY SUPPORTING THE USE OF SEPTIC TANKS OR ALTERNATIVE WASTEWATER DISPOSAL SYSTEMS. *(NO IMPACT)*

Construction of the proposed Project would require an average of 500 temporary construction workers daily on-site and an anticipated additional 400 permanent employees during operation. The CMM facilities have been furnished with sewerage to conform to the County Building and Safety Department and Department of Environmental Health requirements. On-site sewage will continue to flow by gravity to local septic systems located in proximity to points of use. Septic systems and leach fields will be sized appropriately for building occupancy. Waste liquids would be removed by qualified waste disposal contractors and disposed of in accordance with all applicable regulations and codes.

Soils suitable for septic and wastewater disposal systems are generally well-drained so that water can percolate through the soils efficiently. A compacted permeability test of the soils on-site was conducted,

and the tested soils had relatively consistent permeability from a simulated stack, indicating there is a very low risk in permeability issues (Call and Nicholas, Inc. 2020; EIR Appendix 7). Thus, *no impact would occur*, and mitigation is not necessary.

Impact GE-8
The Project would not be located in an area with soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

IMPACT GE-9: THE PROJECT WOULD NOT DIRECTLY OR INDIRECTLY DESTROY A UNIQUE PALEONTOLOGICAL RESOURCE OR SITE OR UNIQUE GEOLOGIC FEATURE. *(LESS THAN SIGNIFICANT)*

The Project Area is located within the Basin and Range Geomorphic Province, specifically the Great Basin, which is characterized by a complex geologic history spanning approximately 1.8 billion years and consisting of faulted mountain ranges and sediment-filled basins. These geologic conditions influence the potential for paleontological resource occurrence within the Project Area.

Paleontological sensitivity within the Project Area is evaluated using the BLM Potential Fossil Yield Classification (PFYC) system. The paleontological resources analysis area includes both the utility corridor (approximately 380 acres) and the broader Project disturbance area (approximately 1,854 acres). The majority of the disturbance area is mapped as low (PFYC 2) or very low (PFYC 1) sensitivity, with a small portion mapped as unknown sensitivity (PFYC U). No geologic units with moderate to very high paleontological sensitivity (PFYC 3–5) are present within the Project Area.

Under CEQA, while "unique paleontological resources" are not explicitly defined in Appendix G, significance is typically determined based on professional standards such as those established by the Society of Vertebrate Paleontology (SVP). These standards define significant paleontological resources as fossils or fossil-bearing deposits that provide important scientific information, including vertebrate fossils, rare invertebrate or plant fossils, and trace fossils older than approximately 5,000 years.

Ground-disturbing activities associated with the proposed Project—including mining expansion, pipeline trenching, and construction of supporting infrastructure—have the potential to encounter previously undiscovered paleontological resources, particularly in areas mapped as PFYC U. However, because the majority of the Project Area is characterized by low to very low sensitivity, the likelihood of encountering significant paleontological resources is considered low.

Consistent with CEQA requirements, the impact analysis considers whether the proposed Project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. In the absence of mitigation, ground disturbance could result in the permanent loss of nonrenewable paleontological resources if such resources are present and not identified prior to disturbance. To address this potential impact, the proposed Project includes an applicant-committed measure (APM-PALEO-1) requiring that all construction activities cease in the vicinity of a discovery, followed by evaluation by a qualified paleontologist and implementation of appropriate treatment measures, including avoidance,

documentation, and/or data recovery. These procedures are consistent with standard CEQA mitigation practices and SVP guidelines. With implementation of this APM, the proposed Project would not result in the destruction of a unique paleontological resource or site, and impacts would be *less than significant.*

Impact GE-9
The Project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
Mitigation Measures
Mitigation is not necessary. Impact GE-9 would be less than significant.

4.7.5.2 Mineral Resources

a) Would the project 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?

IMPACT MR-1: THE PROJECT WOULD NOT 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. *(LESS THAN SIGNIFICANT)*

The *CIM Definition Standards for Mineral Resources & Mineral Reserves* (CIM Definition Standards) state that: "A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction" (Canadian Institute of Mining, Metallurgy and Petroleum [CIM] 2014). Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resources will be converted into mineral reserves. In order to sufficiently test the reasonable prospects for eventual economic extraction by an open pit, pit shells were generated and a mineral resources estimate of the Mine Area was conducted in conformance with the most recent CIM Definition Standards (CIM 2014) and were prepared according to *CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines* (CIM Best Practice Guidelines) (CIM 2019).

Because the proposed Project is a mining project, it would have a less-than-significant impact in the loss of availability of mineral resources, as the CMM is currently actively mining gold and silver and would continue to operate as such with the proposed Project. Operations would effectively quadruple the annual mining rate from 22 million tons to 80 million tons during the proposed Project. Table 4.7-2 shows the Project Area open-pit resources, inclusive of mineral reserves. The mineral reserves for the Project Area are based on the conversion of the Measured and Indicated Mineral Resources within the ultimate reserve open-pit design. Measured Mineral Resources are converted to Proven Mineral Reserves, and Indicated Mineral Resources are converted to Probable Mineral Reserves. Table 4.7-3 shows the mineral reserves at the Project Area.

Table 4.7-2. Project Area Open Pit Resources Inclusive of Reserves

Type	Measured (kton)	Indicated (kton)	Measured and Indicated (kton)	Inferred (kton)
Oxide	90,863	233,467	324,330	66,935
Trans, Sul.	1,690	18,501	20,191	21,494
JSLA Backfill	4,478	30,305	34,784	3,523
Waste Dumps	--	--	--	3,145
Combined	**97,032**	**282,271**	**379,305**	**95,097**

Note: kton = kiloton (thousand tons)

Table 4.7-3. Project Area Mineral Reserves

Imperial	Tons (kton)	Gold Grade (oz/ton)	Gold (koz)
Proven Mineral Resources	93,600	0.016	1,498
Probable Mineral Resources	190,690	0.014	2,670
Subtotal	**284,290**	**0.015**	**4,168**

Note: kton = kiloton (thousand tons); koz = thousand ounces

The proposed Project has now combined Measured and Indicated Mineral Resources exclusive of mineral reserves that are amenable to open-pit mining that total 82 Mton at 0.018 oz/ton gold for 1,470 thousand ounces (koz) contained gold. These mineral resources occur predominantly within the oxide portion of the ore body and include portions of transition and sulfide ore. The current LOM plan was developed based on Proven and Probable Mineral Reserves of 284.3 Mton with a grade of 0.015 oz/ton at a cut-off grade of 0.005 oz/ton Au. The total waste mined will be 701.9 Mton (M3 2021). Additionally, within the CWP, the CMM is designated in the Resource Conservation (RC) and Resource/Land Management (RLM) zoning designations. The RC land use zoning designation provides sites for open space and recreational activities, single-family homes on very large parcels, and similar and compatible uses (San Bernardino County Development Code Chapter 82.03). The RLM zoning designation is intended to "manage, preserve, and protect natural resources such as agricultural/grazing lands, watersheds, minerals, and wildlife habitat areas, as well as open space areas not otherwise protected or preserved." Typical uses within the RLM zone include "mineral extraction, timbering, or similar activities as permitted by federal or state regulations." (San Bernardino County 2020). Natural resource development (mining) is permitted with the approval of a mining Conditional Use Permit (CUP) 90M-013 (County of San Bernardino 1997). Based on the mineral resources and mineral reserves available at the Project Area and the fact that implementation of the proposed Project would quadruple the annual mining rate from 22 million tons to 80 million tons, the proposed Project would have a less-than-significant impact in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact MR-1
The Project would not 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.
Mitigation Measures
Mitigation is not necessary. Impact MR-1 would be less than significant.

b) Would the project 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?

IMPACT MR-2: THE PROJECT WOULD NOT 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. *(NO IMPACT)*

The Project Area is in the Mojave Desert in the historic Hart Mining District of San Bernardino County. As mentioned above, because the proposed Project is a mining project, it would not result in the loss of availability of an important mineral resource recovery site, as the CMM is currently actively mining gold and would continue to operate as such with the proposed Project. The proposed Project would quadruple the annual mining rate from 22 million tons to 80 million tons. Therefore, *no impact* would occur, and mitigation is not necessary.

Impact MR-2
The Project would not 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.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

4.7.6 Cumulative Impacts

4.7.6.1 Geology and Soils

IMPACT GE-6: THE PROJECT WOULD NOT RESULT IN CUMULATIVELY CONSIDERABLE IMPACTS RELATED TO GEOLOGY AND SOILS. *(LESS THAN SIGNIFICANT)*

Loss of soil through erosion, land subsidence due to groundwater withdrawals, and soil instability caused by construction and operation of a project are impacts that can cumulatively affect soil and geologic resources in combination with other past, present, and reasonably foreseeable future actions in a given area. These potential cumulative impacts would apply to the construction, operation, and maintenance phases of the proposed Project. All other geology and soils issues (such as strong seismic ground shaking, seismically induced ground failure, collapsible soils, expansive soils, paleontological resources, and unique geologic feature) relate to local, site-specific soil conditions, ground response to earthquakes, and the potential for adverse soil conditions to damage a project's structural components. Since impacts related to ground failure, collapsible soils, expansive soils, and paleontological resources are localized, cumulative impacts do not, and cannot, exist. Therefore, only potential soil erosion, land subsidence, and soil stability are analyzed in this discussion.

Soil Erosion

Projects located in the same watershed as the proposed Project could contribute to cumulative soil erosion or land subsidence impacts. The greatest potential for cumulative impacts with respect to soil erosion would occur if construction phased of the cumulative projects were to happen concurrently with the

proposed Project. However, the operation of the cumulative projects is included in this analysis because minor alterations in topography and the addition of impervious surfaces could combine to cause or contribute to cumulative impacts. In the Cumulative Impact Analysis, discussed in Chapter 3, *Environmental Setting*, a list of existing and reasonably foreseeable projects in the region was evaluated (see Table 3-1, *Cumulative Development Scenario Project List*). The Mojave Groundwater Bank project would be constructed in the same watershed (Lanfair Valley Watershed), which could combine to cause or contribute to cumulative erosion impacts. As a hydraulic analysis was conducted using the San Bernardino Hydraulic Manual Guidelines as a basis for the review on the premise of a 24-hour, 100-year storm event for the proposed Project, watershed volumes and maximum surface water elevations were evaluated to develop criteria for effective handling of water and to minimize erosion concerns. It is expected that each cumulative project would also implement project-specific erosion control design features. Additionally, the proposed Mojave Groundwater Bank project would also not result in an increase of impervious surfaces. As discussed further under Impact GE-1, based on required compliance with existing regulations and the nature of the proposed Project, ground-disturbing activities would not result in substantial erosion or substantial loss of topsoil. As there is a limited number of additional proposed projects in the same watershed as the proposed Project, the potential for cumulative erosion or topsoil loss is considered low. Therefore, these cumulative projects would not result in potential cumulative soil erosion.

Land Subsidence

For land subsidence, applicable potential cumulative projects include all projects that would draw groundwater from the same aquifer. The scope of impacts would include all phases of the proposed Project because some level of groundwater is typically needed for construction and operation needs. Land subsidence could occur either at the Project Area or a neighboring project site if the amount of groundwater use associated with these projects results in a lowering of the groundwater levels sufficient to result in ground subsidence. Proposed mine expansion activity anticipates an average water use of up to four times the current rate of water extraction during the dry season. The proposed Project would include the extraction of water from multiple well fields, both existing and new, located in the Lanfair water basin and adjacent basins to the proposed Project. The proposed Project will continue to conserve water by use of low evaporation drip emitters, burying drip emitters when feasible, limiting water in ponds with larger evaporative losses, using binders and dust collectors that limit water needs for dust suppression, and using extensive water recycling in the process. In addition, by drawing water from multiple well fields in different water basins, water is drawn from a larger area, which lessens the demand on a single well field/aquifer (M3 2021). The only cumulative project that crosses the Colorado River Basin is the Mojave Groundwater Bank project, which does not propose to lower groundwater levels, but instead would use a naturally recharging aquifer system and convert fossil fuel pipelines to conserve, store, and deliver clean, reliable water to communities. The Mojave Groundwater Bank project would conserve rain and snowmelt from the New York Mountains before it is lost to evaporation, creating an immediately available supply within the Colorado River Basin (Cadiz 2026). The amount of groundwater drawdown therefore, would be determined solely by the proposed Project, which is not expected to cause subsidence during Project construction or operation. Therefore, no impact would occur.

Soil Stability

For soil stability, applicable potential cumulative projects include projects within the vicinity of the proposed Project. There are no cumulative projects in the vicinity of the proposed Project that would interfere with the soils within the Project Area that could result in soil instability related to the slope and design of a project. Therefore, no impact would occur.

Therefore, the proposed Project's cumulative contribution would be considered *less than significant* and less than cumulatively considerable.

Impact GE-6 (Cumulative Impacts)
The Project would not result in cumulatively considerable impacts related to geology and soils.
Mitigation Measures
Mitigation is not necessary. Impact GE-6 would be less than significant.

4.7.6.2 Mineral Resources

IMPACT MR-3: THE PROJECT WOULD NOT RESULT IN CUMULATIVELY CONSIDERABLE IMPACTS RELATED TO MINERAL RESOURCES. *(LESS THAN SIGNIFICANT)*

The proposed Project's cumulative study area and development scenario are described in Chapter 3, *Environmental Setting*. The proposed Project would not result in effects that, when considered in combination with the impacts of nearby regional projects, would be considered cumulatively considerable or significant. Any reasonably foreseeable future development would be required to adhere to the permitted uses of each specific project site to avoid the loss of mineral resources and mineral resource recovery sites. The proposed Project would result in less-than-significant impacts to mineral resources or mineral resource recovery sites. Therefore, the proposed Project's cumulative contribution would be *less than significant* and less than cumulatively considerable.

Impact MR-3 (Cumulative Impacts)
The Project would not result in cumulatively considerable impacts related to mineral resources.
Mitigation Measures
Mitigation is not necessary. Impact MR-3 would be less than significant.

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4.8 GREENHOUSE GAS EMISSIONS

This section of the EIR analyzes potential impacts related to greenhouse gas (GHG) emissions resulting from implementation of the proposed Project. The analysis quantitatively evaluates construction-phase and operational GHG emissions, compares those emissions against applicable significance thresholds, and evaluates the Project's consistency with State and local GHG reduction plans in accordance with CEQA Guidelines Sections 15064.4 and 15126.2. The analysis also addresses the greenhouse gas emissions significance criteria set forth in Appendix G of the CEQA Guidelines, including whether the Project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment and whether it would conflict with applicable plans, policies, or regulations adopted for the purpose of reducing greenhouse gas emissions.

4.8.1 Existing Conditions

Global climate change is driven by the accumulation of greenhouse gases (GHGs) in the atmosphere, including carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). While climate change occurs at a global scale, CEQA requires evaluation of a project's incremental contribution to cumulative GHG emissions. Accordingly, the existing conditions discussion focuses on the regulatory and policy context governing GHG emissions rather than attempting to characterize a localized physical baseline.

Global warming, a related concept, is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. There is a general scientific consensus that global climate change is occurring, caused in whole or in part by increased emissions of GHGs that keep the Earth's surface warm by trapping heat in the Earth's atmosphere, in much the same way as glass traps heat in a greenhouse. The Earth's climate is changing because human activities, primarily the combustion of fossil fuels, are altering the chemical composition of the atmosphere through the buildup of GHGs. GHGs are released by the combustion of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect. While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy.

Regarding the adverse effects of global warming, as reported by the Southern California Association of Governments (SCAG): "Global warming poses a serious threat to the economic well-being, public health and natural environment in Southern California and beyond. The potential adverse impacts of global warming include, among others, a reduction in the quantity and quality of water supply, a rise in sea levels, damage to marine and other ecosystems, and an increase in the incidence of infectious diseases" (SCAG 2007:116). Over the past few decades, the energy intensity of the national and state economy has been declining due to the shift to a more service-oriented economy. California ranked fifth lowest among the states in carbon dioxide (CO_2) emissions from fossil fuel consumption per unit of gross state product. However, in terms of total CO_2 emissions, "California is second only to Texas in the nation and is the sixteenth largest source of climate change emissions in the world, exceeding most nations. The SCAG region, with close to half of the state's population and economic activities, is a major contributor to the global warming problem" (SCAG 2007:117).

Observed impacts of climate change on biological systems—including humans, wildlife, and vegetation—affect terrestrial, marine, and freshwater ecosystems. Similar to global trends, species are responding to warming with shifts in elevation and latitude, changes in the timing of key life cycle events, and alterations in species abundance and community composition. While humans generally have a greater capacity to adapt to climate change compared to plants and animals in natural ecosystems, climate change still poses significant risks to public health. Rising temperatures and changing precipitation patterns can

influence the spread of vector-borne diseases and alter disease dynamics in California, as well as increase the variability of heat-related illnesses and fatalities. Additionally, the area burned by wildfires each year has grown since 1950.

4.8.1.1 Greenhouse Gas Background

GHGs include CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Carbon is the most abundant GHG; other GHGs are less abundant but have higher global warming potential (GWP) than CO_2. Thus, emissions of other GHGs are frequently expressed in the equivalent mass of CO_2, denoted as CO_2e. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions. The primary GHGs attributed to global climate change are described below.

CARBON DIOXIDE

In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants; volcanic outgassing; decomposition of organic matter; and evaporation from the oceans. Anthropogenic sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Anthropogenic sources of CO_2 amount to over 40 billion tons per year globally (Stanford 2023). Natural sources release substantially larger amounts of CO_2. However, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of human-made CO_2. Consequently, the gas is building up in the atmosphere.

METHANE

CH_4 is a colorless, odorless gas that is not flammable under most circumstances. It is the major component of natural gas, about 87% by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. CH_4 is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources, such as wildfires. The atmospheric lifetime of CH_4 is approximately 12 years.

NITROUS OXIDE

N_2O is a clear, colorless gas with a slightly sweet odor that is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.

HYDROFLUOROCARBONS, PERFLUOROCARBONS, AND SULFUR HEXAFLUORIDE

HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol, an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion. PFCs and SF_6 are emitted from various industrial processes, including

aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no primary aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs.

The magnitude of the impact on global warming differs among the GHGs. The effect each GHG has on climate change is measured as a combination of the volume of its emissions and its GWP. GWP is one type of simplified index based on radiative properties used to estimate the potential future impacts of emissions of different gases upon the climate system, expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2e. GWP is based on a number of factors, including the radiative efficiency (heat-absorbing ability) of each gas relative to that of CO_2, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO_2. The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that period. HFCs, PFCs, and SF_6 have a greater GWP than CO_2. In other words, these other GHGs have a greater contribution to global warming than CO_2 on a per-mass basis. However, CO_2 has the greatest impact on global warming because of the relatively large quantities of CO_2 emitted into the atmosphere. A summary of the atmospheric lifetime and GWP of selected gases is presented in Table 4.8-1. As shown in Table 4.8-1, GWPs range from 1 to 23,500. The IPCC has released three assessment reports (AR4, AR5, and AR6) with updated GWPs; however, the California Air Resources Board (CARB) reports the statewide GHG inventory using the AR4 GWPs, which is consistent with international reporting standards. By applying the GWP ratios, the Project-related CO_2e emissions can be shown in metric tons per year.

Table 4.8-1. Global Warming Potentials

	GWP Values for 100-year Time Horizon		
GHG	**AR4**	**AR5**	**AR6**
Carbon dioxide (CO_2)	1	1	1
Methane (CH_4)	25	Fossil origin: 30 Non-fossil origin: 28	Fossil origin: 29.8 Non-fossil origin: 27.0
Nitrous oxide (N_2O)	298	265	273
Nitrogen trifluoride (NF_3)	17,200	16,100	17,400
Sulfur hexafluoride (SF_6)	22,800	23,500	24,300

Source: IPCC (2024)

4.8.1.2 Greenhouse Gas Emissions Inventories

UNITED STATES GHG EMISSIONS

Per the USEPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2023* (USEPA 2025), total U.S. GHG emissions have decreased by 5% from 1990 to 2023, down from a high of 15.2% above 1990 levels in 2007. The largest source of GHG emissions from human activities in the United States is from the burning of fossil fuels for electricity, heat, and transportation. The latest national GHG emissions are for calendar year 2023, in which total gross U.S. GHG emissions were reported at 6,197.3 million metric tons (MMT) CO_2e. From 2022 to 2023, gross emissions decreased by 2.3% (146.8 MMT CO_2e). Net emissions (including sinks) were 5,257.4 MMT CO_2e in 2023. Overall, net emissions have decreased by 4.4% from 1990 to 2023.

STATEWIDE GHG EMISSIONS

According to California's 2000–2023 GHG emissions inventory, California emitted 360.4 MMT CO_2e in 2023 (CARB 2025), a 3.1% decrease from 2022. The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high-GWP substances, and recycling and waste. The California GHG emission source categories (as defined in CARB's 2008 Scoping Plan [CARB 2008]) and their relative contributions in 2022 are presented in Table 4.8-2. Based on the data presented, the 2022 statewide GHG inventory, GHG emissions fell below 1990 levels, consistent with Assembly Bill (AB) 32. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California will continue to reduce emissions below the 2020 target of 431 metric tons CO_2e ($MTCO_2e$).

Table 4.8-2. California Greenhouse Gas Inventory

	MMT CO_2e				
Parameter	**2019**	**2020**	**2021**	**2022**	**2023**
Transportation	166.1	135.2	145.1	139.9	133.7
	40.6%	37.6%	39.0%	37.7%	37.1%
Electric power	58.8	59.5	62.3	59.8	57.3
	14.4%	16.5%	16.7%	16.1%	15.9%
Industrial	88.2	73.6	74.2	72.7	66.3
	21.5%	20.5%	20.0%	19.6%	18.6%
Commercial and residential	43.8	39.0	38.8	39.5	43.3
	10.7%	10.8%	10.4%	10.6%	12.0%
Agriculture	31.8	31.4	30.4	29.8	29.2
	7.8%	8.7%	8.2%	8.0%	8.1%
High GWP	20.6	21.3	21.3	21.3	21.3
	5.0%	5.9%	5.7%	5.7%	5.9%
Total Net Emissions	**409.3**	**360.0**	**372.1**	**363.0**	**360.4**

Source: CARB (2025)

4.8.2 Regulatory Setting

4.8.2.1 Federal

The Supreme Court of the United States (SCOTUS) ruled in *Massachusetts v. Environmental Protection Agency*, 127 S. Ct. 1438 (2007), that CO_2 and other GHGs are pollutants under the federal Clean Air Act (CAA) that the USEPA must regulate if it determines they pose an endangerment to public health or welfare. SCOTUS did not mandate that the USEPA enact regulations to reduce GHG emissions. Instead, SCOTUS found that the USEPA could avoid taking action if it found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHGs contribute to climate change.

On April 17, 2009, the USEPA issued a proposed finding that GHGs contribute to air pollution that may endanger public health or welfare. On April 24, 2009, the proposed rule was published in the *Federal*

Register under Docket ID No. EPA-HQ-OAR-2009~0171. The USEPA stated that high atmospheric levels of GHGs "are the unambiguous result of human emissions and are very likely the cause of the observed increase in average temperatures and other climatic changes." The USEPA further found that "atmospheric concentrations of GHGs endanger public health and welfare within the meaning of Section 202 of the Clean Air Act." The findings were signed by the USEPA Administrator on December 7, 2009. The final findings were published in the *Federal Register* on December 15, 2009. The final rule was effective on January 14, 2010. While these findings alone do not impose any requirements on industry or other entities, this action is a prerequisite to regulatory actions by the USEPA, including, but not limited to, GHG emissions standards for light-duty vehicles.

On July 20, 2011, the USEPA published its final rule deferring GHG permitting requirements for CO_2 emissions from biomass-fired and other biogenic sources until July 21, 2014. Environmental groups challenged the deferral. In September 2011, the USEPA released the *Accounting Framework for Biogenic CO_2 Emissions from Stationary Sources* (USEPA 2011), which analyzes accounting methodologies and suggests implementation strategies to address biogenic CO_2 emitted from stationary sources.

On April 4, 2012, the USEPA published a proposed rule to establish, for the first time, a new source performance standard for GHG emissions. Under the proposed rule, new fossil fuel–fired generating units larger than 25 megawatts (MW) are required to limit emissions to 1,000 pounds of CO_2 per megawatt-hour on an average annual basis, subject to certain exceptions.

On April 17, 2022, the USEPA issued emission rules for oil production and natural gas production and processing operations, which are required by the CAA under 40 Code of Federal Regulations (CFR) Parts 60 and 63. The final rules include the first federal air standards for natural gas wells that are hydraulically fractured, along with requirements for several other sources of pollution in the oil and gas industry that currently are not regulated at the federal level.

On February 12, 2026, the USEPA issued a final rule rescinding the 2009 Endangerment Finding under Section 202 of the Clean Air Act for new motor vehicles and engines, with an effective date of April 20, 2026. As such, the USEPA simultaneously repealed federal GHG emission standards for light-, medium-, and heavy-duty vehicles.

4.8.2.2 State

ENERGY INDEPENDENCE AND SECURITY ACT

The Energy Independence and Security Act of 2007 facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.
- Requiring approximately 25% greater efficiency for lightbulbs by phasing out incandescent lightbulbs between 2012 and 2014; requiring approximately 200% greater efficiency with lightbulbs, or similar energy savings, by 2020.
- While superseded by the USEPA and National Highway Traffic Safety Administration, (1) establishing miles-per-gallon targets for cars and light trucks, and (2) directing the National

Highway Traffic Safety Administration to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of the Energy Independence and Security Act address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

EXECUTIVE ORDERS S-3-05, B-30-15, AND B-55-18, AND ASSEMBLY BILL 1279

In 2005 the governor issued Executive Order (EO) S-3-05, establishing statewide GHG emissions reduction targets, as well as a process to ensure the targets are met. The order directed the Secretary of the California Environmental Protection Agency (CalEPA) to report every 2 years on the State's progress toward meeting the governor's GHG emission reduction targets. The statewide GHG targets established by EO S-3-05 are as follows:

- By 2010, reduce to 2000 emission levels
- By 2020, reduce to 1990 emission levels
- By 2050, reduce to 80% below 1990 levels

EO B-30-15, issued by Governor Brown in April 2015, established an additional statewide policy goal to reduce GHG emissions 40% below their 1990 levels by 2030. Reducing GHG emissions by 40% below 1990 levels in 2030 and by 80% below 1990 levels by 2050 (consistent with EO S-3-05) aligns with scientifically established levels needed in the United States to limit global warming below 2 degrees Celsius.

The State Legislature adopted equivalent 2020 and 2030 statewide targets in the California Global Warming Solutions Act of 2006 (also known as AB 32) and Senate Bill (SB) 32, respectively, both of which are discussed below. However, the legislature has not yet adopted a target for the 2050 horizon year. As a result of EO S-3-05, the California Action Team (CAT), led by the Secretary of CalEPA, was formed. The CAT is made up of representatives from a number of State agencies and was formed to implement global warming emission reduction programs and to report on the progress made toward meeting statewide targets established under the EO. The CAT reported several recommendations and strategies for reducing GHG emissions and reaching the targets established in the EO.

The CAT stated that "smart" land use is an umbrella term for strategies that integrate transportation and land use decisions. Such strategies generally encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. These strategies develop more efficient land use patterns within each jurisdiction or region to match population increases, workforce, and socioeconomic needs for the full spectrum of the population. "Intelligent transportation systems" is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and the movement of people, goods, and services.

EO B-55-18, issued by Governor Brown in September 2018, establishes a new statewide goal to achieve carbon neutrality as soon as possible, but no later than 2045, and achieve and maintain net-negative emissions thereafter. Based on this EO, CARB would work with relevant State agencies to develop a framework for implementation and accounting that tracks progress toward this goal, as well as ensuring future scoping plans identify and recommend measures to achieve the carbon neutrality goal.

In addition, AB 1279, known as the California Climate Crisis Act of 2022, is a law passed in California that requires the State to achieve carbon neutrality no later than 2045 and to reduce GHG emissions to at

least 85% below 1990 levels by that year. The law directs state agencies to develop and implement clear strategies to cut emissions across major sectors such as transportation, energy, and industry, while limiting the use of carbon offsets to no more than 15% of reductions. AB 1279 strengthens California's existing climate policies by setting legally binding long-term targets and reinforcing the State's commitment to addressing climate change through measurable, enforceable action.

ASSEMBLY BILL 32 (CALIFORNIA GLOBAL WARMING SOLUTION ACT)

The California Global Warming Solutions Act of 2006 (also known as AB 32) commits the State to achieving the following:

- By 2010, reduce to 2000 GHG emission levels
- By 2020, reduce to 1990 levels

To achieve these goals, which are consistent with the California CAT GHG targets for 2010 and 2020, AB 32 mandates that CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources consistent with the CAT strategies, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. In order to achieve the reductions, AB 32 requires CARB to adopt rules and regulations in an open, public process that achieves the maximum technologically feasible and cost-effective GHG reductions.

SB 32, signed on September 8, 2016, updates AB 32 to include an emissions reduction goal for the year 2030. Specifically, SB 32 requires CARB to ensure that statewide GHG emissions are reduced to 40% below the 1990 level by 2030. The new plan, outlined in SB 32, involves increasing renewable energy use, imposing tighter limits on the carbon content of gasoline and diesel fuel, improving energy efficiency, and curbing emissions from key industries.

SENATE BILL 32 AND ASSEMBLY BILL 197

SB 32 and AB 197, both enacted in 2016, update AB 32 and work together as companion legislation. SB 32 formally established the 2030 emissions reduction target set by EO B-30-15, mandating that CARB ensure statewide GHG emissions are cut to 40% below 1990 levels by 2030. AB 197 created the Joint Legislative Committee on Climate Change Policies—composed of at least three senators and three assembly members—to provide ongoing oversight of the State's climate policies. Additionally, AB 197 added two nonvoting legislative members to CARB's Board; requires CARB to publicly share and update (at least annually on its website) emissions data for GHGs, criteria air pollutants, and toxic air contaminants (TACs) from reporting facilities; and directs CARB to specify certain information about GHG reduction measures when revising the Scoping Plan.

California Air Resources Board Climate Change Scoping Plan

California's AB 32 requires CARB to develop and update a scoping plan every 5 years to achieve the most feasible and cost-effective GHG emission reductions (California Health and Safety Code Section 38561(a)). The initial plan, approved in 2008, set strategies such as regulations, market-based programs, and voluntary measures to meet the 2020 GHG limit and support long-term climate goals.

The first update in 2014 confirmed progress toward the 2020 target and recommended establishing a 2030 interim goal, emphasizing technologies like energy efficiency, electrification, and clean energy. The 2017 update expanded on previous strategies and introduced new approaches to reach the 2030 target, including renewable energy mandates, stricter fuel standards, and continued use of cap-and-trade.

In 2022, CARB adopted a more ambitious scoping plan aiming for carbon neutrality by 2045 and a new 2030 GHG reduction target of 48% below 1990 levels, surpassing the statutory 40% reduction requirement. This plan broadens its focus to include carbon capture and storage, both through technological and nature-based solutions.

The 2022 Scoping Plan also provides guidance for local governments, emphasizing the importance of climate action planning and CEQA review for new developments. Appendix D of the 2022 Scoping Plan outlines non-binding recommendations for residential and mixed-use projects, such as including electric vehicle (EV) charging, infill locations, preserving natural lands, transit access, affordable housing, and all-electric appliances. Projects meeting all these criteria are considered aligned with State climate goals and generally result in less-than-significant GHG impacts under CEQA.

Lead agencies may also use alternative approaches to assess project consistency with State climate goals, such as achieving net-zero emissions or following thresholds set by air districts. However, CARB acknowledges that net-zero emissions may not be feasible for all projects.

CAP-AND-INVEST PROGRAM

The 2008 Climate Change Scoping Plan identified a cap-and-trade program as one of the strategies for California to reduce GHG emissions. The cap-and-trade program was a key element in California's climate plan, setting a statewide limit on sources responsible for 85% of California's GHG emissions and establishing a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013, applying to large electric power plants and large industrial plants. In 2015, fuel distributors, including distributors of heating and transportation fuels, also became subject to the cap-and-trade rules. At that stage, the program encompassed approximately 360 businesses throughout California and nearly 85% of the State's total GHG emissions. Covered entities subject to the cap-and-trade program include sources that emit more than 25,000 MT CO_2e per year. Triggering of the 25,000 MT CO_2e per year "inclusion threshold" is measured against a subset of emissions reported and verified under the California Regulation for the Mandatory Reporting of Greenhouse Gas Emissions. Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions and are free to buy and sell allowances on the open market. California held its first auction of GHG allowances on November 14, 2012.

California's GHG cap-and-trade system reduced GHG emissions to 1990 levels by 2020. In September 2025, AB 1207 and SB 840 were signed into law, establishing updated climate goals through 2045 and rebranding the program to "Cap-and-Invest." The legislation requires emissions reductions of at least 40% below 1990 levels by the year 2030 and net zero GHG emissions by the year 2045.

CALIFORNIA RENEWABLES PORTFOLIO STANDARD

The California Renewable Portfolio Standard (RPS) program (SB 1078; 2002) requires that 20% of the available energy supplies come from renewable energy sources by 2017. In 2006 SB 1078 accelerated the 20% mandate to 2010. These mandates apply directly to investor-owned utilities. On April 12, 2011, Governor Brown signed into law SB 2X, which modified the California RPS program to require that both public- and investor-owned utilities in California receive at least 33% of their electricity from renewable sources by the year 2020. SB 2X also requires regulated sellers of electricity to meet an interim milestone of procuring 25% of their energy supply from certified renewable sources by 2016.

Senate Bill 350

SB 350, signed October 7, 2015, is the Clean Energy and Pollution Reduction Act of 2015. The objectives of SB 350 are (1) to increase the procurement of electricity from renewable sources from 33% to 50% by

the end of 2030, and (2) to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

Senate Bill 100

SB 100, signed September 10, 2018, is the 100 Percent Clean Energy Act of 2018. SB 100 updates the goals of California's RPS and SB 350, as discussed above, to the following: achieve a 50% renewable resources target by December 31, 2026, and achieve a 60% target by December 31, 2030. SB 100 also requires that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers and 100% procured to serve all State agencies by December 31, 2045.

ASSEMBLY BILL 1493 AND EXECUTIVE ORDER B-16-12

AB 1493, passed in 2002, requires the development and adoption of regulations to achieve the maximum feasible reduction in GHG emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the state. CARB originally approved regulations to reduce GHGs from passenger vehicles in September 2004, which took effect in 2009. On September 24, 2009, CARB adopted amendments to these regulations that reduce GHG emissions from new passenger vehicles from 2009 through 2016. Although setting emission standards on automobiles is solely the responsibility of the USEPA, the federal CAA allows California to set state-specific emission standards on automobiles, and the State first obtains a waiver from the USEPA. The USEPA granted California a waiver until July 1, 2009. The comparison between the AB 1493 standards and the federal Corporate Average Fuel Economy standards was completed by CARB, and the analysis determined that the California emission standards were 16% more stringent through the 2016 model year and 18% more stringent for the 2020 model year. CARB is also committed to further strengthening these standards beginning with 2020 model year vehicles, to obtain a 45% GHG reduction in comparison to 2009 model years.

In March 2020, the USEPA issued the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, which would roll back fuel economy standards and revoke California's waiver. Under this rule, the USEPA would amend certain average fuel economy and GHG standards for passenger cars covering model years 2021 through 2026. In September 2019, the USEPA withdrew the waiver it had previously provided in California for the State's GHG and Zero Emission Vehicle programs under Section 209 of the CAA. The withdrawal of the waiver was effective on November 26, 2019. In response, several states, including California, have a lawsuit challenging the withdrawal of the USEPA waiver. These actions continue to be challenged in court. On January 20, 2021, President Biden issued an EO directing all executive departments and agencies to take action, as appropriate, to address federal regulations and other actions taken during the last four years that conflict with the administration's climate and environmental justice goals, which include the SAFE Vehicles Rule.

EO B-16-12, issued in March 2012, directed State agencies under the governor's authority to actively support and accelerate the widespread adoption of Zero Emission Vehicles. The order instructed CARB, the California Energy Commission (CEC), the California Public Utilities Commission, and other relevant agencies to collaborate with the Plug-In Electric Vehicle Collaborative and the California Fuel Cell Partnership to set benchmarks for achieving goals in 2015, 2020, and 2025. Statewide, EO B-16-12 established a target of reducing transportation-related GHG emissions to 80% below 1990 levels by 2050. This directive excluded vehicles with specialized performance requirements essential for public safety and welfare.

SENATE BILL 375

SB 375 requires CARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a Sustainable Communities Strategy (SCS) that integrates transportation, land use, and housing policies to plan how it will achieve the emissions target for its region. If the SCS is unable to achieve the regional GHG emissions reductions targets, then the MPO is required to prepare an alternative planning strategy that shows how the GHG emissions reduction target can be achieved through alternative development patterns, infrastructure, and/or transportation measures.

As required under SB 375, CARB is required to update regional GHG emission targets every eight years, with the last update formally adopted March 2018. As part of the 2018 update, CARB adopted a passenger vehicle–related GHG reduction target of 19% by 2035 for the SCAG region, which is more stringent than the previous reduction target of 13% by 2035.

CALIFORNIA CODE OF REGULATIONS TITLE 24 (CALIFORNIA BUILDING STANDARDS CODE)

Title 24 of the California Code of Regulations (CCR) is referred to as the California Building Standards Code. It consists of a compilation of several distinct standards and codes related to building construction, including plumbing, electrical, interior acoustics, energy efficiency, and accessibility for persons with physical and sensory disabilities. These standards are updated every three years. The most recent update, the 2022 California Building Standards, went into effect on January 1, 2023.

Part 6 – Building Energy Efficiency Standards/Energy Code

The Building Energy Efficiency Standards or the California Energy Code (24 CCR Part 6), originally enacted in 1978, establishes energy efficiency standards for residential and nonresidential buildings to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the CEC. The 2022 standards continue to improve upon the previous (2019) Title 24 standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2022 Energy Code is anticipated to reduce GHG emissions by 10 $MMTCO_2e$ over the next 30 years and result in approximately $1.5 billion in consumer savings. Compliance with Title 24 is enforced through the building permit process.

Part 11 – California Green Building Standards

The California Green Building Standards Code (CALGreen) (24 CCR Part 11) was developed to help the State achieve its GHG emissions reduction goals under AB 32 by codifying standards for reducing building-related energy, water, and resource demand, which in turn reduces GHG emissions from energy, water, and resource demand. CALGreen establishes mandatory measures for new residential and nonresidential buildings, which include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality.

CALIFORNIA CODE OF REGULATIONS, TITLE 20

Requirements for manufacturers to ensure that appliances comply with both federal and State energy and water efficiency standards are established in 20 CCR Sections 1401 through 1410. The CEC certifies appliances based on evidence provided by manufacturers demonstrating compliance with these standards. New appliances regulated under Title 20 include refrigerators, refrigerator-freezers, freezers, room air

conditioners, room air conditioning heat pumps, central air conditioners, spot air conditioners, vented gas space heaters, gas pool heaters, plumbing fittings and fixtures, fluorescent lamp ballasts, lamps, emergency lighting, traffic signal modules, dishwashers, clothes washers and dryers, cooking products, electric motors, low voltage dry-type distribution transformers, power supplies, televisions, consumer audio and video equipment, and battery charger systems. Title 20 outlines testing protocols for each appliance type, requiring them to meet specific standards for energy and water performance and design. Title 20 defines three categories of standards: federal and State standards for federally regulated appliances, State standards for federally regulated appliances, and State standards for non-federally regulated appliances.

EXECUTIVE ORDER S-01-07 (CALIFORNIA LOW CARBON FUEL STANDARD)

EO S-01-07, the Low Carbon Fuel Standard (LCFS) (issued January 18, 2007), requires a reduction of at least 10% in the carbon intensity of California transportation fuels by 2020. Regulatory proceedings and implementation of the LCFS were directed to CARB. CARB released a draft version of the LCFS in October 2008. The final regulation was approved by the Office of Administrative Law and filed with the Secretary of State on January 12, 2010; the LCFS became effective on the same day.

The 2017 update has identified LCFS as a regulatory measure to reduce GHG emissions to meet the 2030 emissions target. In calculating statewide emissions and targets, the 2017 update has assumed the LCFS to be extended to an 18% reduction in carbon intensity beyond 2020. On September 27, 2018, CARB approved a rulemaking package that amended the LCFS to relax the 2020 carbon intensity reduction from 10% to 7.5%, and to require a carbon intensity reduction of 20% by 2030.

ASSEMBLY BILL 1279 (CALIFORNIA CLIMATE CRISIS ACT)

In September 2022, the State Legislature adopted AB 1279, known as the California Climate Crisis Act. This bill establishes the State's goal of reaching net-zero GHG emissions as quickly as possible, and no later than 2045, and subsequently sustaining net-negative GHG emissions. AB 1279 also stipulates that, by 2045, statewide anthropogenic GHG emissions must be reduced by at least 85% below 1990 levels.

SENATE BILL 605 AND SENATE BILL 1383

SB 605, enacted in 2014, directs CARB to develop a comprehensive plan for reducing short-lived climate pollutants (SLCPs) in California (California Health and Safety Code Section 39730). SB 1383, enacted in 2016, further requires CARB to approve and begin implementing this plan by January 1, 2018 (California Public Resources Code [PRC] Sections 42652–43654). SB 1383 sets specific reduction targets for SLCPs: a 40% decrease from 2013 levels by 2030 for CH_4 and HFCs, and a 50% decrease for anthropogenic black carbon. The bill also outlines measures for reducing emissions from dairy and livestock operations, as well as landfills. In response, CARB adopted its SLCP Reduction Strategy in March 2017, which provides a statewide framework for cutting emissions of black carbon, CH_4, and fluorinated gases.

4.8.2.3 Regional

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

The Mojave Desert Air Quality Management District (MDAQMD) is the local air quality agency and shares responsibility with CARB for ensuring that federal and State ambient air quality standards are achieved and maintained in the Mojave Desert Air Basin. MDAQMD has adopted an annual and daily significance threshold for CO_2e emissions of 100,000 short tons and 548,000 pounds(MDAQMD 2020).

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and addresses regional issues relating to transportation, the economy, community development, and the environment. SCAG coordinates with various air quality and transportation stakeholders in Southern California to ensure compliance with the federal and State air quality requirements, including applicable federal, State, and air district laws and regulations. As the federally designated MPO for the six-county Southern California region, SCAG is required by law to ensure that transportation activities conform to, and are supportive of, the goals of regional and State air quality plans to attain the National Ambient Air Quality Standards. In addition, SCAG is a co-producer, with South Coast Air Quality Management District (SCAQMD), of the transportation strategy and transportation control measure sections of the 2016 Air Quality Management Plan (AQMP). The development of the 2016 AQMP relies on population and transportation growth projections contained in SCAG's 2016–2040 Regional Transportation Plan (RTP)/SCS.

On September 3, 2020, SCAG's Regional Council adopted an updated RTP/SCS, *Connect SoCal: A Plan for Navigating to a Brighter Future* (Connect SoCal 2024 RTP/SCS) (SCAG 2024), which covers the period from 2020 through 2045. As with the 2016–2040 RTP/SCS, the purpose of the Connect SoCal 2024 RTP/SCS is to meet the mobility needs of the six-county SCAG region over the subject planning period through a roadmap identifying sensible ways to expand transportation options, improve air quality, and bolster Southern California long-term economic viability. On October 30, 2020, CARB accepted SCAG's determination that the SCS met the applicable State GHG emissions targets. The goals and policies of the Connect SoCal 2024 RTP/SCS are similar to, and consistent with, those of the 2016–2040 RTP/SCS. In addition, CARB's new target requiring a 19% reduction in per-capita GHG emissions has been included in the Connect SoCal 2024 RTP/SCS, to fulfill SB 375 compliance with respect to meeting the State's GHG emission reduction goals.

4.8.2.4 Local

SAN BERNARDINO COUNTY GREENHOUSE GAS REDUCTION PLAN UPDATE

The *San Bernardino County Greenhouse Gas Reduction Plan Update* (2021 GHGRP Update) is an update to the 2011 San Bernardino County GHGRP (2011 GHGRP). The 2021 GHGRP Update presents a target for the year 2030, which is to reduce emissions to 40% below 2007 levels. This goal would put the county on a path toward the State's long-term goal to achieve statewide carbon neutrality (zero net emissions) by 2045 (County of San Bernardino 2021). The 2021 GHGRP Update also includes screening tables that provide GHG performance features for residential and nonresidential projects that can be used as mitigation measures or incorporated into project designs. The screening tables assign points for each feature incorporated into a project. Each point value reflects the minimum expected reduction in emissions associated with that feature. This menu of features provides developers with maximum flexibility in selecting GHG reduction strategies for their projects. Point levels are determined based on improvements in efficiency compared to 2016 emission standards. Projects that achieve at least 100 points are considered consistent with the reduction targets outlined in the 2021 GHGRP Update.

SAN BERNARDINO COUNTYWIDE PLAN

The CWP (County of San Bernardino 2024a), adopted by the Board of Supervisors in 2020, updates and expands the County's General Plan by addressing the physical, social, and economic issues facing the unincorporated portions of the county. The CWP consists of the Policy Plan, the Business Plan, and a communities plan. The County Policy Plan, based on the former General Plan, consists of 11 elements: Land Use, Housing, Infrastructure and Utilities, Transportation and Mobility, Natural Resources,

Renewable Energy and Conservation, Cultural Resources, Hazards, Personal and Property Protection, Economic Development, and Health and Wellness. The County Business Plan consists of a policy-based governance element along with an implementation plan. The communities plan consists of 35 Community Action Guides that provide a framework for communities to create future character and independent identity through community actions.

Relevant goals and policies from the Natural Resources Element of the County Policy Plan are summarized in Table 4.8-3 (County of San Bernardino 2024b).

Table 4.8-3. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Natural Resources Element	
Goal NR-1	**Air Quality.** Air quality that promotes health and wellness of residents in San Bernardino County through improvements in locally-generated emissions.
Policy NR-1.1	**Land use.** We promote compact and transit-oriented development countywide and regulate the types and locations of development in unincorporated areas to minimize vehicle miles traveled and greenhouse gas emissions.
Policy NR-1.2	**Indoor air quality.** We promote the improvement of indoor air quality through the California Building and Energy Codes and through the provision of public health programs and services.
Policy NR-1.3	**Coordination on air pollution.** We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source.
Policy NR-1.4	**Military coordination on air quality.** We collaborate with the military to avoid or minimize impacts on military training and operations from air pollution and haze.
Policy NR-1.5	**Sensitive land uses.** We consider recommendations from the California Air Resources Board on the siting of new sensitive land uses and exposure to specific source categories.
Policy NR-1.6	**Fugitive dust emissions.** We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions.
Policy NR-1.7	**Greenhouse gas reduction targets.** We strive to meet the 2040 and 2050 greenhouse gas emission reduction targets in accordance with state law.
Policy NR-1.8	**Construction and operations.** We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.
Policy NR-1.9	**Building design and upgrades.** We use the [California Green Building Standards] CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions.

4.8.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to GHG emissions if the project would:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Each of these thresholds is discussed under Section 4.8.5, *Project-Specific Impacts and Mitigation Measures*, below. For purposes of this analysis, significance is evaluated using the Mojave Desert Air

Quality Management District (MDAQMD) quantitative threshold of 100,000 short tons of CO_2e per year for combined construction and operational emissions, consistent with MDAQMD guidance. Significance is also evaluated using the 2021 GHGRP Update.

4.8.4 Impact Assessment Methodology

This analysis focuses on the potential change of GHG emissions due to implementation of the proposed Project. GHG emissions would result from both Project construction and operation. Specific methodologies used to evaluate these emissions are discussed below. The analysis is based on Project specifics, methodologies and data sources consistent with the latest version of the California Emissions Estimator Model (CalEEMod). Accordingly, this analysis has been conducted using the newest tools that are accepted by the regulatory agencies.

MDAQMD has adopted regional threshold criteria to determine the significance and appropriate mitigation level for a project's short-term construction and long-term operations GHG emissions. Construction-generated and operational GHG emissions that exceed 100,000 short tons of CO_2e annually or 548,000 pounds of CO_2e daily would be considered to have a potentially significant impact (MDAQMD 2020).

4.8.5 Project-Specific Impacts and Mitigation Measures

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

IMPACT GHG-1: DURING OPERATION, THE PROJECT WOULD GENERATE GREENHOUSE GAS EMISSIONS THAT MAY HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

Construction

Construction of the proposed Project would result in GHG emissions, which are primarily associated with the use of off-road construction equipment, on-road vendor trucks, and worker vehicles. Project construction emissions were calculated and compared to the MDAQMD annual significance threshold. CalEEMod default data and methodologies, along with Project-specific metrics, were used to calculate the annual GHG emissions based on the construction scenario described. Project construction is anticipated to last approximately 18 months. On-site sources of GHG emissions include off-road equipment and off-site sources, including haul trucks, vendor trucks, and worker vehicles. Table 4.8-4 presents total annual construction emissions for the proposed Project from on-site and off-site emission sources.

Table 4.8-4. Estimated Annual Construction Greenhouse Gas Emissions

Construction Years	CO_2	CH_4	N_2O	Total CO_2e
Annual Emissions (metric tons per year)				
2026*	12,155	0.83	1.02	12,481
2027	5,086	0.37	0.42	5,222
MDAQMD annual GHG threshold†				*90,718*†
Threshold exceeded?				***No***

Source: Ramboll 2025a.

Notes:

* Total Annual Emissions for 2026 includes emissions estimates from right-of-way construction (Ramboll 2025b).

† The MDAQMD annual GHG threshold is 100,000 short tons converted to metric tons.

As shown in Table 4.8-4, the estimated total annual GHG emissions during construction would be approximately 12,481 metric tons per year for 2026 and 5,222 metric tons per year for 2027, which is below the MDAQMD threshold. As with Project-generated construction criteria air pollutant emissions, GHG emissions generated during Project construction would occur only when construction is active, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Therefore, construction activities would not generate GHG emissions, either directly or indirectly, that would have an adverse effect on the environment.

Operation

GHG emission-generating activities during Project operation would include direct emissions from off-road trucks, on-road mobile vehicles, and diesel generators, as well as indirect emissions from water and electricity use. To conservatively capture variations in year-to-year operations and present a potential peak year of operation, maximum annual activity data was selected from each activity type, regardless of overlapping years. For example, maximum hauling operations and maximum equipment counts used in the inventory are projected to occur in different years, but are conservatively used together in this inventory development. CalEEMod default data and methodologies, along with Project-specific metrics, were used to calculate the annual GHG emissions based on the operational assumptions.

Maximum annual operations evaluated account for up to 19.2 million tons of ore processed and up to 60.6 million tons of overburden material mined, which include the portions of ore and overburden processing that are currently approved (6.25 million tons annually and 16.3 million tons annually, respectively). Power demands assume up to a 20 MW on-site load plus a 1,314-kilowatt (kW) off-site pump station in Nipton, California. The on-site load is assumed to be met with 10 MW of energy generated on-site using natural gas turbines and 10 MW of grid power provided by Nevada Energy (NV Energy). In addition, 1,314 kW of grid power provided by Southern California Edison (SCE) would be used for an off-site water pump station.

The estimated increase in Project-generated GHG emission as a result of the proposed 2022 Plan (i.e., the change between the proposed 2022 Plan and approved 1998 Plan operations, when using the same emission factors and methodologies) is shown in Table 4.8-5.

Table 4.8-5. Operational Emissions Summary – Increase from 1998 Plan Emissions

Emission Source	Annual CO_2e Emissions (metric tons per year)
2022 Mine Plan	181,068
Approved 1998 Plan	57,080
Net Increase	**123,988**
MDAQMD GHG threshold	*90,718**
Threshold exceeded?	***Yes***

Source: Ramboll 2025a.

Notes:

* The MDAQMD annual GHG threshold is 100,000 short tons converted to metric tons.

As shown in Table 4.8-5, estimated annual Project-generated GHG emissions would be approximately 181,068 MT CO_2e per year as a result of Project operations. After subtracting the total emissions accounted for in the approved 1998 Plan, the total net increase in GHGs generated by the proposed Project would be approximately 123,988 MT CO_2e per year, which would exceed the MDAQMD's significance thresholds. The proposed LNG turbines would be subject to CARB's Cap-and-Invest Program and would purchase allowances as required under the program. The Cap-and-Invest Program is a key element of the State's strategy to achieve GHG reduction goals. In addition, the proposed Project would fuel off-road equipment with renewable diesel (resulting in biogenic emissions), consistent with the CARB 2022 Scoping Plan's emphasis on low-carbon fuels to reduce emissions from mobile sources that are not yet fully electrified.

Although the proposed Project exceeds MDAQMD thresholds, the County's GHGRP Update provides more stringent thresholds and therefore, the screening table is applied. The 2021 GHGRP Update provides GHG performance features that can be used as mitigation measures or incorporated into project designs to reduce a project's GHG emissions. The screening tables assign points for each feature incorporated into a project. Each point value reflects the minimum expected reduction in emissions associated with that feature. Projects that achieve at least 100 points are considered consistent with the reduction targets outlined in the 2021 GHGRP Update. With MM-GHG-1, the proposed Project would be required to implement sufficient reduction measures to achieve 100 points as outlined in the 2021 GHGRP Update. Table 4.8-6 provides features that could be applicable to the proposed Project listed in the screening table for nonresidential projects. As such, because the proposed Project meets the 100-point threshold of the County through incorporation of MM-GHG-1, the significant impact of exceeding MDAQMD threshold is reduced to less than significant; therefore, the proposed Project's GHG emissions would be *less than significant with mitigation*.

Table 4.8-6. Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Point Value
All-Electric Buildings	All electric buildings reduce GHG emissions, as the grid electricity they use is generated using less carbon over time. Grid electricity in California will be 60% renewable energy by 2030 and 100% renewable energy by 2040.	15
Photovoltaic	Solar Photovoltaic panels installed on commercial buildings or in collective arrangements within a commercial development such that the total power provided augments:	
	• 30% of the power needs of the project	8 points
	• 40% of the power needs of the project	12 points
	• 50% of the power needs of the project	16 points
	• 60% of the power needs of the project	19 points
	• 70% of the power needs of the project	23 points
	• 80% of the power needs of the project	26 points
	• 90% of the power needs of the project	30 points
	• 100% of the power needs of the project	34 points
Wind Turbines	Some areas of the County lend themselves to wind turbine applications. Analysis of the areas capability to support wind turbines should be evaluated prior to choosing this feature. Wind turbines as part of the commercial development such that the total power provided augments:	
	• 30% of the power needs of the project	8 points
	• 40% of the power needs of the project	12 points
	• 50% of the power needs of the project	16 points
	• 60% of the power needs of the project	19 points
	• 70% of the power needs of the project	23 points
	• 80% of the power needs of the project	26 points
	• 90% of the power needs of the project	30 points
	• 100% of the power needs of the project	34 points
Off-site Renewable Energy Project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing residential or existing commercial/industrial. These off-site renewable energy retrofit project proposals will be determined on a case-by-case basis accompanied by a detailed plan documenting the quantity of renewable energy the proposal will generate. Point values will be based upon the energy generated by the proposal.	TBD
Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed would be decided based upon engineering data documenting the ability to generate electricity.	TBD
Storm Water Reuse Systems	Innovative on-site storm water collection, filtration, and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD
Commercial Water Operations Program	Establish an operational program to reduce water loss from pools, water features, etc., by covering pools, adjusting fountain operational hours, and using water treatment to reduce draw down and replacement of water. Point values for these types of plans will be determined based upon design and engineering data documenting the water savings.	TBD
Recycled Water	Graywater (purple pipe) irrigation system on site	5 points
Worker and Customer Based Electric Vehicle Chargers	Installation of Electric Vehicle (EV) Chargers for passenger EVs:	
	• Level 2 240 volt AC Fast Chargers	5 points/charger
	• Level 3 480 volt DC Rapid Chargers	8 points/charger

Feature	Description	Point Value
Electric Commercial Truck Chargers	Installation of electric chargers for medium duty and heavy duty trucks:	
	• Level 1 AC Chargers for EV Medium Duty Trucks	3 points/charger
	• Level 1 AC Chargers for EV Class 8 (Heavy Duty) Trucks	5 points/charger
	• Level 2 AC Chargers for EV Medium Duty Trucks	8 points/charger
	• Level 2 AC Chargers for EV Class 8 (Heavy Duty) Trucks	12 points/charger
	• Level 3 DC Fast Chargers for EV Class 8 (Heavy Duty) Trucks	16 points/charger
Recycling	County initiated recycling program diverting 80% of waste requires coordination with commercial development to realize this goal. The following recycling features will help the County fulfill this goal:	
	• Provide separated recycling bins within each commercial building/floor and provide large external recycling collection bins at central location for collection truck pick-up	2 points
	• Provide commercial/industrial recycling programs that fulfills an onsite goal of 80% diversion of solid waste	5 points
	• Recycle construction waste	4 points
Other GHG Emissions Reduction Features	This allows innovation by the applicant to provide commercial design features that the GHG emissions from construction and/or operation of the project not provided in the table. Note that engineering data will be required documenting the GHG reduction amount and point values given based upon emission reductions calculations using approved models, methods, and protocols.	TBD

Source: County of San Bernardino (2021)

Impact GHG-1	
During operation, the Project would generate greenhouse gas emissions that may have a significant impact on the environment.	
Mitigation Measures	
MM-GHG-1.1	*Before a building permit is issued, the Project Applicant must submit documentation to the San Bernardino County Land Use Services Department (Planning Division) demonstrating that design measures achieving at least 100 points, as outlined in Castle Mountain Mine Phase II Expansion Project Environmental Impact Report Table 4.8-6, have been incorporated into the Project design. These measures must be selected from Table 2, Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities, as specified in the San Bernardino County Regional Greenhouse Gas Reduction Plan Update (adopted September 2021).*
Impacts Following Mitigation	
Implementation of Mitigation Measure MM-GHG-1.1 would ensure that GHG emissions from operation of the proposed Project would not have a significant impact on the environment. Impact GHG-1 would be less than significant with mitigation.	

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

IMPACT GHG-2: THE PROJECT WOULD NOT CONFLICT WITH AN APPLICABLE PLAN, POLICY, OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSIONS OF GREENHOUSE GASES. (*LESS THAN SIGNIFICANT*)

Relevant plans and policies to reduce GHG emissions include the 2021 GHGRP Update, the Connect SoCal 2024 RTP/SCS, and the CARB 2022 Scoping Plan. The evaluation of the proposed Project's consistency with these plans for reducing GHG emissions considers the proposed Project holistically. This approach is consistent with these plans and policies, which also consider projects holistically (i.e., the plans and policies generally do not segregate impacts by construction and operation).

San Bernardino County Greenhouse Gas Reduction Plan Update

In 2011, the County released its first GHGRP to implement strategies to reduce GHG emissions. The 2011 plan targeted a 15% reduction of GHG emissions from 2007 levels to a 2020 target date. Following the 2011 GHGRP, the State published additional climate regulations, including SB 32 in 2016, which targets reducing emissions by 40% from 1990 levels to a 2030 target date. In 2021, the County released an update to its GHGRP to continue to ensure conformity with the State's climate regulations, including SB 32. The 2021 GHGRP Update includes plans and strategies to continue reducing GHG emissions to reach the 2030 target and predicts the outlined reductions will put the County on the trajectory to reach carbon neutrality by 2045. The 2021 GHGRP Update focuses on reducing GHG emissions in several primary source categories: building energy consumption, renewable energy, mobile traffic, off-road equipment, solid waste generation, and water consumption. Notably, neither the 2011 GHGRP nor the 2021 GHGRP Update contains specific measures or requirements for mining projects to reduce GHG emissions. However, the 2021 GHGRP Update does include GHG performance standards for commercial and industrial projects. These standards consist of GHG emission reduction measures to be implemented during construction and operation, such as waste stream reductions, vehicle trip reductions, and incorporating energy-efficient design elements consistent with Title 24 (County of San Bernardino 2021). The proposed Project would be required to comply with these performance standards via Conditions of Approval that the County will implement for the proposed Project, if it is approved. As such, the proposed Project would not conflict with the 2021 GHGRP Update.

Connect SoCal 2024 RTP/SCS

The Connect SoCal 2024 RTP/SCS is supported by a combination of transportation and land use strategies that outline how the region can achieve California's GHG emission reduction goals and federal CAA requirements (SCAG 2024). According to the *Castle Mountain Mine Trip Generation Assessment*, the Project would result in negligible impact to regional vehicle miles traveled and, therefore, would not be anticipated to conflict with the RTP/SCS (Urban Crossroads 2025; EIR Appendix 9). In addition, the proposed Project would not conflict with plans to integrate the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, or transportation demands. The proposed Project would be consistent with or otherwise would not conflict with any of the goals identified in the Connect SoCal 2024 RTP/SCS. As a result, the proposed Project would not conflict with the Connect SoCal 2024 RTP/SCS.

CARB 2022 Climate Change Scoping Plan

The CARB 2022 Scoping Plan establishes strategies for industrial projects to reduce GHG emissions through increased electrification, improved energy efficiency, deployment of low-carbon fuels, and a managed transition away from high-emission fossil fuel sources while maintaining reliability for industrial operations. The proposed Project would be consistent with this framework by transitioning from exclusive reliance on on-site diesel generation to grid-supplied electricity via a new 69-kilovolt transmission line, thereby enabling increased use of California's progressively decarbonizing electric grid. Consistent with the CARB 2022 Scoping Plan's recognition of transitional strategies for hard-to-electrify and remote industrial facilities, the proposed Project would utilize high-efficiency natural gas-fired turbines for supplemental and backup power, which would displace higher-emission diesel generators and reduce GHG emissions per unit of energy generated. In addition, the proposed Project would fuel off-road equipment with renewable diesel, consistent with the CARB 2022 Scoping Plan's emphasis on low-carbon fuels to reduce emissions from mobile sources that are not yet fully electrified. Through electrification where feasible, displacement of higher-emission fuels, and incorporation of low-carbon alternatives, the proposed Project supports the CARB 2022 Scoping Plan's objectives for emissions reduction, energy system reliability, and an orderly transition toward carbon neutrality and therefore would not conflict with or obstruct implementation of the CARB 2022 Scoping Plan.

Conclusion

As discussed above, the proposed Project would not conflict with the 2021 GHGRP Update or the Connect SoCal 2024 RTP/SCS. As such, the proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact GHG-2
The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.
Mitigation Measures
Mitigation is not necessary. Impact GHG-2 would be less than significant.

4.8.6 Cumulative Impacts

IMPACT GHG-3: THE PROJECT WOULD NOT CONTRIBUTE SIGNIFICANTLY TO CUMULATIVE IMPACTS ASSOCIATED WITH GHG EMISSIONS. (*LESS THAN SIGNIFICANT*)

The geographic scope considered in the cumulative impact analysis for GHG emissions is global. Adverse environmental impacts of cumulative GHG emissions, including sea level rise, increased average temperatures, more drought years, and more large forest fires, are already occurring. As a result, cumulative impacts related to GHG emissions are significant.

The analysis of a project's GHG emissions is inherently a cumulative impact analysis because impacts of climate change are experienced on a global scale, regardless of the location of GHG emission sources. The GHG emissions from an individual development project are not typically going to have a noticeable

impact on the global climate, but individual projects contribute to the significant cumulative problem of global warming and climate change. As the California Supreme Court has indicated, "an individual project's emissions will most likely not have any appreciable impact on the global problem by themselves, but they will contribute to the significant cumulative impact caused by GHG emissions from other sources around the globe. The question, therefore, becomes whether the proposed Project's incremental addition of GHGs is 'cumulatively considerable' in light of the global problem" (*Cleveland National Forest Foundation v. San Diego Association of Governments* 2017).

Consistent with the inherent consideration of GHG emissions as a cumulative contribution to global environmental conditions, the analysis presented above in Section 4.8.5, *Project-Specific Impacts and Mitigation Measures*, considers the potential for the proposed Project to contribute considerably to the cumulative impact of global climate change. This analysis demonstrates that the proposed Project would be consistent with regional plans related to mobility and GHG reductions. Further, with Mitigation Measure MM-GHG-1, the proposed Project would be required to implement sufficient reduction measures to achieve 100 points as outlined in the 2021 GHGRP Update. Thus, the proposed Project would not contribute significantly to cumulative impacts associated with GHG emissions and global climate change, and impacts would be *less than significant* and would not be cumulatively considerable.

Impact GHG-3 (Cumulative Impacts)
The Project would not contribute significantly to cumulative impacts associated with GHG emissions.
Mitigation Measures
Mitigation is not necessary. Impact GHG-3 would be less than significant.

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4.9 HAZARDS AND HAZARDOUS MATERIALS

This section of the EIR analyzes potential impacts related to hazards and hazardous materials resulting from the implementation of the proposed Project in accordance with Appendix G of the State CEQA Guidelines, including impacts associated with the routine transport, use, storage, and disposal of hazardous materials; accidental release scenarios; wildfire-related hazards; airport safety; emergency response constraints; and cumulative conditions. The analysis is based on a review of existing resources, technical data, and applicable laws, regulations, and guidelines, as well as technical reports prepared for the proposed Project.

4.9.1 Existing Conditions

4.9.1.1 Current and Historic Uses

The Project Area comprises approximately 4,285 acres of the Mojave Desert, including 252 acres of private vested lands historically mined prior to modern regulatory ordinances and the Surface Mining and Reclamation Act of 1975 (SMARA). The proposed utilities of the proposed Project would occur largely within existing rights-of-way (ROWs) in San Bernardino County, California and the BLM California Needles Field Office (NFO). Located within the historic Hart Mining District, the Project Area has supported continuous mining activity since the early twentieth century.

Based on a review of the California Department of Toxic Substances Control (DTSC) EnviroStor database, no hazardous waste facilities or sites fall within the Project Area (DTSC 2026). In the Project vicinity, Molycorp Inc. (15 miles from the California/Nevada border) is listed on the DTSC EnviroStor database as a historical site. This facility is approximately 9.5 miles west of the Project Area. The EnviroStor database recorded this site as having a Resource Conservation and Recovery Act (RCRA)/Hazardous Waste Management Program (HWMP) cleanup status as of August 22, 1995.

However, Castle Mountain Venture (115575 Hart Mine Road) is listed on the State Water Resources Control Board (State Water Board) GeoTracker database as a land disposal site (State Water Board 2026). This Title 27 Mining Unit is in the southern portion of the Project Area along Hart Mine Road. The GeoTracker database recorded this facility as having an Open–Operating cleanup status as of July 22, 2020. According to the cleanup status history, a previous case was assigned "Completed – Case Closed" status on June 28, 2005, and another case from January 1, 2019, has a status of "Open – Closed/with Monitoring." The State Water Board GeoTracker database also identified a Leaking Underground Storage Tank (LUST) site listed as the Cal Neva Border Gas Station located in Nipton, California, that overlaps with the northern portion of the Project Area (State Water Board 2026). However, cleanup was completed, and the site is listed as "Completed – Case Closed."

4.9.1.2 Schools

There are no schools located within or adjacent to (less than 1 mile) the Project Area. The closest school to the Project Area is Reid Elementary School, approximately 17 miles northeast of the Project Area.

Additionally, there are no other sensitive receptors, such as playgrounds, childcare centers, or similar uses, within the vicinity of the Project Area.

4.9.1.3 Airports

The closest airport to the Project Area is Kidwell Airport, approximately 14 miles to the east. Additionally, Conner Airport is approximately 15 miles southwest, and the Searchlight Airport is approximately 15 miles northeast of the Project Area. The Project Area is not within the Airport Influence Area of any of these airports and is not included in an Airport Land Use Compatibility Plan.

4.9.1.4 Wildland Fires

A wildfire, also known as a wildland fire, is an uncontrolled fire that burns in areas with combustible vegetation, typically found in rural or countryside settings. The specific classification of a wildfire, such as a brush fire, bush fire, desert fire, forest fire, grass fire, hill fire, peat fire, or vegetation fire, depends on the type of vegetation present in the affected area.

The California Department of Forestry and Fire Protection (CAL FIRE) defines a Fire Hazard Severity Zone (FHSZ) as a mapped region that categorizes fire hazard levels based on factors like fuel type, terrain slope, and fire weather conditions. These zones are classified as moderate, high, or very high hazard areas. Although FHSZs do not forecast the exact timing or location of future wildfires, they highlight regions where wildfire risks are elevated and warrant increased attention. The FHSZ maps assess wildfire hazards by evaluating physical conditions that could lead to burning over a 30- to 50-year timeframe, but they do not consider interventions such as fuel reduction measures.

According to the CAL FIRE FHSZ Map, the Project Area is partially located in a Federal Responsibility Area (FRA) and a Moderate FHSZ within a Local Responsibility Area (LRA) (CAL FIRE 2025). Small portions of the Project Area along the western boundary in Nipton and the southern boundary in Hart are classified as LRA Moderate, which is the lowest fire hazard designation. All other surrounding areas of the Project Area are within an FRA. The Hazards Element of the County Policy Plan also includes a map of FHSZs for the county, which delineates the Project Area and nearly all of the Desert Region of San Bernardino County as being located within a Moderate FHSZ, similar to CAL FIRE (County of San Bernardino 2020). A small portion of the southern boundary of the Project Area is classified as Non-Wildland/Non-Urban in the County Policy Plan FHSZ map. The closest State Responsibility Area (SRA) Very High FHSZs are in the southwestern portion of San Bernardino County, very far from the Project Area. Finally, the Project Area is not within the County's Fire Safety Overlay District (County of San Bernardino 2017). The closest Fire Safety Overlay District is approximately 100 miles southwest of the Project Area. Refer to Section 4.16, *Wildfire*, for additional information.

4.9.1.5 Hazardous Materials and Waste

Hazardous materials, as outlined in California Health and Safety Code (HSC) Sections 25501(n) and (o), are substances with physical characteristics that may present a significant current or future risk to human health or the environment if improperly managed, stored, or disposed of. Hazardous materials are classified into four main categories based on their properties:

1. **Toxic:** Causes human health effects.
2. **Ignitable:** Has the ability to burn.
3. **Corrosive:** Causes severe burns or damage to materials.
4. **Reactive:** Causes explosions or generates toxic gases.

Hazardous waste refers to hazardous materials that have been discarded, have been abandoned, or are intended for recycling. If not handled correctly, both hazardous materials and hazardous waste can pose

risks to public health, especially if they are released into the environment through soil, groundwater, or air (as vapors, fumes, or dust). Soil or groundwater that contains hazardous substances above regulatory limits must be managed and disposed of as hazardous waste if it is excavated or extracted. The technical criteria for classifying soil or groundwater as hazardous waste are detailed in 22 California Code of Regulations (CCR) Section 66261.20 and subsequent sections.

The use or presence of hazardous materials inherently poses a potential risk to public health. It is important to distinguish between the hazard itself—the potential to cause harm—and the level of risk, which depends on both the likelihood of exposure and the material's toxicity. Risk to health and safety is determined by the probability of exposure and the inherent toxicity of the substance.

Several factors influence the health effects of hazardous materials' exposure, including the dose to which a person is exposed, the frequency of exposure, duration of exposure, the route of exposure (how the substance enters the body), and an individual's biological susceptibility.

Hazardous wastes are hazardous substances that are no longer usable, such as those that have been discarded, spilled, or contaminated, or are awaiting proper disposal. Excavated soil from sites with hazardous materials is considered hazardous waste if it exceeds CCR Title 22 thresholds. Various regulatory agencies maintain lists of hazardous waste and substances, which are referenced in planning documents required for CEQA compliance to inform about the location of hazardous materials sites. While hazardous substances fall under the oversight of multiple agencies (as discussed further in Section 4.9.2, *Regulatory Setting*), the requirements for cleanup and disposal of hazardous wastes are determined on a case-by-case basis by the agency with primary jurisdiction over the project.

A range of hazardous materials are stored and managed on-site, including sodium cyanide (solid briquettes stored in steel tanks with secondary containment), pebble lime, cement, caustic soda, hydrochloric acid, fuels, oils, and explosives. Hazardous and solid waste management follows a comprehensive set of plans, including the Solid and Hazardous Waste Management Plan, Fire Management Plan, Health and Safety Plan, Spill Contingency Plan, Hazardous Materials Business Plan (HMBP), and Risk Management Plan. Used oil, batteries, and other recyclables are sent to authorized facilities, whereas hazardous wastes are managed on-site and shipped off-site by licensed contractors.

4.9.1.6 Transportation of Hazardous Materials

The nearest highways to the Project Area are Interstate (I-) 15, approximately 9.85 miles west of the Project Area, and U.S. Highway (U.S.) 95, approximately 17 miles southeast of the Project Area.

Hazardous materials transported through San Bernardino County are predominantly carried by truck on the interstate highway system and, to a lesser degree, via rail. The transport of hazardous materials associated with the proposed Project would occur in compliance with applicable federal and State transportation regulations and would utilize designated hazardous materials routes. While accidental releases are possible, such events are considered unlikely and would be subject to emergency response requirements under the California Department of Transportation (DOT), California Highway Patrol (CHP), and County protocols. Registered hazardous waste haulers may use specific routes in the county to transport hazardous materials. Both the County and the CHP designate through routes to be used for the transportation of hazardous materials. I-15 and U.S. 95 are designated truck routes and can be used for the transportation of hazardous materials (Caltrans 2021; CHP 2018).

4.9.2 Regulatory Setting

4.9.2.1 Federal

EMERGENCY PLANNING COMMUNITY RIGHT-TO-KNOW ACT OF 1986

The Emergency Planning and Community Right-to-Know Act (EPCRA), enacted in 1986, mandates that state and local authorities develop plans to address emergencies involving the possible release of hazardous chemicals. Information regarding any documented chemical release at a specific location must be publicly accessible, ensuring that community members and other stakeholders are aware of potentially hazardous substances in their area. The U.S. Environmental Protection Agency's (USEPA) Office of Emergency Management oversees the implementation of EPCRA Sections 301 through 312.

HAZARDOUS MATERIALS TRANSPORTATION ACT OF 1975

Under the Hazardous Materials Transportation Act (49 Code of Federal Regulations [CFR] Parts 100–185), enacted in 1975, the U.S. Department of Transportation (DOT) oversees the regulation of hazardous materials transportation. Enforcement of both federal and state regulations, as well as emergency response related to hazardous materials transport, is primarily managed by the CHP and California Department of Transportation (Caltrans). These agencies are also tasked with issuing the required permits for transporting hazardous materials.

RESOURCE CONSERVATION AND RECOVERY ACT OF 1976 (AS AMENDED BY THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984)

The RCRA, enacted in 1976, establishes federal regulations for hazardous waste management, employing a "cradle-to-grave" system that governs hazardous waste from its generation through recycling, reuse, or disposal. Entities that produce hazardous waste are required by RCRA to identify and monitor these materials throughout their lifecycle. In California, the DTSC administers the RCRA program alongside additional state hazardous waste regulations, collectively referred to as the Hazardous Waste Control Law.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), often referred to as "Superfund," was enacted by Congress on December 11, 1980 (42 United States Code 103). CERCLA grants the federal government extensive authority to address actual or potential releases of hazardous substances that could pose risks to public health or the environment. CERCLA sets forth requirements for managing closed and abandoned hazardous waste sites, assigns liability to parties responsible for hazardous waste releases, and creates a trust fund to support cleanup efforts when no responsible party is identified. CERCLA also authorized updates to the National Contingency Plan (NCP), found in 40 CFR Part 300, which outlines the procedures for responding to releases or threatened releases of hazardous substances, pollutants, or contaminants, and established the National Priorities List.

MINE SAFETY AND HEALTH ACT OF 1977 – PUBLIC LAW 91-173 (AS AMENDED BY PUBLIC LAW 95-164)

The Mine Safety and Health Act of 1977 is a federal law in the United States that governs the health and safety of miners working in the nation's mines. The act established the Mine Safety and Health

Administration within the U.S. Department of Labor to enforce mine safety and health standards. The primary goal of the act is to ensure safe and healthful working conditions for miners by preventing mining accidents, injuries, and illnesses; promoting safe workplaces through standards, inspections, and enforcement; and providing miners with rights and protections.

NATIONAL FIRE PROTECTION ASSOCIATION

The National Fire Protection Association (NFPA) develops and disseminates codes, standards, research, training, and educational resources focused on fire safety. With over 300 published codes and standards, the NFPA aims to reduce the likelihood and impact of fires and other hazards. These standards are recognized as recommended practices and widely accepted guidelines for fire protection across the nation. In California, specific NFPA codes are commonly adopted through the California Fire Code (CFC) or implemented locally by counties and cities.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

The Occupational Safety and Health Administration (OSHA) is dedicated to protecting the safety and health of American workers by establishing and enforcing standards, and by offering training, outreach, and education. OSHA develops and enforces regulations to safeguard employees and provides employers and workers with technical support and consultation services. OSHA's standards, found in 29 CFR 1910, include requirements for preparing Health and Safety Plans (HASPs), which identify potential hazards related to proposed land uses and may recommend mitigation measures as needed. Under 29 CFR Section 1910.120(e), all on-site employees exposed to hazardous substances or conditions, as well as their supervisors and site managers, must receive appropriate training before participating in hazardous waste operations that could expose them to health or safety risks.

OIL POLLUTION PREVENTION – 40 CFR 112 ET SEQ.

Oil Pollution Prevention regulations (40 CFR Part 112) are part of the Clean Water Act (CWA) and are administered by the USEPA. The primary purpose of 40 CFR Part 112 is to prevent oil discharges into navigable waters of the United States or adjoining shorelines. The regulations require facilities that store, use, or handle significant quantities of oil to develop and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans. These plans outline the practices, procedures, and equipment that will be used to prevent oil spills and to contain and control spills should they occur. The overall goal of 40 CFR 112 is to minimize the potential for oil spills and to ensure a prompt and effective response to prevent pollution of water resources.

SAFE EXPLOSIVES ACT OF 2003

Enacted in March 2003, the Safe Explosives Act mandates background checks for anyone who handles, uses, or has access to explosive materials. Additionally, the act requires individuals who work with explosives to obtain a federal blasting license from the Bureau of Alcohol, Tobacco, and Firearms (ATF).

DEPARTMENT OF TRANSPORTATION – CFR TITLE 49

The DOT, under CFR Title 49, oversees the transportation of hazardous materials, including explosives. Regulations require companies involved in transporting hazardous materials to hold a valid DOT Hazardous Materials (HAZMAT) Certification Registration and to participate in an ongoing drug screening program. DOT also enforces strict standards for vehicles and containers used in the shipment of hazardous materials.

4.9.2.2 State

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Established in 1991, the California Environmental Protection Agency (CalEPA) consists of the California Air Resources Board (CARB), the California Department of Pesticide Regulation (DPR), the California Department of Resources Recycling and Recovery (CalRecycle), DTSC, the California Office of Environmental Health Hazard Assessment (OEHHA), and the State Water Board. CalEPA and the State Water Board develop regulations governing the use of hazardous materials and the management of hazardous waste. Applicable State and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Porter-Cologne Water Quality Control Act

Additionally, in accordance with California Government Code Section 65962.5, CalEPA prepares an annual update to the Hazardous Waste and Substances Sites (Cortese) List. The DTSC is responsible for maintaining specific portions of the data included in the Cortese List, while additional information regarding hazardous materials releases is provided by other state and local agencies.

ENVIRONMENTAL HEALTH STANDARDS FOR THE MANAGEMENT OF HAZARDOUS WASTE

Regulations in place for the management of hazardous waste, implemented by and affecting the DTSC, are codified in 22 CCR Division 4.5. DTSC, a department of CalEPA, is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and aims to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of the RCRA and HSC.

While California generally acknowledges federal hazardous waste exclusions, the State regulates any federally excluded wastes that demonstrate hazardous characteristics as defined by State criteria. Consequently, hazardous wastes excluded under federal regulations are subject to regulation in California if State hazardous waste definitions are met. The following wastes are excluded from classification as hazardous wastes under federal hazardous waste regulations, but are regulated as a hazardous waste in California if the waste exhibits a California hazardous waste characteristic or listed in Article 4.1:

- Household wastes
- Agricultural wastes used as fertilizers
- Mining overburden
- Fossil fuel combustion wastes
- Trivalent chromium wastes (leather tanning)
- Mining wastes
- Cement kiln dust
- Arsenic treated wood

- Used chlorofluorocarbon refrigerants
- Used oil filters
- Landfill leachate or gas condensate
- Petroleum-contaminated media and debris
- Re-injected groundwater from refinery cleanups

A material is classified as hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in CCR Title 22 as follows:

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed. (22 CCR Section 66261.10)

Several regulations pertaining to the management of hazardous materials are identified in CCR Title 22, and the following may be applicable to construction and/or operation of the proposed Project:

- 22 CCR 66261.20 classifies hazardous waste as a substance that is ignitable, corrosive, reactive, or toxic.
- 22 CCR 66262.11 provides a method of determination for hazardous materials to ensure generators properly handle, store, transport, and/or dispose of hazardous materials accordingly.
- 22 CCR 66262.30–66262.35 requires proper packaging, labeling, marking, placarding, and accumulation timing of hazardous materials that are to be transported.
- 22 CCR 66262.70 states that waste pesticide, including pesticide containers or inner liners from pesticide containers, that meets the definition of hazardous waste, generated as part of a commercial farming operation, is not required to be managed in compliance with the standards in this chapter.
- 22 CCR 66263.30–66262.32 requires that in the event of a discharge of hazardous waste during transportation, the transporter shall take immediate action to protect human and environmental health, clean up spilled hazardous waste discharge, and properly report the incident.
- 22 CCR 66268 identifies land disposal restrictions for hazardous wastes, treatment standards for wastes, prohibitions on storage and land disposals, and potential incineration requirements.

CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Health and Safety Plans – CCR Title 8, Subchapter 2

Under California Division of Occupational Safety and Health Administration (Cal/OSHA) Regulations, employers must disclose potential workplace hazards and develop site-specific HASPs for workers and the workplace. In addition, workers that may potentially be exposed to hazardous materials in their workplace must be notified of exposure so that they are aware of workplace hazards.

Mine Safety Orders – CCR Title 8, Subchapter 17, Sections 6950–7283

The Cal/OSHA Mine Safety Orders were designed to promote safety at mines and are promulgated as standards for the guidance of employers and employees. The Mine Safety Orders apply to operations including the following:

- Prospecting, exploration, development, extraction of minerals, and other operations in connection therewith
- Placer and hydraulic mining
- Transportation of men, materials and equipment in areas and operations covered by these orders
- Operations and maintenance of the equipment applicable to the foregoing

The Mine Safety Orders supersede all previous Mine Safety Orders published in the California Administrative Code, Title 8, Chapter 4, Subchapter 12, and the Quarry and Open Pit Mine Safety Orders, Chapter 4, Subchapter 17.

Cal/OSHA General Industry Safety Order Explosives and Pyrotechnics – CCR Title 8, Subchapter 7, Sections 5236–5374

The Cal/OSHA regulations regarding the safe management, handling, storage, and transportation of explosive materials include:

- Article 113: Explosives and Pyrotechnics – Competency and Qualification of Blasters
- Article 115: Transportation of Explosives
- Article 116: Handling and Use of Explosives – Blasting Operations

HAZARDOUS WASTE CONTROL LAW

HSC Division 20, Chapter 6.5 codifies the Hazardous Waste Control Law, which requires hazardous waste generators to use appropriate technologies and management practices to ensure the safe handling, treatment, recycling, and destruction of hazardous wastes prior to disposal. The statute also establishes the Hazardous Waste Management Council, tasked with recommending a system to address financial liability for individuals impacted by hazardous waste treatment or disposal within their communities. The primary objective of this legislation is to confer the necessary authority for California to secure and maintain interim and final authorization for the state hazardous waste program, in accordance with Section 3006 of Public Law 94-580, RCRA (42 United States Code 6926), and to implement the program in lieu of the federal counterpart. The Hazardous Waste Control Law authorizes the DTSC to administer the State hazardous waste program and to implement the federal program within California.

SURFACE MINING AND RECLAMATION ACT OF 1975

SMARA (California Public Resources Code [PRC] Chapter 9, Sections 2710–2796) establishes a comprehensive regulatory framework for surface mining operations and reclamation activities, aimed at minimizing adverse environmental and safety impacts and ensuring that disturbed lands are restored to a usable condition. SMARA mandates the preparation, submittal, and approval of a Reclamation Plan that demonstrates compliance with statutory requirements. Key components of the Reclamation Plan include quarry design and slope stability. The Reclamation Plan is subject to review by the California Division of Mine Reclamation (DMR) and requires approval from the County.

CALIFORNIA EMERGENCY SERVICES ACT OF 1970

California Government Code Sections 8550–8692 establish the assignment of responsibilities to various agencies during emergencies to ensure optimal utilization of personnel, resources, and facilities for effective emergency response. The State recognizes the importance of coordinating all emergency services to mitigate the impacts of natural, anthropogenic, or war-related incidents that create conditions of disaster or extreme peril to life, property, and state resources. The provisions are intended to protect public health and safety and to safeguard the lives and property of the people of California.

CERTIFIED UNIFIED PROGRAM AGENCY

The Hazardous Materials Section of the San Bernardino County Fire Protection District is designated by the State Secretary for Environmental Protection as the Certified Unified Program Agency (CUPA) for the County to focus the management of specific environmental programs at the local government level. San Bernardino County Fire Department (SBCoFD), as the CUPA for the proposed Project, oversees six hazardous materials and hazardous waste regulatory programs. The CUPA program is structured to consolidate, coordinate, and uniformly administer permitting, inspection, and enforcement activities across San Bernardino County, thereby minimizing redundant or conflicting requirements that may arise from separate agency oversight. The CUPA is responsible for conducting compliance inspections at more than 8,000 regulated facilities within the county. The six hazardous material and hazardous waste regulatory programs overseen by the SBCoFD are summarized below.

- **Aboveground Petroleum Storage Act (APSA):** The purpose of the APSA program is to protect public health and the environment from potential contamination or adverse effects associated with unintentional releases from the aboveground storage of petroleum-based hazardous materials and wastes. APSA facilities must prepare and implement an SPCC Plan in accordance with the oil pollution prevention guidelines in 40 CFR 112.
- **California Accidental Release Program (CalARP):** The CalARP program replaced the California Risk Management and Prevention Program (RMPP) after the USEPA instituted the Accidental Release Prevention Program within the Clean Air Act 112(r) and serves to reduce the risks associated with regulated substances through the evaluation of hazards and consequences as well as the development of Risk Management Plans (RMPs) and Prevention Programs. Facilities subject to CalARP must take specified actions to proactively prevent and prepare for chemical accidents, including developing an RMP.
- **California Fire Code – Hazardous Materials Management Plan (HMMP) and Hazardous Material Inventory Statements (HMIS):** The CFC, updated on a triennial basis, is included in 24 CCR Chapter 9 and was created by the California Building Standards Commission. Based on the International Fire Code, the CFC provides the principal regulatory framework for authorizing and enforcing procedures and methodologies to ensure the safe handling and storage of hazardous substances that may present risks to public health and safety within the state. The CFC establishes requirements governing the use, handling, and storage of hazardous materials at designated facilities. Both the CFC and the California Building Code (CBC) use a classification system to determine appropriate fire protection and public safety measures, which may include the specification of construction standards, required setbacks from property boundaries, and the installation of specialized equipment.
- **Hazardous Materials Business Plan (HMBP):** The HMBP program, established in 1986, provides information regarding hazardous materials at facilities to emergency responders and to the general public. Businesses that handle hazardous materials (including hazardous waste) or extremely hazardous substances are required to submit an HMBP via the California Environmental Reporting System (CERS), if using, handling, or storing hazardous materials in

quantities exceeding designated thresholds. Any business subject to any of the CUPA permits in San Bernardino County is required to file an HMBP via CERS, as the submission is used as the basis for the permit application.

- **Hazardous Waste and Onsite Treatment:** The Hazardous Waste Program was established to ensure the proper management of hazardous waste for any facility that generates any amount of hazardous waste. Hazardous waste is defined as a hazardous material that is no longer in use, as defined in 22 CCR Division 4.5, Chapter 11.

4.9.2.3 Local

SAN BERNARDINO COUNTYWIDE PLAN

The CWP (County of San Bernardino 2024a) encompasses the long-term goals and policies that guide County decisions, investments, and improvements toward achieving the Countywide Vision. It serves as the County's General Plan for unincorporated areas and includes policy direction for regional services the County administers in both incorporated and unincorporated areas. Relevant goals and policies from the Hazards and Personal and Property Protection Elements of the County Policy Plan are summarized in Table 4.9-1 (County of San Bernardino 2024b).

Table 4.9-1. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal/Policy No.	Goal/Policy Description
Hazards Element	
Goal HZ-1	**Natural Environmental Hazards.** Minimized risk of injury, loss of life, property damage, and economic and social disruption caused by natural environmental hazards and adaptation to potential changes in climate.
Policy HZ-1.2	**New development in environmental hazard areas.** The County requires all new development to be located outside of the environmental hazard areas listed below. For any lot or parcel that does not have sufficient buildable area outside of such hazard areas, the County requires adequate mitigation, including designs that allow occupants to shelter in place and to have sufficient time to evacuate during times of extreme weather and natural disasters. • Flood: 100-year flood zone, dam/basin inundation area • Geologic: Alquist Priolo earthquake fault zone; County-identified fault zone; rockfall/debris-flow hazard area, medium or high liquefaction area (low to high and localized), existing and County-identified landslide area, moderate to high landslide susceptibility area) • Fire: high or very high fire hazard severity zone
Policy HZ-1.8	**Wind erosion hazards.** The County requires new development in medium-high or high wind erosion hazard areas to minimize the effects of wind-blown soil through building and site design features such as fencing, surface treatment or pavement, attenuation or wind barriers, architectural features, building materials, and drought resistant landscaping.
Policy HZ-1.9	**Hazard areas maintained as open space.** The County minimizes risk associated with flood, geologic, and fire hazard zones or areas by encouraging such areas to be preserved and maintained as open space.
Policy HZ-1.12	**Local hazard mitigation plan implementation.** The County requires adherence to the goals, objectives and actions in the Multi-jurisdictional Hazard Mitigation Plan and subsequent amendments to reduce and mitigate damages from hazards in the county.
Policy HZ-1.13	**Fire protection planning.** The County requires all new development in County-designated Fire Safety Overlay and/or CAL FIRE-designated Very High Fire Hazard Severity Zones meet the requirements of the California Fire Code and the California Building Code as amended by the County Fire Protection District, including Title 14 of the California Code of Regulations fire safety requirements for any new development within State Responsibility Areas, as well as provide and maintain a Fire Protection Plan or Defensible Space/Fuel Modification Plan and other pre-planning measures in accordance with the County Code of Ordinances.

Goal/Policy No.	Goal/Policy Description
Policy HZ-1.14	**Long-term fire hazard reduction and abatement.** The County requires proactive vegetation management/hazard abatement to reduce fire hazards on existing private properties, along roadsides of evacuation routes out of wildfire prone areas, and other private/public land where applicable, and we require new development to enter into a long-term maintenance agreement for vegetation management in defensible space, fuel modification, and roadside fuel reduction in the Fire Safety Overlay and/or Very High Fire Hazard Severity Zones.
Policy HZ-1.15	**Evacuation route adequacy.** The County coordinates with CAL FIRE, California's Office of Emergency Services, and other local fire districts to identify strategies that ensure the maintenance and reliability of evacuation routes potentially compromised by wildfire, including emergency evacuation and supply transportation routes.
Goal HZ-2	**Human-Generated Hazards.** People and the natural environment protected from exposure to hazardous materials, excessive noise, and other human-generated hazards.
Policy HZ-2.1	**Hazardous waste facilities.** The County regulates and buffers hazardous waste facilities to protect public health and avoid impacts on the natural environment.
Policy HZ-2.2	**Database of hazardous materials.** The County maintains up-to-date databases of the storage, use, and production of hazardous materials, based on federally- and state-required disclosure and notification, to appropriately respond to potential emergencies.
Policy HZ-2.3	**Safer alternatives.** The County minimizes the use of hazardous materials by choosing and by encouraging others to use non-toxic alternatives that do not pose a threat to the environment.
Policy HZ-2.4	**Truck routes for hazardous materials.** The County designates truck routes for the transportation of hazardous materials through unincorporated areas and prohibit routes that pass through residential neighborhoods to the maximum extent feasible.
Policy HZ-2.11	**Legacy abandoned mine lands.** The County inventories legacy abandoned mines and require private property owners to eliminate hazardous conditions that could threaten human life and environmental contamination. The County pursues funding to address legacy abandoned mines on County-owned property.
Personal and Property Protection Element	
Goal PP-3	**Fire and Emergency Medical.** Reduced risk of death, injury, property damage, and economic loss due to fires and other natural disasters, accidents, and medical incidents through prompt and capable emergency response.
Policy PP-3.1	**Fire and emergency medical services.** The County maintains a sufficient number and distribution of fire stations, up-to-date equipment, and fully-trained staff to respond effectively to emergencies.
Policy PP-3.4	**Fire prevention services.** The County proactively mitigates or reduces the negative effects of fire, hazardous materials release, and structural collapse by implementing the California Fire Code, adopted with County amendments.
Policy PP-3.9	**Street and premise signage.** The County requires adequate street signage and premise identification be provided and maintained to ensure emergency services can quickly and efficiently respond.

SAN BERNARDINO COUNTY FIRE DEPARTMENT

As discussed, the State has delegated the following regulations to SBCoFD, as the local CUPA:

- APSA Program (HSC Section 25404 et seq.);
- CalARP Program (19 CCR Sections 2735 et seq.);
- CFC (27 CCR Sections 15100 et seq.);
- HMMP and HMIS (19 CCR Sections 2620 et seq.)
- Hazardous Waste and Onsite Treatment Programs (CCR Title 22; HSC Sections 25100 et seq.);

SAN BERNARDINO COUNTY FIRE PROTECTION DISTRICT

The Hazardous Materials Division of the SBCoFD serves as the CUPA for the County. As the CUPA, SBCoFD is responsible for issuing permits and conducting inspections for businesses that use, store, or handle significant quantities of hazardous materials and/or hazardous waste. The CUPA oversees compliance inspections for more than 7,000 regulated facilities within San Bernardino County, which includes sites that manage hazardous materials, generate or treat hazardous waste, or operate underground storage tanks. To address environmental concerns, the CUPA uses a comprehensive environmental management strategy, integrating educational outreach and enforcement actions to mitigate risks to human health and the environment while encouraging equitable business practices. SBCoFD administers six distinct hazardous materials and hazardous waste programs. The CUPA program is structured to consolidate, coordinate, and consistently manage permitting, inspection, and enforcement activities across the county.

SAN BERNARDINO COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The most recent update to the *San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan* (MJHMP) was completed in 2022. The MJHMP addresses a range of natural and human-caused hazards affecting the county, SBCoFD, the San Bernardino County Flood Control District, and Special Districts governed by the County Board of Supervisors. The MJHMP establishes specific goals, objectives, and actions for mitigating the impacts of identified hazards, which include geologic events, wildfires, floods, droughts, terrorism, and climate change. Recognizing the significance of mitigation planning, the Federal Emergency Management Agency (FEMA) provides incentives to communities that develop such plans. By adhering to FEMA guidelines for approval of this plan, the County becomes eligible to receive grant funding for mitigation projects.

SAN BERNARDINO COUNTY DEVELOPMENT CODE

San Bernardino County Development Code Title 2, Division 3, Chapter 6 (*Permits, Inspections, and Hearing Procedures for Hazardous Materials*) prohibits individuals or businesses subject to the requirements of the CUPA Permit Program Elements from generating, producing, storing, treating, or otherwise handling hazardous materials or hazardous waste without obtaining the appropriate operational permits and paying the required fees. Additionally, Chapter 7 (*CUPA Permit Elements for Hazardous Materials*) specifies the categories of facilities, activities, and operations that are subject to these permit requirements and associated fees.

SAN BERNARDINO COUNTY FIRE PROTECTION DISTRICT FIRE CODE

The most recent San Bernardino County Fire Protection District Fire Code (SBC Fire Code) was adopted on March 1, 2023. The SBC Fire Code incorporates the 2022 CFC by reference, along with specific changes, modifications, amendments, additions, deletions, and exceptions. These additional standards were established within the SBC Fire Code to adequately address the unique climatic, geological, and topographic conditions present in San Bernardino County. Local considerations include factors such as the “Santa Ana Winds,” seismic activity, unstable slopes, water contamination, and diverse terrain, which encompasses both mountainous and desert regions.

4.9.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to hazards and hazardous materials if the project would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b) 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.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Each of these thresholds is discussed under Section 4.9.5, *Project-Specific Impacts and Mitigation Measures*, below.

4.9.4 Impact Assessment Methodology

The hazardous materials analyzed include those potentially existing on the Project Site and those that would be used as part of construction, operations and maintenance, and future decommissioning. Potential existing hazards were assessed based on a review of state hazard databases and maps for the parcels composing the area.

Some hazardous materials would be used on a short-term basis during construction and future decommissioning, whereas other hazardous materials would be stored on-site for use during operations and maintenance. Therefore, this analysis was conducted by evaluating the proposed chemical types, quantities, transport, storage, use, and disposal.

4.9.5 Project-Specific Impacts and Mitigation Measures

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

IMPACT HZ-1: THE PROJECT WOULD NOT CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH THE ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIALS. *(LESS THAN SIGNIFICANT)*

Construction and operation of the proposed Project would involve the use, storage, and transport of hazardous materials, including fuels, lubricants, explosives, reagents, and other industrial chemicals commonly used in mining operations. These materials would be managed in compliance with applicable federal, State, and local regulations, including HMBP, SPCC, CalARP (as applicable), and Mine Safety Orders. Compliance with these regulatory programs would reduce the potential for hazardous materials exposure to less than significant levels.

Construction

Hazardous waste generated by the proposed Project would primarily occur as a result of construction, which includes several modifications to the existing CMM mining authorizations, including an expansion of mine pits, overburden storage areas, and heap leach pad, as well as construction of the 31.5-mile Ivanpah Water Pipeline and a 16.5-mile 69-kilovolt (kV) electrical transmission line. The proposed Project would also include modifications to on-site power generation facilities, relocation of select infrastructure components, and installation of up to seven additional pit dewatering wells. Hazardous materials used during construction may include diesel fuel, gasoline, lubricating grease, and other materials used to operate construction equipment. Hazardous waste anticipated during construction may include waste oils, lead-contaminated laboratory wastes, solvents, waste paints, contaminated PPE, and oily rags. Hazardous materials would be transported to the Project Area during construction in DOT-certified vehicles and in compliance with applicable requirements of the DOT, CHP, and California Department of Motor Vehicles (DMV).

Improper use, storage, or disposal of hazardous materials and wastes during Project construction could lead to negative health and environmental effects. Accidents and spills resulting from mishandling these substances may release hazardous chemicals into the environment, potentially contaminating soil, surface water, and groundwater, as well as producing toxic fumes.

An HMBP for the proposed Project, which includes an inventory of all materials present within the Project Area and diagrams of their locations across the facility, was submitted on February 27, 2025, and is on file with the local CUPA (SBCoFD – Hazardous Materials Division). This information is recorded to maintain safety and prevent possible environmental contamination or worker exposure. During Project construction, Material Safety Data Sheets for all hazardous materials present within the Project Area would be provided to all employees and emergency responders. Additionally, the proposed Project would require the preparation and implementation of best management practices (BMPs) as established in a Stormwater Pollution Prevention Plan (SWPPP), which is required by the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (see Section 4.10, *Hydrology and Water Quality*, of this EIR). By implementing a SWPPP and water quality BMPs, the potential for stormwater pollution, including from any hazardous materials on-site during construction, would be reduced. Workers would also receive training to be able to identify and manage hazardous materials, and the Project Applicant would develop a HASP for the proposed Project in accordance with OSHA regulations.

Any hazardous waste produced during Project construction would be collected and transferred off-site in accordance with all applicable federal, State, and local regulations. Hazardous waste would be transferred to a permitted and licensed treatment and/or disposal facility for either disposal or recycling. All hazardous waste leaving the Project Area would be transported by a licensed and permitted hazardous waste hauler and disposed of at an approved location. Non-hazardous waste produced during construction, including general refuse, would be disposed of in an authorized off-site landfill facility (see Section 4.14, *Public Services, Utilities, and Service Systems*), consistent with applicable regulations and Applicant-Proposed Environmental Protection Measures. Portable chemical toilets will be used during construction to manage sanitary waste and would be disposed of at an authorized off-site landfill facility, consistent with Applicant-Proposed Environmental Protection Measures.

Overall, Project construction would occur according to all applicable local standards established by the County, and State and federal health and safety requirements, including Cal/OSHA requirements, the Hazardous Waste Control Law, CalARP, and the HSC. All hazardous materials used during project construction would comply with applicable regulations. The construction contractor would be responsible for implementing regulations involving the transportation, handling, and disposal of hazardous materials, as well as the use of standard construction controls and safety procedures to avoid or minimize the potential for accidental release of hazardous substances into the environment. Standard construction practices would ensure that any hazardous materials released shall be properly contained and remediated in compliance with State and local laws. Hazardous substances used during construction are anticipated to be minimal, and CMV will be required to comply with all applicable regulations for the transportation and handling of hazardous substances. Therefore, impacts during construction would be *less than significant*, and mitigation is not necessary.

Operation

Project operation activities that would occur within the Project Area consist of ore mining operations at the Jumbo South Lesley Anne(JSLA), Jumbo, Oro Belle, and South Extension pit areas. Approximately 70 full-time employees would be required on-site during Project operation. Heavy equipment, including backhoes and dozers, would not be used for regular operations, but may be required for emergency spill response. Primary operational vehicles would include 100-ton haul trucks, used for moving backfill material to heap leach pads.

Similar to Project construction, hazardous materials transported to the Project Area during Project operation would occur in DOT-certified vehicles and in compliance with applicable requirements of the DOT, CHP, and California DMV. Hazardous wastes on-site are currently stored, recycled, or disposed of according to rules and regulations implemented by the County Department of Environmental Health Services (DEHS) and the DTSC and that are acceptable to the BLM and the County and would continue to be stored, recycled, or disposed of in the same manner. During operations, the volume of hazardous materials on-site would increase due to an increase in production, particularly fuels and sodium cyanide (CN), which would be stored in vertical steel tanks housed within concrete secondary containment at the Process Plant. The expansion includes the installation of additional carbon-in-column tanks, effectively doubling cyanide storage capacity. Fuels and concentrated CN are the main hazardous materials that are stored on-site and that would continue to be stored on-site. Fuels and oils are stored within tanks in the mobile maintenance area on-site. These tanks are double-walled and installed within spill containment areas to catch and contain potential spills and leaks. Aboveground storage tank (AST) fuel tanks are permitted through the SBCoFD, are included on the HMBP, and conform with the APSA. Hazardous and solid waste volumes would rise with increased production. Used oil, batteries, and other recyclable materials would be sent to authorized recycling facilities, while hazardous waste would be managed on-site and shipped off-site by licensed contractors for disposal or recycling. Comprehensive management plans—including the HMBP, Spill Contingency Plan, and Health and Safety Plan—are in place to guide

safe storage and handling, minimize the risk of accidental releases, and ensure a rapid and effective response in the event of a spill.

Pebble lime and cement, which are used as bulk dry reagents during ore agglomeration, are stored in vertical silos. Caustic soda and hydrochloric acid exist in small quantities and are reused and stored in the Carbon in Column (CIC) tank secondary containment area. Explosives and other blasting agents would be stored in facilities constructed and maintained according to federal and local permit requirements. The storage locations of hazardous materials and chemical reagents transported to the Project Area are identified in Appendix C.

As stated above, any hazardous waste produced during Project operation would be collected and transferred off-site in accordance with all applicable federal, State, and local regulations.

Overall, Project operation would occur according to all applicable local standards established by the County and State and federal health and safety requirements. These regulations regulate handling, using, and transporting of hazardous materials to protect human health and the environment. The proposed Project would be required to comply with applicable regulations for the transportation and handling of hazardous materials. Therefore, impacts during operations would be *less than significant*, and no mitigation is necessary.

Decommissioning

Once mining has been completed and ore stockpiles have been processed, the decommissioning of facilities will occur. Residual cyanide concentrations would be reduced by circulating rinse water or a neutralizing solution through the solution storage tanks, piping, and heap leach piles until levels acceptable to the Regional Water Quality Control Board (RWQCB) are met. Sludge at the bottom of solutions storage tanks and basins would be assayed and, if hazardous, would be transported to an approved hazardous waste facility for disposal. Spent ore material on heap leach piles would be detoxified with either rinse water or a neutralizing solution until residual cyanide concentrations are reduced to levels acceptable to the RWQCB. Unused reagents would be shipped back to the manufacturer via approved transport. Unsealed or partially used reagents would be handled individually. Toxic and hazardous chemicals would be shipped to an approved hazardous waste facility for disposal by a licensed carrier.

Upon disassembly of structures and equipment for salvage and removal, the Project Area would be restored in accordance with an approved reclamation plan in accordance with the SMARA. Compliance with County decommissioning requirements and federal, State, and local health and safety laws and regulations would reduce public health risks associated with the transportation, use and disposal of hazardous materials. Therefore, impacts during decommissioning would be *less than significant*, and mitigation is not necessary.

Impact HZ-1
The Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
Mitigation Measures
Mitigation is not necessary. Impact HZ-1 would be less than significant.

b) Would the project 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?

IMPACT HZ-2: THE PROJECT WOULD NOT 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. *(LESS THAN SIGNIFICANT)*

Potential accidental release scenarios include fuel spills, reagent releases, explosive handling incidents, and transportation-related accidents. Such events are considered reasonably foreseeable but unlikely due to the implementation of regulatory controls, worker training requirements, secondary containment, and emergency response procedures. In the event of an accidental release, response actions would be implemented in accordance with applicable emergency response and reporting requirements. Impacts associated with accidental releases would therefore be less than significant.

Construction

Potential impacts that may result from upset or accidents during Project construction include the accidental release of materials, such as fuel, oils, processing chemicals and their containers, lead-contaminated laboratory wastes, solvents, and paints. As described under Impact HZ-1, the proposed Project would be required to implement an HMBP, which would include an inventory of all materials present within the Project Area and diagrams of their locations across the facility. An HMBP for the proposed Project, which includes an inventory of all materials present within the Project Area and diagrams of their locations across the facility, was submitted on February 27, 2025, and is on file with the local SBCoFD – Hazardous Materials Division CUPA. Material Safety Data Sheets for all hazardous materials present within the Project Area would be provided to all employees and emergency responders. Additionally, BMPs required by the NPDES Construction General Permit would include containment and spill response measures which would reduce the potential impact from upset and accident conditions related to hazardous materials used during Project construction to a less-than-significant level.

As discussed in Section 4.9.1.1, *Current and Historic Uses*, there is one LUST site and one land disposal site located within the Project Area. The LUST site is listed as "Completed – Case Closed" and the land disposal site does not have any potential media of concern, so encountering aboveground and/or subsurface contamination is not anticipated during Project construction. Furthermore, the Project Area is not on or in the vicinity of any hazardous waste facilities or sites according to the EnviroStor database (DTSC 2026). Accordingly, the proposed Project would not expose construction workers, operational personnel, or the public to known hazardous materials conditions associated with listed DTSC cleanup sites. Any remaining debris that exists within the Project Area at the time of Project construction would be removed and disposed of according to all applicable federal and State disposal requirements for the materials found on-site. Therefore, potential impacts related to the risk of upset and accident conditions involving the release of hazardous materials into the environment during construction would be *less than significant*, and mitigation is not necessary.

Operation

Hazardous materials stored or used on-site during Project operation would include fuels, oils, processing chemicals and their containers, lead-contaminated laboratory wastes, solvents, and paints. Hazardous materials stored in tanks would be double-walled and installed within spill containment areas to catch and

contain potential spills and leaks in accordance with applicable federal, State, and local laws and regulations. The proposed Project would also require an HMBP, which includes an inventory of all materials present within the Project Area and diagrams of their locations across the facility. An HMBP for the proposed Project, which includes an inventory of all materials present within the Project Area and diagrams of their locations across the facility, was submitted on February 27, 2025, and is on file with the local SBCoFD – Hazardous Materials Division CUPA. The HMBP also includes an Emergency Response Plan (ERP) to train Project staff in emergency response, thus minimizing hazards associated with the on-site storage of hazardous materials.

Overall, the proposed Project would be required to comply with regulations and standard protocols regarding the storage, transportation, and use of any hazardous materials, which would minimize and avoid the potential for reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Therefore, impacts during Project operation would be *less than significant*, and mitigation is not necessary.

Decommissioning

Project decommissioning and disposal is described under Impact HZ-1. Residual cyanide concentrations would be reduced by circulating rinse water or a neutralizing solution through the solution storage tanks, piping, and heap leach piles until levels acceptable to the RWQCB are met. Sludge at the bottom of solutions storage tanks and basins would be assayed and, if hazardous, would be transported to an approved hazardous waste facility for disposal. Spent ore material on heap leach piles would be detoxified with either rinse water or a neutralizing solution until residual cyanide concentrations are reduced to levels acceptable to the RWQCB. Unused reagents would be shipped back to the manufacturer via approved transport. Unsealed or partially used reagents would be handled individually. Toxic and hazardous chemicals would be shipped to an approved hazardous waste facility for disposal by a licensed carrier. Generated waste would be recycled to the extent feasible, with minimal landfill disposal. All waste would be recycled or disposed of according to rules and regulations implemented by the County DEHS and DTSC and that are acceptable to the BLM and the County. Therefore, potential impacts related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during Project decommissioning would be *less than significant*, and mitigation is not necessary.

Impact HZ-2
The Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials in the environment.
Impacts Following Mitigation
Mitigation is not necessary. Impact HZ-2 would be less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

IMPACT HZ-3: THE PROJECT WOULD NOT EMIT HAZARDOUS EMISSIONS OR HANDLE HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS, SUBSTANCES, OR WASTE WITHIN ONE-QUARTER MILE OF AN EXISTING OR PROPOSED SCHOOL. *(NO IMPACT)*

As described in Section 4.9.1.2, *Schools*, the closest school to the Project Area and proposed off-site infrastructure improvements is Reid Elementary School, approximately 17 miles northeast. Due to this distance, the Project would not pose a hazard to schools or other sensitive receptors related to hazardous materials use or transport. Therefore, the proposed Project would not emit hazardous emissions or handle acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. Therefore, *no impacts* would occur.

Impact HZ-3
The Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

IMPACT HZ-4: THE PROJECT WOULD NOT CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT AS IT RELATES TO HAZARDOUS MATERIALS SITES COMPILED PURSUANT TO CALIFORNIA GOVERNMENT CODE SECTION 65962.5. *(LESS THAN SIGNIFICANT)*

The Project Area is on a site included on a list of hazardous materials sites pursuant to California Government Code Section 65962.5. According to the GeoTracker database, and as described under Section 4.9.1.1, *Current and Historic Uses*, there is a LUST site listed as the Cal Neva Border Gas Station located in Nipton that overlaps with the northern portion of the Project Area (State Water Board 2026). However, cleanup was completed and the site is listed as "Completed – Case Closed." The GeoTracker database also identified a land disposal site associated with Castle Mountain Venture in the Project Area. The site is listed as "Open – Operating" as of July 22, 2020. There are no other listed sites within 1 mile of the Project Area.

The Project Area is also not on a site included in the EnviroStor database of hazardous waste sites. The closest EnviroStor site or facility to the Project Area as listed in the database is a historical site owned by Molycorp Inc., approximately 9.5 miles west of the Project Area (DTSC 2026). The cleanup status of this site is listed as "RCRA/HWMP" as of August 22, 1995. However, due to the distance between this cleanup site and the Project Area, there is no potential environmental concern to the Project Area.

Although the Project Area and proposed off-site infrastructure improvements are on an active land disposal site, it is regulated pursuant to the CCR Title 27 and does not exhibit any potential contaminants of concern. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact HZ-4
The Project would not create a significant hazard to the public or the environment as it relates to hazardous materials sites compiled pursuant to the California Government Code Section 65962.5.
Mitigation Measures
Mitigation is not necessary. Impact HZ-4 would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

IMPACT HZ-5: THE PROJECT WOULD NOT RESULT IN A SAFETY HAZARD OR EXCESSIVE NOISE FOR PEOPLE RESIDING OR WORKING IN THE PROJECT AREA. *(NO IMPACT)*

As described in Section 4.9.1.3, *Airports*, the closest airport to the Project Area is Kidwell Airport, approximately 14 miles west of the Project Area. The Project Area is not within the Airport Influence Area of any nearby airport and is not included in any Airport Land Use Compatibility Plan. Due to the distance between the Project Area and nearby airports, the proposed Project would not interfere with airport operations or result in a safety hazard or excessive noise for people residing or working in the Project Area. Therefore, *no impact* would occur.

Impact HZ-5
The Project would not result in a safety hazard or excessive noise for people residing or working in the Project Area.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

IMPACT HZ-6: THE PROJECT WOULD NOT IMPAIR IMPLEMENTATION OF OR PHYSICALLY INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN. *(LESS THAN SIGNIFICANT)*

The proposed Project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The County recently amended the MJHMP in

2022, which presents the County's planned emergency response to natural disasters, technological incidents, and natural security threats (County of San Bernardino 2022). The purpose of the MJHMP is to improve coordination between all County facilities and personnel in an effort to minimize or eliminate emergency risks. The MJHMP creates an emergency management response plan by creating an organizational structure and identifying the responsibilities of each County agency during an emergency event or disaster. No revisions to the MJHMP would be required as a result of the proposed Project.

Project construction would not be expected to require any temporary complete lane closures that could restrict the movements of emergency vehicles, although partial temporary lane closures may be required. Partial street closures would continue to maintain two-way vehicular traffic along affected roadways.

As discussed further in Section 4.15, *Transportation and Recreation*, as the proposed Project may require partial road closures, the preparation of a Construction Traffic Plan (CTMP) would be required (see APM-TRA-2 in Section 4.15). The CTMP will be prepared and submitted for County review prior to commencement of construction activities and will include construction traffic control measures to ensure that emergency access is maintained during Project construction. The CTMP will include implementation of safety measures such as directing construction traffic with a flag person (as needed to maintain safety adjacent to existing roadways), placing temporary traffic control signage along access routes to indicate the presence of heavy vehicles and construction traffic, using escort vehicles for wide loads, and ensuring access for emergency vehicles to the Project Area. Therefore, the proposed Project would not result in inadequate emergency access during construction.

Federal, State, and local authorities require CMV to implement an ERP to respond to and manage emergencies. During Project operation, access roads would be maintained and would not interfere with emergency ingress or egress routes. During Project operation, maintenance activities would occur as needed at the Project Area and along the utility ROWs but are not expected to require any temporary travel lane closures. Walking Box Ranch Road, the primary access route to the mine area, is prone to flooding. If this occurs and the road becomes inaccessible, Hart Mine Road will serve as the alternative emergency evacuation route. Access roads within the Project Area would be constructed according to SBCoFD requirements. Traffic generated during Project operation would primarily be associated with mine maintenance activities using haul trucks. Project activities would not impede emergency vehicle access. Therefore, operational traffic would not interfere with emergency response or evacuation in the Project Area. As a result, the proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact HZ-6
The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
Mitigation Measures
Mitigation is not necessary. Impact HZ-6 would be less than significant.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

IMPACT HZ-7: THE PROJECT WOULD NOT EXPOSE PEOPLE OR STRUCTURES, EITHER DIRECTLY OR INDIRECTLY, TO A SIGNIFICANT RISK OF LOSS, INJURY OR DEATH INVOLVING WILDLAND FIRES. *(LESS THAN SIGNIFICANT)*

According to CAL FIRE, the Project Area is not in or near any SRAs for fire protection, or within lands classified as a Very High FHSZ (CAL FIRE 2025). The Project Area is partially classified as LRA Moderate, which is the lowest classification, and the remaining areas of the Project Area are within an FRA.

Even though the Project Area is not within an area with significant wildfire risk, any new development in previously undeveloped areas tends to increase the risk of wildfire occurrence. The proposed Project would introduce potential flammable sources that could increase the potential of fire hazards, such as fuel, blasting agents, electric transmission lines, construction and maintenance vehicles, and gas/electric-powered machinery.

The Project design, operation, and maintenance would comply with federal, State, and local worker safety and fire protection codes and regulations, which would decrease the potential for fire events. The proposed Project would be required to comply with the SBC Fire Code, which implements regulations established in the 2022 CFC in addition to standards specific to the County.

A majority of fires in the desert occur due to lighting or vehicles. Construction and maintenance vehicles have the potential to increase fire risk as a result of driving heated mufflers over vegetation. The Project Area is not within a High or Very High FHSZ and would therefore not be required to comply with CAL FIRE's vegetation clearance requirements as the potential for fire risk during construction and maintenance is considered low. However, prior to construction activities, vegetation salvage or grubbing will occur as necessary, which will clean vegetation from the ROWs.

Water would be used during construction activities to minimize fugitive dust, which would also dampen soils on-site and thus reduce fire risk. Water at the Project Area would be supplied from two existing groundwater well systems—the West Well Field (WWF) and the East Well Field (EWF).

The proposed Project also includes construction of the 31.5-mile Ivanpah Water Pipeline and a 16.5-mile 69-kV electrical transmission line to support expanded mining operations Additional water would be supplied by the proposed water pipeline, which would provide ancillary benefits, such as emergency water supply for wildfire protection. As discussed in Section 4.14, *Public Services, Utilities, and Service Systems*, the proposed water pipeline would provide a backup supply for current operations and a long-term stable supply for extended mining and fire suppression purposes. As discussed further in Section 4.16, *Wildfire*, despite the increased risk of fire ignitions during construction, mine operations, and reclamation, the Plan of Development (POD) design features aimed to prevent and suppress wildfires on and adjacent to construction areas would greatly improve fire response times. By having fire response equipment and resources on-site, fire ignitions within or adjacent to the construction site have a lower likelihood of establishment and spread than relying on federal and local wildfire fire response resources. The Wildfire analysis concluded that the proposed Project would not exacerbate fire risk or result in temporary or ongoing impacts to the environment as a result of installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities).The closest people or structure is Chevron Yates Well, a gas station approximately 9 miles northwest of the Project Area along I-15 and Yates Well Road. The proposed Project is not expected to expose this gas station or any other

people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact HZ-7
The Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.
Mitigation Measures
Mitigation is not necessary. Impact HZ-7 would be less than significant.

4.9.6 Cumulative Impacts

IMPACT HZ-8: THE PROJECT WOULD NOT RESULT IN CUMULATIVE IMPACTS RELATED TO HAZARDS AND HAZARDOUS MATERIALS. *(LESS THAN SIGNIFICANT)*

Similar to other potential impacts, such as those concerning geology and soils, risks related to hazards and hazardous materials are often localized in nature because they primarily relate to on-site existing hazardous conditions and/or hazards caused by the Project construction, operation, or decommissioning. Refer to Table 3-1, Cumulative Development Scenario Project List, in Chapter 3, *Environmental Setting* for a list of cumulative projects identified within the Project vicinity.

As with the proposed Project, the cumulative projects would also be required to avoid and/or mitigate impacts due to hazards and hazardous materials. Cumulative projects could involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction, operation, and decommissioning activities. Impacts from these activities are anticipated to be less than significant because any cumulative projects would also be required to comply with federal, State, and local regulations and policies. Compliance measures would involve but are not limited to the secondary containment of hazardous waste and proper disposal to minimize spills and leaks. Additionally, these cumulative projects would be required to implement safety measures and precautions necessary to minimize any potential disturbance of hazardous materials and prevent the creation of additional hazards that cannot be mitigated or contained properly.

A project could also result in a cumulatively considerable impact related to hazardous emissions within one-quarter mile of a school if cumulative projects would release hazardous emissions within one-quarter mile of the same school. However, neither the proposed Project nor any cumulative projects are within 0.25 mile of a school, and no cumulative impacts would occur.

Similarly, impacts regarding safety hazards and excessive noise within an airport land use planning area could be compounded by cumulative projects. However, the Project Site is not within an airport land use plan, and no cumulative impacts would occur.

Cumulative impacts regarding a project's location on a hazardous materials site pursuant to California Government Code Section 65962.5 would also not occur because there are no potential contaminants of concern located at the proposed Project's active land disposal site.

Impairing implementation of or physically interfering with an adopted emergency plan could be cumulatively considerable if cumulative projects were to impact the same plan or physically alter similar areas, such as the same road network. The following elements could cause potential impacts to road

networks: temporary or narrow haul road segments; heavy equipment traffic; dust that reduces visibility and delay engine ingress; new roads, fencing, gates, or infrastructure that may inhibit or mislead evacuations; and locked gates and limited turnaround radius on legacy roads in rugged terrain. These conditions are typical of mining transportation infrastructure in the vicinity of the Project Area and adjacent BLM lands. To improve mine operability and potential evacuation response along the same road network, the POD includes several design features to improve road conditions, passage, and use:

- The 18-mile Castle Mountain Mine access road will be graded quarterly and kept drivable (POD 1.1.2).
- No vehicle or equipment maintenance will be performed on roads or rights-of-way (POD 1.1.2).
- Non-routine road maintenance includes activities that generally only occur once every few years and may include replacing an existing culvert that spans one of the many ephemeral drainage crossings (POD 1.1.2).
- Application of dust repellent (POD 1.1.2).
- All personnel will be advised of their responsibilities under applicable federal, State, and County fire-prevention laws and reliability standards (POD 7.3).

Although mining-related infrastructure includes unpaved roads, grades, and heavy equipment traffic typical of the region, emergency responders operating within the California Desert are accustomed to such conditions. The proposed Project incorporates design features to maintain road functionality and visibility during emergency conditions, including grading, dust control, and access management.

Peak workforce conditions would be subject to mandatory site orientation, emergency training, and evacuation procedures to ensure that all personnel can safely evacuate. Additionally, the proposed Project was determined to have a less-than-significant impact to adopted emergency plans. Therefore, no cumulative impacts would occur.

Lastly, cumulative impacts regarding the exposure of people or structures to significant risk of loss, injury, or death involving wildland fires could be exacerbated, resulting in a cumulative impact if the proposed Project and cumulative projects further increase the risk of wildfires beyond that of the proposed Project. The proposed Project would provide emergency entry and exit points throughout the Project Area for adequate emergency access. Development plans are subject to review and approval by fire safety personnel to ensure that adequate emergency access and other safety features are included in the final Project design. The proposed Project would provide adequate facilities for emergency ingress and egress, and the proposed Project would be compliant with fire safety and building requirements to reduce wildfire risk. Reasonably foreseeable future projects would also be required to provide adequate emergency access for emergency and public ingress and egress and would be subject to environmental review to ensure consistency with applicable emergency response and evacuation plans. Although Project construction and operation could introduce ignition sources to the Project Area, the proposed Project would be designed in compliance with federal, State, and local worker safety and fire protection codes and regulations, which would minimize the potential for the occurrence of fire. Additionally, new infrastructure and improvements would not result in population growth that could create additional vehicle trips along evacuation routes. Cumulative projects would also be required to comply with the SBC Fire Code, CFC, and CBC requirements to minimize the potential for the occurrence of fires. Compliance with applicable federal, State, and local fire protection regulations would reduce the potential for the proposed Project and cumulative projects to expose people or structures to wildland fires to less than cumulatively considerable. Therefore, the proposed Project in combination with other reasonably foreseeable development projects in the Project vicinity would not result in cumulative impacts related to

hazards and hazardous materials, and impacts would be *less than significant* and less than cumulatively considerable.

Impact HZ-8 (Cumulative Impacts)
The Project would not result in cumulative impacts related to hazards and hazardous materials.
Mitigation Measures
Mitigation is not necessary. Impact HZ-8 would be less than significant.

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4.10 HYDROLOGY AND WATER QUALITY

This section of the EIR analyzes potential impacts to hydrology and water quality resulting from the implementation of the proposed Project. The analysis is conducted in accordance with the significance criteria set forth in Appendix G of the State CEQA Guidelines (14 California Code of Regulations [CCR] Chapter 3, Appendix G) and is based on review of existing resources; technical data; and applicable laws, regulations, and guidelines; as well as technical reports prepared for the proposed Project.

4.10.1 Existing Conditions

4.10.1.1 Regional Geography

The Project Area is in the Mojave Desert in the historic Hart Mining District of San Bernardino County. The Project Area is within the Lanfair Valley Groundwater Basin (Lanfair Basin), and its off-site water supply source (Northwest Water System [NWS]) is within the Ivanpah Valley Groundwater Basin (Ivanpah Basin).

CMM is near the northwest corner of Lanfair Valley, which is bounded by the New York Mountains to the west, Castle Mountains to the north, Piute Range to the east, and Hackberry Mountains and Vontrigger Hills to the south. The Lanfair Valley floor is approximately 20 miles wide from east to west and about 17 miles wide north to south. The Lanfair Valley is relatively flat, and elevations range from about 3,300 feet above mean sea level (amsl) along its southern margin to over 5,000 feet amsl in the north near the New York Mountains. Ivanpah Basin is an intermountain valley that abuts Lanfair Valley west of the New York Mountains along the California-Nevada border in northeastern San Bernardino County. The basin is bounded by the Clark Mountains on the northwest, Ivanpah Range on the west, and New York Mountains on the southeast. Elevations of the valley floor range from 2,595 feet amsl at Ivanpah Lake (dry) to about 4,000 feet amsl at the south end of the valley (GLA 2023).

4.10.1.2 Piute Spring

Piute Spring is an important perennial spring located approximately 15 miles southeast of the Project Area in the Piute Mountain Range. Potential mining-related effects on Piute Spring have been extensively evaluated since the late 1980s in the Castle Mountain region. To date, multiple hydrogeologic studies have reached a consistent conclusion: available evidence indicates that water use at the Mine Area is not expected to result in a substantial reduction in flow at Piute Spring. Long-term monitoring data show that spring discharge varies naturally over time, with fluctuations generally attributed to seasonal and climatic conditions affecting the broader Mojave Desert region.

CMV operates a groundwater monitoring network that serves as an early warning system for potential future impacts to Piute Spring. Groundwater elevations are regularly measured at five dedicated monitoring wells.

4.10.1.3 Climate and Precipitation

The Project Area is within the Mojave Desert, which is characterized by hot summers and cool winters. High temperatures in the summer typically exceed 100 degrees Fahrenheit, and the winter lows typically drop to freezing temperatures (National Park Service [NPS] 2023). Large temperature fluctuations within a day are typical. The Mojave Desert has two distinct rainy periods per year (winter and late summer), with low annual precipitation. Most of the annual precipitation falls between November and April, with May and June being the driest months. Precipitation varies with elevation; as such, average annual

precipitation ranges throughout the Mojave Desert between approximately 3.39 inches at the Davis Dam to approximately 20.51 inches at Lee Canyon Summit (GLA 2023).

The climate in the eastern Mojave Desert near the Project Area is described as warm and arid, with low precipitation, warm temperatures, and high evapotranspiration. Winter is the wettest period, when snow may fall at higher elevations. Spring is generally the driest period, and the summer period may bring monsoonal rains. Approximately two-thirds of the average annual precipitation in the Project Area occurs in the winter months (November–March) from storms that move in from the Pacific Ocean. Summer precipitation comes as short, intense, localized summer thunderstorms in the monsoon pattern. Much of this summer rain is lost to evapotranspiration, especially for the smaller storms; however, significant runoff can occur during the largest storms. Precipitation exceeds potential evapotranspiration only briefly from December to February, which is considered the period when most groundwater recharge occurs (GLA 2023).

4.10.1.4 Groundwater

The CMM currently obtains all water for existing operations from existing groundwater wells within the Lanfair Basin. Specifically, the CMM relies on three groundwater wells in the West Well Field (WWF) and three pit dewatering wells in the East Well Field (EWF). Because the proposed Project includes expansion of groundwater extraction infrastructure in the Lanfair and Ivanpah Basins, the existing groundwater conditions of both basins are provided below. Both the Lanfair and Ivanpah Basins are non-adjudicated groundwater basins.

4.10.1.5 Lanfair Valley Groundwater Basin

Lanfair Valley is a semi-enclosed drainage basin with a total drainage area of 348 square miles. In total, 63 regional wells (including 51 wells within the Lanfair Basin boundaries) and 13 groundwater springs (including eight wells within the Lanfair Basin boundaries) were identified within or in close proximity to the Lanfair Valley boundaries. Other than the CMM production wells, groundwater production within Lanfair Valley is quite modest, at an estimated average of no more than about 40 acre-feet per year (AFY) (GLA 2023). California Department of Water Resources (DWR) Bulletin 118 estimates that Lanfair Valley (Basin 7-001) has a storage capacity of approximately 3,000,000 acre-feet (GLA 2023). Basin recharge is estimated by DWR to be approximately 1,800 AFY (GLA 2023). Review of monitoring data collected for CMM monitoring wells indicates that groundwater levels near the CMM have remained relatively stable since the wells were constructed, and groundwater quality is generally good, at or near drinking water quality, with total dissolved solids (TDS) concentrations less than 300 milligrams per liter (mg/L) (GLA 2023).

Based on groundwater monitoring data collected from CMM monitoring wells between 1991 and 2022, groundwater elevations in the vicinity of the Project Area have remained within historical variability and do not show a sustained declining trend.

4.10.1.6 Ivanpah Valley Groundwater Basin

Ivanpah Valley is a large, north-trending, semi-enclosed basin along the Nevada-California border in eastern San Bernardino County. The groundwater in the basin is rated marginal to inferior for both domestic and irrigational use because of elevated fluoride and sodium contents (DWR 2022). Elevated concentrations of sodium preclude the use of groundwater for irrigation in many parts of the basin. TDS concentrations generally range from about 300 to 500 mg/L, although near Ivanpah Lake and in the northeast part of the basin, TDS concentrations have been recorded as high as 7,702 to 27,501 mg/L. The total storage capacity of the basin within California is estimated to be about 3,090,000 acre-feet,

Recharge in Ivanpah Basin is about 2,000 AFY, with about 752 AFY in Ivanpah North and 1,184 AFY in Ivanpah South, and Jean Valley is about 119 AFY (GLA 2023).

Groundwater pumping in the Ivanpah Valley basin is approximately 2,340 AFY for Ivanpah South and about 2,000 AFY for Ivanpah North. Water quality has remained relatively stable, with TDS and nitrate concentrations below about 500 mg/L and 3 mg/L, respectively (GLA 2023).

4.10.2 Regulatory Setting

The regulatory requirements summarized below establish performance standards that inform the CEQA thresholds of significance but do not, by themselves, substitute for the impact analysis required under CEQA. Compliance with these regulations is considered in evaluating the magnitude and significance of potential impacts.

4.10.2.1 Federal

CLEAN WATER ACT

The Clean Water Act (CWA), formerly known as the Water Pollution Control Act, was introduced in 1948 as the first major U.S. law to address water pollution. With an increase in concern for controlling water pollution, the CWA was significantly reorganized and expanded in 1972. The 1972 amendments to the CWA established a regulatory framework for controlling pollutant discharges into waters of the United States (WOTUS), gave the U.S. Environmental Protection Agency (USEPA) authority to implement pollution control programs (such as setting wastewater standards for industry), and required permits for point-source discharges through the National Pollutant Discharge Elimination System (NPDES) permit program. Although federally mandated, the NPDES permit program is generally administered at the state level.

Additionally, the 1972 amendments funded the construction of sewage treatment plants under the construction grants program and recognized the need for planning to address the critical problems posed by nonpoint source pollution (EPA 2025). The following CWA sections include relevant policies for regulating water quality:

- **Section 208** requires all states to assess damages to water quality from nonpoint source pollution, including runoff. Section 208 requires states to develop either regulatory or nonregulatory programs to control non-point-source pollution.
- **Section 303(d)** authorizes the USEPA to assist states, territories, and authorized Tribes in listing impaired waters and developing total maximum daily loads (TMDLs) for the identified water bodies. A TMDL establishes the maximum amount of a pollutant allowed in a listed water body. In addition, a TMDL establishes a starting point for restoring water quality.
- **Section 304(a)(4)** requires the USEPA to designate potential water pollutants as either conventional pollutants or toxic pollutants, based on the latest scientific knowledge regarding the effects of pollutants on water quality. Conventional pollutants include biochemical oxygen demand, total suspended solids, fecal coliform, pH, oil, and grease. The USEPA has designated 126 priority toxic pollutants.
- **Section 313** requires that each federal agency that has jurisdiction over any facility or is engaged in an activity that may result in discharge or runoff of pollutants must comply with all federal, state, and local water pollution-control requirements—which may include adherence to all requirements, including reporting, recordkeeping, and/or permitting requirements.

- **Section 401** requires a water quality certification to be issued or waived by states and authorized Tribes prior to issuance of a permit or license to conduct activities that may result in discharge to WOTUS. In cases where a state or Tribe does not have authority, the USEPA is responsible for issuing certification. The major federal licenses and permits subject to Section 401 include: (1) CWA Section 402 and 404 permits issued by the USEPA or U.S. Army Corps of Engineers (USACE); (2) Federal Energy Regulatory Commission licenses for hydropower facilities and natural gas pipelines; and (3) Rivers and Harbors Act Section 9 and 10 permits.
- **Section 402** establishes the NPDES. Discharges of point-source pollutants to WOTUS are prohibited unless they are compliant with provisions of the CWA. Typically, compliance is achieved by obtaining authorization to discharge pursuant to an NPDES permit issued by the USEPA or a state agency that has an approved NPDES program. NPDES permits generally contain water-quality and/or technology-based standards for effluent discharges, monitoring requirements, analytical testing methods, and reporting requirements.
- **Section 404** requires facilities that discharge dredged or fill materials into WOTUS to apply for a permit issued by the USACE.
- **Section 405** requires facilities that treated domestic sewage meet federal requirements for the use and disposal of sewage discharge through land application, surface disposal, or incineration. These requirements are incorporated to permit issuance under CWA Section 402.

NATIONAL FLOOD INSURANCE PROGRAM

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate the Federal Emergency Management Agency (FEMA) to assess flood hazards throughout the United States. In fulfillment of the mandate, FEMA produces Flood Insurance Rate Maps (FIRMs), which serve as critical tools for local and regional planners by identifying areas subject to flooding under current conditions and supporting informed land use and development decisions. To delineate a FIRM, FEMA conducts engineering studies referred to as flood insurance studies. Using the results of the flood insurance studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas (SFHAs) on FIRMs.

Additionally, the Flood Disaster Protection Act stipulates that owners of structures within designated SFHAs must purchase and maintain flood insurance as a condition of receiving federal or federally related financial assistance, such as mortgage loans from federally insured lenders. Community members within designated areas are eligible to participate in the National Flood Insurance Program, which is managed by FEMA and made available to the public through a network of insurance providers.

FEDERAL ANTIDEGRADATION POLICY

The federal Antidegradation Policy, adopted in 1972, mandates states to develop statewide policies to prevent the deterioration of surface water and groundwater resources and to identify implementation methods. In accordance with 40 Code of Federal Regulations Section 131.12, state antidegradation policies and associated implementation procedures must—at a minimum—ensure the protection and maintenance of: 1) existing in-stream water uses; 2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and 3) water quality in waters designated as outstanding national resources. Although this policy was established after the adoption of the State Water Resources Control Board (State Water Board) *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (Antidegradation Policy) in 1968, it served as a foundation for other states to protect surface and groundwater quality by adopting similar antidegradation policies.

SAFE DRINKING WATER ACT

The Safe Drinking Water Act (SDWA) serves as the principal federal legislation governing the quality of drinking water in the United States. Originally passed by Congress in 1974, the SDWA aims to safeguard public health by regulating the nation's public water systems and their sources—including rivers, lakes, reservoirs, springs, and groundwater wells. Under the provisions of the SDWA, the USEPA is responsible for setting national standards for drinking water quality and overseeing the implementation of these standards by states, local governments, and water suppliers. In California, the USEPA has designated the California Department of Public Health as the lead agency for administering the State's drinking water program. The SDWA regulates contaminants in domestic water supplies by establishing maximum contaminant levels, which are codified under 22 CCR standards.

DESERT RENEWABLE ENERGY CONSERVATION PLAN

The Desert Renewable Energy Conservation Plan (DRECP) is a landscape-level plan established by the U.S. Bureau of Land Management (BLM) for approximately 10.8 million acres of public lands in the California desert (BLM 2016). The DRECP provides a framework to balance development and conservation of natural resources, including habitat for sensitive species. For NEPA projects within the DRECP planning area, land use plan conformance requires that proposed actions align with the goals, objectives, and conservation and management actions (CMAs) identified in the plan. CMM was identified in the DRECP as an existing high-priority mineral operation exclusion area.

The DRECP Land Use Plan Amendment (LUPA) for the county refers to CMAs that apply to activities on all types of land allocations within the LUPA Decision Area, which includes lands within the interagency DRECP Plan Area and lands outside of the interagency DRECP Plan Area but within the CDCA (BLM 2016).

In accordance with the LUPA, CMAs for soil and water, general, groundwater resources, surface water, groundwater identified in the LUPA are:

- **LUPA-SW-1:** Stipulations or conditions of approval for any activity will be imposed that provide appropriate protective measures to protect the quantity and quality of all water resources (including ephemeral, intermittent, and perennial water bodies) and any associated riparian habitat (see biological CMAs for specific riparian habitat CMAs). The water resources to which this CMA applies will be identified through the activity-specific NEPA analysis.
- **LUPA-SW-2:** Buffer zones, setbacks, and activity limitations specifically for soil and water (ground and surface) resources will be determined on an activity/site-specific basis through the environmental review process and will be consistent with the soil and water resource goals and objectives to protect these resources. Specific requirements such as buffer zones and setbacks may be based—in part—on the results of the *Updated Water Supply Assessment, Castle Mountain Mine Project* (Water Supply Assessment), defined below (GLA 2023). In general, placement of long-term facilities within buffers or protected zones for soil and water resources is discouraged but may be permitted if soil and water resource management objectives can be maintained.
- **LUPA-SW-5:** Exceptions to any of the specific soil and water stipulations contained in this section of the LUPA, as well as those listed below under the subheadings Soil Resources, Surface Water, and Groundwater Resources, of the LUPA may be granted by the authorized officer if the applicant submits a plan or—for BLM-initiated actions—the BLM provides documentation that demonstrates:
- The impacts are minimal (e.g., no predicted aquifer drawdown beyond existing annual variability in basins where cumulative groundwater use is not above perennial yield and water tables are not currently trending downward) or can be adequately mitigated.

- **LUPA-SW-14:** All relevant requirements of EO 11988 (Floodplain Management) and EO 11990 (Protection of Wetlands) will be complied with.
- **LUPA-SW-15:** Surface water diversion for beneficial use will not occur absent a state water right.
- **LUPA-SW-16:** The 100-year floodplain boundaries for any surface water feature in the vicinity of the project will be identified. If maps are not available from FEMA, these boundaries will be determined via hydrologic modeling and analysis as part of the environmental review process. Construction within or alteration of 100-year floodplains will be avoided where possible and permitted only when all required permits from other agencies are obtained.
- **LUPA-SW-17:** An activity's groundwater extraction shall not contribute to exceeding the estimated perennial yield for the basin in which the extraction is taking place. Perennial yield is that quantity of groundwater that can be withdrawn from the groundwater basin without exceeding the long-term recharge of the basin or unreasonably affecting the basin's physical, chemical, or biological integrity. It is further clarified arithmetically below.
- **LUPA-SW-18:** Water extracted or used consumptively for the construction, operation, maintenance, or remediation of the project shall be solely for the beneficial use of the project or its associated mitigation and remediation measures, as specified in approved plans and permits.
- **LUPA-SW-20:** After application of applicable avoidance and minimization measures, all remaining unavoidable residual impacts to surface waters from the proposed activity shall be mitigated to ensure no net loss of function and value, as determined by the BLM.
- **LUPA-SW-21:** Consideration shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscape and reduced permeability from surface waters to areas where they will dissipate by percolation into the landscape.
- **LUPA-SW-22:** All hydrologic alterations shall be avoided that could reduce water quality or quantity for all applicable beneficial uses associated with the hydrologic unit in the project area, or specific mitigation measures shall be implemented that will minimize unavoidable water quality or quantity impacts, as determined by BLM in coordination with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and other agencies, as appropriate. These beneficial uses may include municipal, domestic, or agricultural water supply; groundwater recharge; surface water replenishment; recreation; water quality enhancement; flood peak attenuation or flood water storage; and wildlife habitat.
- **LUPA-SW-23:** A water (groundwater) supply assessment shall be prepared in conjunction with the NEPA analysis for the activity and prior to approval or authorization. This assessment must be approved by the BLM in coordination with USFWS, CDFW, and other agencies, as appropriate, prior to the development, extraction, injection, or consumptive use of any water resource. The purpose of the water supply assessment is to determine whether overuse or overdraft conditions exist within the project basin(s) and whether the project creates or exacerbates these conditions. The assessment shall include an evaluation of existing extractions, water rights, and management plans for the water supply in the basin(s) (i.e., cumulative impacts) and whether these cumulative impacts (including the proposed project) can maintain existing land uses as well as existing aquatic, riparian, and other water-dependent resources within the basin(s). This assessment shall identify:
    - All relevant groundwater basins or subbasins and their relationships.
    - All known aquifers in the basin(s), including their dimensions, whether confined or unconfined, estimated hydraulic conductivity and transmissivity, groundwater surface elevations, and direction and movement of groundwater.

- All surface water basin(s) related to water runoff, delivery, and supply, if different from the groundwater basin(s).
- All sites of surface outflow (springs or seeps) contained within the basin(s), including historic sites.
- All other surface water bodies in the basins(s), including rivers, streams, ephemeral washes/drainages, lakes, wetlands, playas, and floodplains.
- The water requirements of the proposed project and the source(s) of that water.
- An analysis demonstrating that water of sufficient quantity and quality is available from identified source(s) for the life of the project.
- An analysis of potential project-related impacts on water quality and quantity needed for beneficial uses, reserved water rights, existing groundwater users, or habitat management within or downgradient of the groundwater basin within which the project would be constructed.
- The above analyses shall be in the form of a numerical groundwater model. The model extent shall encompass the groundwater basin within which the project would be constructed, and any groundwater-dependent resources within or downgradient of that basin.

The primary product of the Water Supply Assessment shall be a baseline water budget, which shall be established based on the best-available data and hydrologic methods for the identified basin(s). This water budget shall classify and describe all water inflow and outflow to the identified basin(s) or system using best-available science and the following basic hydrologic formula or a derivation:[1]

$$P - R - E - T - G = \Delta S$$

The volumes in this calculation shall be in units of either AFY or gallons per year. The water budget shall quantify the existing perennial yield of the basin(s). Perennial yield is defined arithmetically as that amount such that:

$$P - R - E - T - G \geq 0$$

Water use by groundwater-dependent resources is implicitly included in the definition of perennial yield. For example, in many basins, the transpiration component (T) includes water use by groundwater-dependent vegetation. Similarly, groundwater outflow (G) includes discharge to streams, springs, seeps, and wetlands. If one or more budget components are altered, one or more of the remaining components must change for the hydrologic balance to be maintained. For example, an increase in the consumptive component of groundwater pumping can lower the water table and reduce transpiration by groundwater-dependent vegetation. The groundwater that had been used by the groundwater-dependent vegetation would then be considered "captured" by groundwater pumping. Similarly, increased groundwater consumption can capture groundwater that discharges to streams, springs, seeps, wetlands, and playas. These changes can occur slowly over time and may require years or decades before the budget components are fully adjusted. Accordingly, the water/groundwater supply assessment requires that the best-available data and hydrologic methods be employed to quantify these budgets and that groundwater consumption effects on groundwater-dependent ecosystems be identified and addressed.

[1] P is precipitation and all other water inflow or return flow, R is surface runoff or outflow, E is evaporation, T is transpiration, G is groundwater outflow (including consumptive component of existing pumping), and ΔS is the change in storage.

The Water Supply Assessment shall also address:

- Estimates of the total cone of depression considering cumulative drawdown from all potential pumping in the basin(s), including the project, for the life of the project through the decommissioning phase
- Potential to cause subsidence and loss of aquifer storage capacity due to groundwater pumping
- Potential to cause injury to other water rights, water uses, and landowners
- Changes in water quality and quantity that affect other beneficial uses
- Effects on groundwater-dependent vegetation and groundwater discharge to surface water resources—such as streams, springs, seeps, wetlands, and playas—that could impact biological resources or habitat or are culturally important to Native Americans
- Additional fieldwork that may be required (such as an aquifer test) to evaluate site-specific project pumping impacts and if necessary, establish trigger points that can be used for a groundwater monitoring and mitigation plan
- The mitigation measures required—if there are significant or potentially significant impacts on water resources—include the use of specific technologies, management practices, retirement of active water rights, development of a recycled water supply, or water imports

- **LUPA-SW-24:** A groundwater monitoring and reporting plan and mitigation action plan shall be prepared to verify the water supply assessment and adaptively manage water use as part of project operations. These plans shall be approved by BLM—in coordination with USFWS, CDFW, and other agencies, as appropriate—prior to the development, extraction, injection, or consumptive use of any water resource. The quality and quantity of all surface water and groundwater used for the project shall be monitored and reported using these plans. Groundwater monitoring includes measuring the effects of a project's groundwater extraction on groundwater surface elevations, groundwater flow paths, changes to groundwater-dependent vegetation, and aquifer recovery after project decommissioning. Surface water monitoring, if applicable, shall monitor for changes in the flows, water volumes, channel characteristics, and water quality as a result of a project's surface water use. Monitoring frequency, geographic scope, and reporting frequency shall be decided on a project- and site-specific basis and in coordination with the appropriate agencies that manage the water and land resources of the region. The geographic scope may include, at the very least, all basins/subbasins that potentially receive inflow from the basin where the proposed project may be sited and all basins/subbasins that may potentially contribute inflow to the basin where the project is proposed. The plans shall also detail any mitigation measures that may be required as a result of the project. These plans and all monitoring results shall be made available to BLM. BLM will make the plans and results available to USFWS, CDFW, and other applicable agencies.
- **LUPA-SW-25:** Where groundwater extraction, in conjunction with other cumulative impacts in the basin, has potential to exceed the basin's perennial yield or to impact water resources, one or more "trigger points," or specified groundwater elevations in specific wells or surface water bodies, shall be established by BLM. If the groundwater elevation at the designated monitoring wells falls below the trigger point(s) (or exceeds the trigger pumping rate), additional mitigation measures—potentially including cessation of pumping—will be imposed.
- **LUPA-SW-26:** Groundwater-pumping mitigation shall be imposed if groundwater monitoring data indicate impacts on water-dependent resources that exceed those anticipated and mitigated in the NEPA analysis and Record of Decision, even if the perennial yield of the basin is not exceeded. Water-dependent resources include riparian or phreatophytic vegetation, springs, seeps, streams, and other approved domestic or industrial uses of groundwater. Mitigation measures may

include changes to pumping rates, volume, or timing of water withdrawals; coordinating and scheduling groundwater pumping activities in conjunction with other users in the basin; acquisition of project water from outside the basin; and/or replenishing the groundwater resource over a reasonably short time frame. For permitted activities, permittees may also be required to contribute funds to basin-wide groundwater monitoring networks in basins (such as those encompassed by the East Riverside Designated Focus Area or in the Calvada Springs/South Pahrump Valley area) and to cooperate in the compilation and analysis of groundwater data.

- **LUPA-SW-27:** Water-conservation measures shall be required in basins where current groundwater demand is high and has the future potential to rise above the estimated perennial yield (e.g., Pahrump Valley). These measures may include the use of specific technology, management practices, or both. A detailed discussion and analysis of the effectiveness of mitigation measures must be included. Application of these measures shall be detailed in the groundwater monitoring and mitigation plan.
- **LUPA-SW-28:** Groundwater extractions from adjudicated basins, such as the Mojave River Basin, may be subject to additional restrictions imposed by the designated authority; examples include the Mojave Water Agency (MWA) and San Bernardino County (County) (County Ordinance 3872). Where provisions of the adjudication allow for acquisition of water rights, project developers could be required to retire water rights at least equal in volume to those necessary for project operation or propose an alternative offset based on the conditions unique to the adjudicated basin.
- **LUPA-SW-29:** Groundwater-pumping mitigation may be imposed if monitoring data indicate impacts on groundwater or groundwater-dependent habitats outside the DRECP area, including those across the border in Nevada. See LUPA-SW-26 for potential mitigation measures.
- **LUPA-SW-30:** Activities shall comply with local requirements for any long-term or short-term domestic water use and wastewater treatment.
- **LUPA-SW-31:** The siting, construction, operation, maintenance, remediation, and abandonment of all wells shall conform to specifications contained in the California DWR Bulletins #74-81 and #74-90 and their updates.
- **LUPA-SW-35:** Stipulations for activities in the vicinity of Death Valley National Park, Joshua Tree National Park, or Mojave National Preserve: NEPA analysis for activities involving groundwater extraction that are in these areas shall analyze and address any potential impacts of groundwater extraction on Death Valley National Park, Joshua Tree National Park, or Mojave National Preserve. BLM will consult with the NPS on this process. The analysis or analyses shall include:
    - Potential impacts on the water balances of groundwater basins within these parks and preserves
    - A map identifying all potentially impacted surface-water resources in the vicinity of the project, including a narrative discussion of the delineation methods used to discern those surface waters in the field
    - Any project-related modifications to surface-water resources, both temporary and permanent
    - Analysis of any potential impacts on perennial streams, intermittent streams, and ephemeral drainages that could negatively impact natural riparian buffers
    - Impacts of any project proposed truncation, realignment, channelization, lining, or filling of surface-water resources that could change drainage patterns, reduce available riparian habitat, decrease water storage capacity, or increase water flow velocity or sediment deposition, in particular where stormwater diverted around or through the project site is returned to natural drainage systems downslope of the project

- Any potential indirect project-related causes of hydrologic changes that could exacerbate flooding, erosion, scouring, or sedimentation in stream channels
- Alternatives and mitigation measures proposed to reduce or eliminate such impacts

4.10.2.2 State

CALIFORNIA DESERT CONSERVATION AREA PLAN

The California Desert Conservation Area (CDCA) Plan and multiple-use classes applicable to the Project Area are described in Section 4.11*, Land Use and Planning*. Specifically, with respect to water resources, the CDCA Plan requires that areas designated Class L be managed to provide for the protection and enhancement of surface and groundwater resources, except for instances of short-term degradation caused by water development projects (BLM 1999). For areas designated Class I or M, the CDCA Plan requires management to minimize the degradation of water resources. For all areas, best management practices (BMPs) developed by the BLM shall be used to avoid degradation and to comply with Executive Order (EO) 12088, which requires all federal agencies to comply with environmental laws and fully cooperate with the USEPA and state, interstate, and local agencies to prevent, control, and abate environmental pollution.

PORTER-COLOGNE WATER QUALITY ACT (CALIFORNIA WATER CODE)

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (California Water Code Section 13000 et seq.) established the State Water Board and the nine Regional Water Quality Control Boards (RWQCBs) within California. Recognizing regional differences in climate, topography, geology, and hydrology, individual RWQCBs develop and enforce water quality objectives and implementation plans regionally that best protect the beneficial uses of the state's waters. The proposed Project is within the jurisdiction of both the Colorado River Basin Region and Lahontan Region RWQCB geographic areas.

The State Water Board, in addition to CWA Section 401, is given authority to enforce the Porter-Cologne Act. In California, the State Water Board issues a statewide Construction General Permit (CGP) to regulate runoff from construction sites involving grading and earth moving in areas over 1 acre. The CGP also applies to projects under 1 acre if part of a larger common development, and it requires covered construction activities to use the best-available technology that is economically achievable as well as the best conventional pollution control technology. Compliance necessitates the preparation of a Stormwater Pollution Prevention Plan (SWPPP) for each covered construction project. A SWPPP identifies potential sources of sediment and pollutants and outlines strategies to minimize sediment and pollution in runoff water. Given the proposed Project disturbance is approximately 3,288 acres, it is subject to the requirements of the CGP.

STATE WATER BOARD ANTIDEGRADATION POLICY

The State Water Board Antidegradation Policy was adopted pursuant to State Water Board Resolution No. 68-16 in 1968. In contrast with the federal Antidegradation Policy, the State policy applies to all waters within the state, rather than solely surface waters. The policy stipulates that when the existing quality of a water body exceeds the standards set forth in the applicable basin plan, this higher quality must be preserved, and any discharges must not unreasonably impact current or anticipated beneficial uses of the water resource.

CALIFORNIA TOXIC RULE

In 2000, the California Environmental Protection Agency promulgated the California Toxics Rule, establishing water quality criteria for specific toxic substances to be applied to state waters. This action followed a 1994 California State court decision that revoked the State's water quality control plans containing numeric criteria, resulting in noncompliance with the CWA, therefore necessitating intervention by the federal EPA. The EPA promulgated this rule based on Section 303(c)(2)(B) of the CWA, which dictates that states must adopt numeric criteria to protect human health and the environment. The California Toxics Rule establishes both acute (i.e., short-term) and chronic (i.e., long-term) water quality standards for inland surface waters, enclosed bays, and estuaries that are designated as having beneficial uses protective of aquatic life or human health.

4.10.2.3 Regional

LAHONTAN REGIONAL WATER QUALITY CONTROL BOARD BASIN PLAN

The *Water Quality Control Plan for the Lahontan Region* (Basin Plan) defines water quality standards and regulatory measures for both surface water and groundwater throughout the Lahontan Region (Lahontan Region RWQCB 2025). It assigns beneficial uses to individual waterbodies and establishes corresponding water quality objectives, waste discharge prohibitions, and additional protective measures to support these uses. The Basin Plan serves as the mechanism for implementing the State Water Board Antidegradation Policy and State water quality standards. The Ivanpah Basin is located within the Lahontan Region.

COLORADO RIVER BASIN REGION RWQCB

The Colorado River Basin Region RWQCB regulates surface and groundwater quality for waters of the state and waste discharges to land/water for the Project Area, pursuant to the California Water Code and 27 CCR. Specific to the type of activity at the Project Area, the RWQCB regulates discharge of mining waste; operation of a waste management unit for treatment, storage, or disposal of mining waste (mining unit); and for stormwater discharges associated with industrial or construction activity.

NPDES PERMIT PROGRAM

The NPDES permit program was first established in 1972 under the authority of the CWA to regulate the discharge of pollutants from point sources into WOTUS. In California, the NPDES stormwater permitting program is administered by the State Water Board through its nine RWQCBs. The joint authority of water distribution and water quality protection allows the State Water Board to provide protection for statewide waters through the RWQCBs. The Project Area is within both the Colorado River Basin Region and Lahontan Region RWQCB geographic areas. To ensure protection of water quality, NPDES permits may contain effluent limitations for pollutants of concern, pollutant monitoring frequencies, reporting requirements, schedules of compliance when appropriate, operating conditions, BMPs, and administrative requirements. NPDES permits apply to publicly owned treatment works discharges, industrial wastewater discharges, and municipal, industrial, and construction site stormwater discharges. Further discussion of the RWQCB stormwater discharge permitting activities is provided below.

NPDES CONSTRUCTION GENERAL PERMIT

The State Water Board has issued a Statewide NPDES CGP for stormwater discharges associated with construction activities (known as the CGP [State Water Board Order No. 2009-0009-DWQ]). Order No. 2009-0009-DWQ was amended by Order No. 2010-0014-DWQ in November 2010, Order No. 2012-0006-DWQ in July 2012, and Order No. 20220057-DWQ in September 2022. The CGP is required

for all projects that disturb 1 acre or more of soil or projects that disturb less than 1 acre but are part of a larger common plan of development that, in total, disturbs 1 acre or more.

Construction activity subject to permitting includes clearing, grading, and ground disturbance, (e.g., stockpiling or excavation) but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The main objectives of the CGP are to:

- Reduce erosion;
- Minimize or eliminate sediment in stormwater discharges;
- Prevent materials used at a construction site from contacting stormwater;
- Implement a sampling and analysis program;
- Eliminate unauthorized non-stormwater discharges from construction sites;
- Implement appropriate measures to reduce potential impacts on waterways both during and after construction of projects; and
- Establish maintenance commitments on post-construction pollution-control measures.

Additionally, the CGP requires the preparation and implementation of a SWPPP. The SWPPP must provide and specify water quality BMPs designed to prevent pollutants from contaminating stormwater and to ensure that all products of erosion are contained on-site, preventing transport to receiving waters. Routine inspection of all BMPs is required under the provisions of the CGP, and the SWPPP must be prepared and implemented by qualified individuals, as defined by the State Water Board.

4.10.2.4 Local

SAN BERNARDINO COUNTYWIDE PLAN

The San Bernardino Countywide Plan (CWP) contains the long-term goals and policies that will guide County decisions, investments, and improvements toward achieving the Countywide Vision (San Bernardino County 2020). It serves as the County's General Plan for the unincorporated areas and includes policy direction for regional services the County administers in both incorporated and unincorporated areas. Relevant goals and policies from the Infrastructure and Utilities, Hazards, and Natural Resources Elements of the CWP are summarized below in Table 4.10-1.

Table 4.10-1. Applicable goals and policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Infrastructure and Utilities Element	
Goal IU-1	**Water supply.** Water supply and infrastructure are sufficient for the needs of residents and businesses and are resilient to drought.
Policy IU-1.1	**Water supply**. The County requires that new development be connected to a public water system or a County-approved well to ensure a clean and resilient supply of potable water, even during cases of prolonged drought.
Policy IU-1.3	**Recycled water**. The County promotes the use of recycled water for landscaping, groundwater recharge, direct potable reuse, and other applicable uses to supplement groundwater supplies.
Policy IU-1.9	**Water supply**. The County encourages water conserving site design and the use of water conserving fixtures, and advocate for the adoption and implementation of water-conservation strategies by water service agencies. For existing County-owned facilities, the County incorporates design elements, building materials, fixtures, and landscaping that reduce water consumption, as funding is available.

Goal/Policy	Goal/Policy Description
Goal IU-3	**Stormwater drainage**. A regional stormwater drainage backbone and local stormwater facilities in unincorporated areas that reduce the risk of flooding.
Policy IU-3.1	**Regional flood control**. The County maintains a regional flood control system and regularly evaluates the need for and implements upgrades based on changing land coverage and hydrologic conditions to manage and reduce flood risk. The County requires any public and private projects proposed anywhere in the county to address and mitigate any adverse impacts on the carrying capacity and stormwater velocity of regional stormwater drainage systems.
Policy IU-3.2	**Local flood control**. The County requires new development to install and maintain stormwater management facilities that maintain predevelopment hydrology and hydraulic conditions.
Policy IU-3.5	**Fair share requirements**. The County requires new development to pay its fair share of capital costs to maintain adequate capacity of the County's regional flood control systems.
Hazards Element	
Goal HZ-1	**Natural environmental hazards**. Minimized risk of injury, loss of life, property damage, and economic and social disruption caused by natural environmental hazards and adaptation to potential changes in climate.
Policy HZ-1.2	**New development in environmental hazard areas.** The County requires all new development to be located outside of the environmental hazard areas listed below. For any lot or parcel that does not have sufficient buildable area outside of such hazard areas, we require adequate mitigation, including designs that allow occupants to shelter in place and to have sufficient time to evacuate during times of extreme weather and natural disasters. **Flood:** 100-year flood zone, dam/basin inundation area **Geologic:** Alquist Priolo earthquake fault zone; County-identified fault zone; rockfall/debris-flow hazard area, medium or high liquefaction area (low to high and localized), existing and County-identified landslide area, moderate to high landslide susceptibility area) **Fire:** High or very high fire hazard severity zone
Policy HZ-1.3	**Floodplain mapping.** The County requires any new lots or subdivisions partially in, and any new development partially or entirely in 100-year flood zones or 100-year flood awareness areas to provide detail floodplain mapping for 100- and 200-year storm events as part of the development approval process.
Natural Resources Element	
Goal NR-2	**Water quality.** Clean and safe water for human consumption and the natural environment.
Policy NR-2.1	**Coordination on water quality.** The County collaborates with the State, RWQCBs, watermasters, water purveyors, and government agencies at all levels to ensure a safe supply of drinking water and a healthy environment.
Policy NR-2.2	**Water management plans.** The County supports the development, update, and implementation of ground- and surface water–quality management plans emphasizing the protection of water quality from point and non-point-source pollution.
Policy NR-2.5	**Coordination on water quality.** The County ensures compliance with the County's Municipal Stormwater NPDES by requiring new development and significant redevelopment to protect the quality of water and drainage systems through site design, source controls, stormwater treatment, runoff reduction measures, BMPs, low-impact development strategies, and technological advances. For existing development, the County monitors businesses and coordinates with municipalities.

SAN BERNARDINO COUNTY HYDROLOGY MANUAL

The *San Bernardino County Department of Public Works Hydrology Manual* provides standardized methods and criteria for analyzing and designing stormwater and flood control facilities within the county (San Bernardino County 1986). The County also manages stormwater runoff and pollutants from entering local lakes, rivers, and oceans based on its MS4 permit administered by the County Flood Control District, which acts as the principal permittee.

SAN BERNARDINO COUNTY GROUNDWATER ORDINANCE COMPLIANCE

In 2002, the County approved San Bernardino County Ordinance No. 3872, which added Article 5, Section 33.06551 et seq., Desert Groundwater Management, to San Bernardino County Code Title 3, Division 3, Chapter 6. Both the Lanfair and Ivanpah Basins are unadjudicated and located in unincorporated desert regions within San Bernardino County. Code Section 33.06552(c) includes a list of activities exempt from the provisions of Ordinance No. 3872. Mining activity is specifically exempt per Section 33.06552(c)(4), which provides that groundwater wells used in conjunction with mining operations for which a currently valid and compliant mining reclamation plan has been established are exempt from the ordinance.

4.10.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of 14 CCR 15121 (California Environmental Quality Act Guidelines). A project would result in significant adverse impacts related to hydrology and water quality if the project would:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    i) Result in substantial erosion or siltation on- or off-site;
    ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
    iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    iv) Impede or redirect flood flows?

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Each of these thresholds is discussed under Section 4.10.5, *Project-Specific Impacts and Mitigation Measures*, below.

4.10.4 Impact Assessment Methodology

Potential impacts were evaluated based on a comprehensive review of the proposed Project and all associated components based on the following reports:

- *Updated Water Supply Assessment, Castle Mountain Mine Project* (Water Supply Assessment) (GLA 2023)
- *Mine Materials Geo-Chemical Characterization Report Castle Mountain Mine* (GLA 2022)
- *Castle Mountain Project Technical Report on the Castle Mountain Project Feasibility Study* (M3 Engineering & Technology Corporation [M3] 2021)

4.10.5 Project-Specific Impacts and Mitigation Measures

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

IMPACT HYD-1: THE PROJECT WOULD NOT VIOLATE WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS OR OTHERWISE SUBSTANTIALLY DEGRADE SURFACE OR GROUNDWATER QUALITY. *(LESS THAN SIGNIFICANT)*

Construction

As described above, the Project Area is within the Lanfair Basin, which is bounded by the New York Mountains to the west, Castle Mountains to the north, Piute Range to the east, and Hackberry Mountains and Vontrigger Hills to the south. As such, in the event of heavy storms or prolonged rainfall, runoff generated in the mountains can cause flooding in the lower parts of the valley floors. Ivanpah Basin is an intermountain valley that abuts the Lanfair Basin.

During the Project construction phase associated with the expansion of the CMM and the underground water pipeline, particularly during the grading phase, stormwater runoff from precipitation events could cause exposed stockpiled reclamation soils to be subject to erosion and convey sediments into the local storm-drain systems. The Lanfair Basin contains a total drainage area of approximately 348 square miles and is considered a semi-enclosed drainage basin because there are several small outlets for surface water runoff throughout the valley, including Cedar Wash, Woods Wash, "South Wash" (officially unnamed), Sacramento Wash, and Piute Spring Canyon (GLA 2023). In addition, on-site watering activities to reduce airborne dust could contribute to pollutant loading in runoff.

Any discharge of stormwater or non-stormwater would comply with all applicable NPDES requirements related to construction, as well as Colorado River Basin Region RWQCB requirements. The Colorado River Basin Region RWQCB will continue monitoring until final closure of the Project Area. The Lahontan Region RWQCB will continue to manage the water resources of Ivanpah Valley, including water resources of the California portion of Ivanpah Valley (Ivanpah South) and groundwater use within the Nevada portion of the valley (Ivanpah North).

As Project construction would disturb more than 1 acre of soil, coverage under the NPDES CGP would be required to be obtained for the proposed Project. In accordance with the requirements of the CGP, a site-specific SWPPP would be prepared and implemented for the proposed Project that specifies BMPs to be used during construction to manage stormwater and non-stormwater discharges. BMPs would include erosion control, sediment control, non-stormwater management, and materials management BMPs. The SWPPP would include a description of potential sources of pollutants, including pollutants originating from off-site, which may flow across or through areas of construction. The SWPPP would specify the location, type, and maintenance requirements for BMPs necessary to prevent stormwater runoff from carrying construction-related pollutants into nearby receiving waters. BMPs would be required to be implemented to address the potential release of fuels, oil, and/or lubricants from construction vehicles and equipment (e.g., drip pans, secondary containment, washing stations); release of sediment from material stockpiles and other construction-related excavations (e.g., sediment barriers, soil binders); and other construction-related activities with the potential to adversely affect water quality. The number, type, location, and maintenance requirements of BMPs to be implemented as part of the SWPPP depend on

site-specific risk factors such as soil erosivity factors, construction season/duration, and receiving water sensitivity.

Compliance with the requirements of the Colorado River Basin Region and Lahontan Region RWQCBs (CWA NPDES Program and Porter-Cologne Act waste discharge requirements [WDRs]), CGP, and County stormwater regulations would reduce the potential for the proposed Project to violate water quality standards or WDRs during construction activities and would be conditions of approval issued by the County; therefore, impacts related to degradation of surface or groundwater quality from construction activities would be *less than significant*.

Operation

Within the Lanfair Basin, CMM currently relies on three groundwater wells in the WWF and three pit dewatering wells in the EWF. To support higher mining rates, the proposed Project includes expanding the EWF with up to seven additional pit dewatering wells. The proposed Project also includes developing the new NWS, which is an underground waterline totaling approximately 32 miles in the Ivanpah Basin. Combined, water use from the Lanfair and Ivanpah Basins would range from 830 to 1,340 AFY from each source, with a total permitted maximum of 2,250 AFY. This expansion would result in an increase of up to 1,625 AFY in groundwater use.

The Colorado River Basin Region RWQCB regulates surface water and groundwater quality for waters of the State and waste discharges to land and water for the Project Area, pursuant to the California Water Code and 27 CCR. Specific to the type of activity at the Project Area, the RWQCB regulates discharges of mining waste; operation of a waste management unit for treatment, storage, or disposal of a mining waste (mining unit); and stormwater discharges associated with industrial or construction activity. For a mine operation, a water board typically considers the heap leach pad and detoxified filtered mill tailings (and ponds) as a Group B mining unit (or mining waste which exceeds water quality objectives) and overburden rock piles as Group C mining units (or mining waste which poses no impact to groundwater or surface water quality), in accordance with 27 CCR. The heap leach pad, process plant, and lined ponds were the last facilities reclaimed, and areas were revegetated from 2005 to 2007 after the RWQCB recertified the heap leach pad material from a Group B to a Group C mine waste. Although overburden is technically a recognized waste, a Group C mine waste is not expected to affect surface water or groundwater quality (GLA 2022). The RWQCB-regulated mining units at the Project Area are operated under the approved June 2020 WDR Permit No. R7-2020-0004. A new or revised permit will be required for the mine expansion associated with the proposed Project (M3 2021) and would be a condition of approval issued by the County. The proposed Project would not increase the acreage of impermeable surfaces at the Project Area and therefore would not increase runoff at the Project Area. Compliance with the requirements of the Colorado River Basin Region and Lahontan Region RWQCBs and obtaining a WDR Permit would reduce operational impacts related to degradation of surface or groundwater quality to *less than significant.*

Impact HYD-1
The Project would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
Mitigation Measures
Mitigation is not necessary. Impact HYD-1 would be less than significant.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

IMPACT HYD-2: THE PROJECT WOULD NOT SUBSTANTIALLY DECREASE GROUNDWATER SUPPLIES OR INTERFERE WITH GROUNDWATER RECHARGE. *(LESS THAN SIGNIFICANT)*

Lanfair Valley Groundwater Basin

As mentioned above, existing operations at the CMM rely on three groundwater wells in the WWF and three pit dewatering wells in the EWF. To support higher mining rates, the proposed Project includes expanding the EWF in the Lanfair Basin with up to seven additional pit dewatering wells. This expansion would result in an increase of up to 1,625 AFY in groundwater use; therefore, a groundwater model of Lanfair Valley was developed to evaluate past and future groundwater pumping expected to support CMM by analyzing groundwater level data spanning the period from the 1980s to the present (GLA 2023).

The following three scenarios were simulated to evaluate various long-term groundwater pumping scenarios:

- **Baseline Scenario.** The baseline run approximates current groundwater pumping rates projected through 2045. This scenario simulates historical and future pumping with aggregate rates of 387 gallons per minute (gpm) from 2024 through 2045 (625 AFY). It also anticipates 5 years of heap rinsing at 350 gpm followed by 100 years of groundwater recovery with no pumping.
- **Scenario 1.** This case simulates proposed increased pumping with aggregate rates up to 830 gpm (1,339 AFY) from 2024 through 2045 and 5 years of heap rinsing at 350 gpm followed by 100 years of groundwater recovery with no pumping. Seven pit dewatering wells were included in the simulation.
- **Drought Scenario.** This scenario was developed to consider a sustained 10-year-long drought in the basin from 2024 through 2034. Groundwater pumping rates during this period are assumed to be same as for Scenario 1. The drought is integrated in the model setup by assuming a 10% reduction in recharge within the highlands recharge areas.

The groundwater modeling results show that reductions in the level of the groundwater table near the EWF bedrock pit dewatering wells will be very similar across all three scenarios, with the most pronounced drawdowns occurring in a small area near CMM. Farther into the valley, the decrease in groundwater levels will be much less significant, and water levels are expected to recover relatively quickly after mining operations cease; however, the recovery of the groundwater table, as indicated by residual drawdown after mining ends, is relatively slow. Because Piute Spring is approximately 12 miles from the CMM pumping centers, any potential effects from groundwater pumping would take time to reach this area. The model predicts a maximum possible decrease in spring discharge of 5% by 2150 compared with current conditions. Given the inherent uncertainties in modeling and the considerable distances involved, both geographically and over time, the risk of significant mining-related impacts on Piute Spring is considered low.

Additionally, other than groundwater pumping to support CMM, no significant pumping occurs within Lanfair Valley. Review of monitoring data collected for the CMM monitoring wells indicates that groundwater levels near the mine have remained relatively stable since the wells were constructed. While

the Lanfair Basin groundwater table response to planned mine pit dewatering and mining operations is more pronounced, the largest effects will occur close to the CMM Mine Area, and groundwater levels in this area will recover (GLA 2023). Therefore, implementation of the proposed Project would not adversely affect local groundwater supplies or groundwater recharge levels in the Lanfair Basin.

Ivanpah Valley Groundwater Basin

As mentioned above, to support higher mining rates associated with the proposed Project, the CMM would require higher groundwater use compared to existing operational conditions. Existing groundwater pumping in the Ivanpah Basin is approximately 2,340 AFY for Ivanpah South and about 2,000 AFY for Ivanpah North.

In 2020, CMV installed test well IV-1TW to a depth of 1,485 feet on private land near Nipton, California, on the southeast side of the Ivanpah Basin to estimate the yields to meet the water demands of CMM. CMV anticipates that approximately 825 to 1,325 AFY of water will be obtained from newly constructed Ivanpah well IV-1TW (or potentially balanced across one or more wells) located on private land near Nipton, California, approximately 16 miles northwest of CMM. Groundwater extracted from the Ivanpah Basin will be delivered to CMM via a proposed NWS system pipeline that would be installed within existing ROW and easements, including the CMM access road leading south to the mine from Route 164.

An ENSR groundwater model was constructed to model Ivanpah Valley groundwater use using the MODFLOW-NWT platform and the Groundwater Vistas, version 8, graphical user interface to accommodate data from well IV-1TW. Field observations and groundwater modeling indicate that well IV-1TW is capable of supplying the water needed for CMM through its active life. The groundwater modeling results in the Updated Water Supply Assessment prepared for the proposed Project indicate that planned pumping by IV-1TW is expected to result in only very minor effects that will be limited to the pumping well area. Therefore, the proposed Project's impacts related to groundwater supplies and groundwater recharge would be *less than significant*, and no mitigation is necessary.

Impact HYD-2
The Project would not substantially decrease groundwater supplies or interfere with groundwater recharge.
Mitigation Measures
Mitigation is not necessary. Impact HYD-2 would be less than significant.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or off-site;

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; oR

iv) Impede or redirect flood flows?

IMPACT HYD-3: THE PROJECT WOULD NOT SUBSTANTIALLY ALTER THE EXISTING DRAINAGE PATTERN OF THE SITE OR INCREASE SURFACE WATER RUNOFF IN A MANNER THAT WOULD RESULT IN SUBSTANTIAL EROSION OR SILTATION, FLOODING, OR AN EXCEEDANCE OF STORMWATER DRAINAGE SYSTEMS. *(LESS THAN SIGNIFICANT)*

Construction and operation of the proposed Project would require earthwork involving the use of heavy machinery—such as tractors, bulldozers, graders, trucks, and other heavy equipment—due to alterations to on-site topography. These activities may result in the loosening of existing surface soils and sediments, heightening the risk of erosion during storm events and increased downstream sediment yields from disturbed areas. Near CMM, the topography slopes gently from northwest to southeast at gradients between 0.5% and 2%, with an average of about 1%. The ground surface in the area is defined by multiple dry washes and incised drainages that flow to the southeast (GLA 2023). Proposed earthwork at the Project Area would not significantly alter the topography of the site in a manner that would influence drainage, as emphasis was placed on minimizing new disturbance in the existing watershed areas to allow for adequate natural drainage (M3 2021).

Stormwater and surface water in the northwestern portion of the Project Area straddling the California-Nevada border flows generally west across the Project Area toward Ivanpah Dry Lake, a terminal basin. Stormwater and surface water in the southeastern portion of the Project Area, including the Mine Area, flows generally east toward Piute Wash, a tributary of the Colorado River, which is a traditional navigable water approximately 55 river miles downstream of the Project Area (USEPA and U.S. Geological Survey [USGS] 2025). With the exception of large rainfall events, stormwater in the Project Area would be expected to evaporate, be transpired by vegetation, or percolate into the soil before reaching either Ivanpah Dry Lake or Piute Wash (Lukos 2022, 2025). High levels of runoff generated in the surrounding mountains during prolonged rainfall can cause flooding in the lower parts of the valley floors. However, where the depth to groundwater exceeds 60 feet, runoff that infiltrates can be expected to be partially transpirated. Thus, some runoff that infiltrates the coarse alluvial sediments in the Project Area becomes recharge to the shallow groundwater table beneath the alluvial fans; the remainder of the infiltrating runoff is transpirated (GLA 2023). The ground surface in the Project Area is defined by incised drainages that flow to the southeast. Implementation of the proposed Project would not alter the topography of the Project Area in a manner that would impar the existing drainage patterns, additionally, because the depth to groundwater exceeds 60 feet, flooding is not expected to occur at the Project Area. Stormwater that

falls on lined areas would be directed to emergency solution storage and stormwater basins, which are sized to handle a 100-year, 24-hour storm event. The gold processing and extraction circuit would continue to operate as a closed system, ensuring that rainwater entering the pad is either incorporated into the process or evaporates, thus preventing off-site runoff.

M3 conducted an analysis of the Project Area to evaluate peak discharge and runoff volumes and determine requirements for managing of surface flows around and through the Project Area as they relate to the proposed improvements for the proposed Project (M3 2021). The hydraulic analysis was performed following the San Bernardino Hydraulic Manual guidelines, focusing on a 24-hour 100-year storm event scenario. Watershed volumes and peak surface water elevations were assessed to establish criteria for effective water management and to reduce erosion risks. Diversion channels and culverts will be constructed around the northern end of the heap leach pad and the northern edge of the Project Area to direct water flow across regraded surfaces and into the natural channel, which has historically accommodated much of this runoff. To control erosion, Reno/Gabion mattresses will be installed in areas adjacent to new process facilities. The existing heap facility is designed to manage erosion from the exposed tailings surface and will be graded and linked to the Phase II heap leach pad to facilitate proper drainage during rainfall events.

Construction and operational activities would have the potential to temporarily increase erosion at the Project Area as a result of grading, trenching, and other ground disturbance. The proposed Project would comply with NPDES grading activity requirements. The proposed Project would disturb more than 1 acre of soil and would be required to obtain an NPDES CGP from the Colorado River Basin Region RWQCB. The CGP requires construction sites that disturb 1 acre or more of land to implement stormwater controls and to develop a SWPPP with BMPs to minimize the amount of sediment and other pollutants associated with construction sites from being discharged in stormwater runoff. Based on required compliance with existing regulations, the construction and operation of the proposed Project would not result in substantial soil erosion.

Based on required compliance with existing regulations and the nature or the proposed Project, ground-disturbing activities would not result in substantial erosion or siltation on- or off-site; therefore, impacts would be *less than significant*.

Impact HYD-3
The Project would not substantially alter the existing drainage pattern of the site or increase surface water runoff in a manner that would result in substantial erosion or siltation, flooding, or an exceedance of stormwater drainage systems.
Mitigation Measures
Mitigation is not necessary. Impact HYD-3 would be less than significant.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

IMPACT HYD-4: THE PROJECT WOULD NOT RISK RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION IN FLOOD HAZARD, TSUNAMI, OR SEICHE ZONES. *(LESS THAN SIGNIFICANT)*

The Project Area is in an inland desert and is not susceptible to tsunami inundation. Furthermore, there are no water bodies (e.g., lakes, reservoirs, and canals) in the Project vicinity that are capable of generating a seiche. There would be *no impacts* related to pollutant release due to a tsunami or seiche.

The Project Area is mapped by FEMA as Zone D, which is defined as an undetermined flood hazard. As such, to prevent any potential polluted runoff on-site, a hazardous materials business plan, which includes an inventory of all materials present within the Project Area and diagrams of their locations across the facility, is on file with the local Certified Unified Program Agency (San Bernardino County Fire Department – Hazardous Materials Division). Safety Data Sheets for all hazardous materials present within the Project Area would be provided to all employees and emergency responders. In the event of a spill during transport, the HMBP outlines emergency response procedures to ensure immediate containment and cleanup, thereby reducing the risk to human health and the environment (CMV 2025). Because all transport occurs in sealed, compliant containers and along planned routes, the risk of hazardous material reaching surrounding soils, surface water, or groundwater is considered minimal. Should a release occur, rapid response measures are designed to limit or prevent contamination of these environmental resources. Additionally, the proposed Project would require the preparation and implementation of BMPs as established in a SWPPP, which is required by the NPDES CGP. By implementing a SWPPP and water quality BMPs, the potential for stormwater pollution, including from any hazardous materials on-site during construction, would be reduced. Workers would also receive training to be able to identify and manage hazardous materials, and the Project Applicant would develop a health and safety plan for the proposed Project in accordance with Occupational Safety and Health Administration regulations.

A hydraulic analysis was conducted using the San Bernardino Hydraulic Manual guidelines as a basis for the review on the premise of a 24-hour 100-year storm event. Watershed volumes and maximum surface water elevations were evaluated to develop criteria for effective handling of the water and to minimize erosion concerns. Diversion channels and culverts around the north end of the heap leach pad and the northern extents of the Project Area will direct flow around and through regraded surfaces to the natural channel that has historically handled much of this flow. Any hazardous waste generated, such as waste oils, solvents, and contaminated personal protective equipment, would be securely stored in labeled containers before being transported off-site by licensed contractors. Secondary containment, regular inspections, and emergency response protocols collectively minimize the likelihood of hazardous materials migrating into the environment. In the event of a storage-related incident, rapid containment and cleanup procedures would further reduce the risk of soil or water contamination. As a result, no significant impacts to soils, surface water, or groundwater are anticipated from the storage of hazardous materials under the proposed action. Channel armoring in the form of Reno/Gabion mattresses will be used at areas sharing a border with new process facilities; therefore, the proposed Project is not likely to risk release of pollutants during Project inundation. Impacts would be *less than significant.*

Impact HYD-4
The Project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.
Mitigation Measures
Mitigation is not necessary. Impact HYD-4 would be less than significant.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

IMPACT HYD-5: THE PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF A WATER QUALITY CONTROL PLAN OR SUSTAINABLE GROUNDWATER MANAGEMENT PLAN. *(LESS THAN SIGNIFICANT)*

The existing state and federal water quality regulations, along with the SWPPP, aim to ensure compliance with water quality and waste discharge standards throughout Project construction and operations.

As mentioned above, in 2002, the County approved Ordinance No. 3872, which added Article 5, Section 33.06551 et seq., *Desert Groundwater Management*, to San Bernardino County Code Title 3, Division 3, Chapter 6. Both the Lanfair and Ivanpah Basins represent protected desert basins under the Desert Groundwater Management Ordinance of San Bernardino County, which protects groundwater resources in unincorporated and unadjudicated desert basins. However, due to limited socioeconomic development and basin-wide groundwater reliance, both basins are designated as very low priority under the California Sustainable Groundwater Management Act. Mining is specifically exempt per section 33.06552(c)(4), which provides that groundwater wells used in conjunction with mining operations for which a currently valid and compliant mining reclamation plan has been established are exempt from the Ordinance.

As discussed above, groundwater modeling indicates that sufficient supply is available from both basins to meet Project needs, with less than significant impacts expected to the groundwater table. Therefore, adequate water supplies for Project construction and operation would be provided by expanding the EWF in the Lanfair Basin, with up to seven additional pit dewatering wells, as well as developing the NWS in the Ivanpah Basin. The NWS is anticipated to provide 840 to 1,340 AFY. This expansion would result in an increase of up to 1,625 AFY in groundwater use. Per California laws and judicial precedent pertaining to groundwater rights, CMV has maintained its historic overlying water rights to groundwater aquifers in the Lanfair Basin by using extracted water for beneficial use within the basin. Additionally, Annual Notices of Groundwater Extraction are filed each year with the RWQCB for all existing water wells (M3 2021). Water quality sampling and monitoring under the direction of the Colorado River Basin Region RWQCB will continue until final closure of the Project Area. Currently, there are no known water quality impacts at or adjacent to the Project Area, as a result of past or present commercial-scale gold mining at the Project Area.

Because the proposed Project is exempt from the Desert Groundwater Management Ordinance, the proposed Project would not conflict with or obstruct a water quality control plan or sustainable groundwater management plan, and impacts would be *less than significant.*

Impact HYD-5
The Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.
Mitigation Measures
Mitigation is not necessary. Impact HYD-5 would be less than significant.

4.10.6 Cumulative Impacts

IMPACT HYD-6: THE PROJECT WOULD NOT RESULT IN CUMULATIVELY CONSIDERABLE IMPACTS RELATED TO HYDROLOGY AND WATER QUALITY. *(LESS THAN SIGNIFICANT)*

Surface Water and Water Quality

Cumulative impacts to surface water and water quality include the impacts of the proposed Project in addition to those expected from existing, proposed, and foreseeable projects within the Lanfair and Ivanpah Basins. When combined, the development of multiple projects within the proposed Project vicinity has the potential to collectively affect hydrological patterns and water quality. Cumulative impacts may introduce new pollutants or exacerbate existing ones during construction and operation, potentially leading to increased runoff due to increased impervious surface areas.

Despite the potential for cumulative project impacts, existing, proposed, and foreseeable project development within the Lanfair and Ivanpah Basins will be subject to the same scrutiny as the proposed Project; therefore, project developers will adhere to similar requirements as the proposed Project when seeking permits to comply with state, federal, and county floodplain development regulations. All projects will undergo environmental assessments similar to those of the proposed Project. To minimize or eliminate impacts to surface water and water quality, projects would incorporate mitigation measures as needed.

Considering the similar hydrological context and project types among cumulative projects, individual project impacts are anticipated to be mitigated to a level deemed less than significant through adherence to regulations and mitigation efforts. Consequently, the incremental contribution of the proposed Project to cumulative water quality effects caused by other past, present, and future projects would not be of significant concern when evaluated collectively.

Groundwater

The proposed use of additional groundwater resources in the Lanfair Basin and proposed NWS in the Ivanpah Basin are projected to be sufficient to meet the demands of both construction and operations of the proposed Project. When factoring in existing and expected future development within the subbasin, the proposed Project is not expected to negatively impact groundwater availability in the long term, which is attributed to the presence of current and anticipated groundwater reserves, as well as the continual regulation and management of the subbasin by the MWA. Based on the conclusions of the Water Supply Assessment, field data, and groundwater modeling indicate that planned groundwater pumping in the relatively remote Lanfair and Ivanpah Basins is sustainable throughout the planned active life of CMM and that potential effects on local groundwater resources will be minor regardless of drought conditions. Groundwater quality within CMM's planned pumping locations is relatively stable and will be adequate for long-term mine operations. Owing to the coarse alluvial character of the aquifer at well IV-1TW,

planned pumping by IV-1TW is expected to result in only very minor effects that will be limited to the pumping well area. While the Lanfair Basin groundwater table response to planned mine pit dewatering and mining operations is more pronounced, the largest effects will occur close to the CMM Mine Area, and groundwater levels in this area will recover. The proposed Project would include the extraction of water from multiple well fields, both existing and new, located in the Lanfair Basin and adjacent basins to the Project Area. The proposed Project will continue to conserve water by use of low evaporation drip emitters, burying drip emitters when feasible, limiting water in ponds with larger evaporative losses, use of binders and dust collectors that limit water needs for dust suppression, and using extensive water recycling in the process. It is expected that cumulative projects would also implement water-efficient tools in the design. In addition, by drawing water from multiple well fields in different water basins, water is drawn from a larger area, which lessens the demand on a single well field/aquifer.

In accordance with County requirements, future developments and related projects must implement BMPs to manage stormwater under NPDES guidelines. Each future development would be reviewed individually to ensure adequate stormwater drainage infrastructure is in place to handle runoff. As previously discussed, the proposed Project would comply with the NPDES CGP by implementing a project-specific SWPPP during construction; therefore, the proposed Project's contribution to groundwater impacts would not be cumulatively considerable.

Flood Hazards

Both the proposed Project and related developments will be designed to mitigate floodplain hazards within their respective footprints. As mentioned above, the Project Area is mapped by FEMA as Zone D, which is defined as an undetermined flood hazard. Heap leach pads and the comminution plant would be sited on gentle slopes to maximize gravity flow, minimize grading, and reduce impacts on natural drainage and floodplains. No special flood hazard areas are present in the Project Area.

Like the proposed Project, related projects will implement procedural and structural BMPs for hazardous materials management during construction and operation to prevent releases into stormwater. Because there are no special flood areas present in the Project Area, the proposed Project's contribution to flood hazard impacts would not be cumulatively considerable.

Impact HYD-6 (Cumulative Impacts)
The Project would not result in cumulatively considerable impacts related to hydrology and water quality.
Mitigation Measures
Mitigation is not necessary. Impact HYD-6 would be less than significant.

4.11 LAND USE AND PLANNING

This section of the EIR analyzes potential impacts to land use and planning resulting from the implementation of the proposed Project. The analysis is based on a review of existing resources, technical data, and applicable laws, regulations, and guidelines, as well as technical reports prepared for the proposed Project. The evaluation of significance is guided by the land use and planning criteria set forth in Appendix G of the State CEQA Guidelines.

4.11.1 Existing Conditions

4.11.1.1 On-Site Land Uses

The Castle Mountain Mine (CMM) is in the Mojave Desert in the historic Hart Mining District of San Bernardino County, California, approximately 100 miles east of Barstow, California; 60 miles south of Las Vegas, Nevada; and 40 miles northwest of the U.S. Bureau of Land Management (BLM) Needles Field Office (NFO) in California. The Project Area, encompassing approximately 4,285 acres, extends across portions of San Bernardino County, California, and Clark County, Nevada, and includes the Mine Area, the mine access road, the proposed water and powerlines, and a 50-foot buffer surrounding the water and powerlines; however, this EIR analyzes the portion of the Project located in San Bernardino County. The Project Area occupies private land owned by Castle Mountain Venture (CMV) and unpatented mining claims on BLM-administered land. Within San Bernardino County, the CMM Project Area has a designated land use of Resource/Land Management (RLM) and is zoned for Resource Conservation (RC). One of the primary purposes of the RLM land use designation is to "manage, preserve, and protect natural resources such as agricultural/grazing lands, watersheds, minerals, and wildlife habitat areas, as well as open space areas not otherwise protected or preserved." The RC land use zoning district provides sites for open space and recreational activities, single-family homes on very large parcels, and similar and compatible uses (San Bernardino County Development Code Chapter 82.03). Natural resource development (mining) is permitted with the approval of a mining Conditional Use Permit (CUP). Chapter 88.03 of the San Bernardino County Development Code (*Surface Mining and Land Reclamation*) combines the CUP and a required Reclamation Plan.

4.11.1.2 Surrounding Land Uses

The Project Area is in the Mojave Desert in the historic Hart Mining District of San Bernardino County, and the surrounding areas are characterized by vacant, undeveloped land. The surrounding lands predominantly have an Open Space (OS) land use designation and are similarly zoned as RC.

4.11.2 Regulatory Setting

4.11.2.1 Federal

FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976

The Federal Land Policy and Management Act of 1976 (FLPMA) consolidated public land management under a single federal agency, the BLM within the U.S. Department of the Interior, creating more consistent oversight of agricultural and forestry-related uses on public lands. FLPMA serves as the primary regulatory framework for the management of public lands under multiple-use and sustained yield principles, including livestock grazing and timber production, along with recreation, mineral development, wildlife habitat, and cultural and scenic resources conservation.

CALIFORNIA DESERT CONSERVATION AREA PLAN

The California Desert Conservation Area Plan (CDCA), encompassing approximately 25 million acres in Southern California, was designated by Congress in 1976 under FLPMA. Of the 25 million acres, the BLM administers approximately 12 million acres. Section 601 of FLPMA, as directed by Congress, required the BLM to prepare a comprehensive, long-range plan for the management of use, development, and protection of public lands within the CDCA. The resulting CDCA Plan (BLM 1999) is founded on principles of multiple use, sustained yield, and the maintenance of environmental quality. The CDCA Plan provides overarching regional guidance for the management of BLM-administered lands within the CDCA and sets forth long-term objectives for both the protection and use of the California desert.

DESERT RENEWABLE ENERGY CONSERVATION PLAN

The Desert Renewable Energy Conservation Plan (DRECP) (BLM 2016) is a landscape-level plan established by the BLM for approximately 10.8 million acres of public lands in the California desert. The DRECP provides a framework to balance development and conservation of natural resources, including habitat for sensitive species. For NEPA projects within the DRECP planning area, land use plan conformance requires that proposed actions align with the goals, objectives, and conservation and management actions (CMAs) identified in the plan.

Land Use Plan Amendment (LUPA)-wide refers to CMAs that apply to activities on all types of land allocations, within the LUPA Decision Area, which includes lands within the interagency DRECP Plan Area and lands outside of the interagency DRECP Plan Area but within the CDCA.

In accordance with the DRECP BLM LUPA, the following "land use and realty" LUPA-wide CMAs apply to the Project:

> **LUPA-LANDS-4:** Nonfederal lands within the boundaries of BLM LUPA land use allocations are not affected by the LUPA.
>
> **LUPA-LANDS-8:** The CDCA Plan requirement that new transmission lines of 161kV or above, pipelines with diameters greater than 12 inches, coaxial cables for interstate communications, and major aqueducts or canals for interbasin transfers of water will be located in designated utility corridors, or considered through the plan amendment process outside of designated utility corridors, remains unchanged. The only exception is that transmission facilities may be located outside of designated corridors within DFAs without a plan amendment. This CMA does not apply the Bishop and Bakersfield RMPs.

4.11.2.2 State

SENATE BILL 375

On September 30, 2008, Senate Bill (SB) 375 was instituted to help achieve Assembly Bill (AB) 32 goals through regulation of cars and light trucks. SB 375 aligns three policy areas of importance to local government: 1) regional long-range transportation plans and investments; 2) regional allocation of the obligation for Cities and Counties to zone for housing; and 3) achievement of greenhouse gas (GHG) emission reduction targets for the transportation sector set forth in AB 32. It establishes a process for the California Air Resources Board (CARB) to develop GHG emission reduction targets for each region (as opposed to individual local governments or households). SB 375 also requires Metropolitan Planning Organizations to prepare a Sustainable Communities Strategy (SCS) within the Regional Transportation Plan (RTP) that guides growth while taking into account the transportation, housing, environmental, and economic needs of the region. If the SCS is unable to achieve the regional GHG emissions reductions

targets, then the Metropolitan Planning Organization is required to prepare an alternative planning strategy that shows how the GHG emissions reduction target can be achieved through alternative development patterns, infrastructure, and/or transportation measures.

As required under SB 375, CARB is required to update regional GHG emission targets every 8 years, with the last update formally adopted in March of 2018. As part of the 2018 update, CARB adopted a passenger vehicle–related GHG reduction target of 19% by 2035 for the Southern California Association of Governments region, which is more stringent than the previous reduction target of 13% by 2035.

SURFACE MINING AND RECLAMATION ACT OF 1975

The Surface Mining and Reclamation Act of 1975 (SMARA; California Public Resources Code [PRC] Sections 2710–2796) provides a comprehensive surface mining and reclamation policy with the regulation of surface mining operations to assure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. SMARA also encourages the production, conservation, and protection of the state's mineral resources. PRC Section 2207 provides annual reporting requirements for all mines in the state, under which the State Mining and Geology Board is also granted authority and obligations.

4.11.2.3 Local

SAN BERNARDINO COUNTYWIDE PLAN

The *San Bernardino County Countywide Plan* (CWP), adopted by San Bernardino County (County) in October 2020, is a collection of planning tools intended to guide future decisions, investments, and improvements throughout the county (County of San Bernardino 2024). The CWP consists of the County Policy Plan, the County Business Plan, and a communities plan. The County Policy Plan is an update and expansion of the County's General Plan addressing physical, social, and economic issues facing the unincorporated portions of the county, as well as supportive services for adults and children, healthcare services, public safety, and other regional county services provided to both incorporated and unincorporated areas, and was updated in September 2022. The County Policy Plan contains the following 11 elements: Land Use, Housing, Infrastructure and Utilities, Transportation and Mobility, Natural Resources, Renewable Energy and Conservation, Cultural Resources, Hazards, Personal and Property Protection, Economic Development, and Health and Wellness. The Business Plan consists of a policy-based governance element along with an implementation plan. The communities plan consists of 35 Community Action Guides that provide a framework for communities to create future character and independent identity through community actions.

Since the proposed Project would not involve removal of existing housing, construction of new housing, or zoning changes to or from residential zoning, no goals or policies in the Housing Element would be applicable to the proposed Project. Additionally, the proposed Project does not include the development of places, facilities, or programs for learning, arts and culture, entertainment, and social bonding; therefore, the goals and policies of the Health and Wellness Element would not be applicable to the Project. Table 4.11-1 provides a summary of the County Policy Plan Elements.

Table 4.11-1. San Bernardino County Policy Plan Element Summary

General Plan Element	Summary
Land Use Element	The Land Use Element designates the distribution, location, intensity, and balance of land uses for the unincorporated areas of the county; establishes goals for where, when, and how the county grows, which is also guided by policies in other elements; provides direction for new development on community design, land use compatibility, and interagency coordination; and provides guidance for orderly expansion of incorporated areas.
Housing Element	The Housing Element identifies adequate sites to facilitate and encourage housing for households of all economic levels, including persons with disabilities; removes governmental constraints to housing production, maintenance, and improvement as legally feasible and appropriate; assists the development of adequate housing for low- and moderate-income households; preserves publicly assisted multiple-family housing developments in each community; conserves and improves conditions in existing housing and neighborhoods, including affordable housing; and promotes a range of housing opportunities for all individual and households consistent with fair and equal housing opportunity.
Infrastructure and Utilities Element	The Infrastructure and Utilities Element provides guidance on where, when, and how infrastructure and utilities are improved and expanded; establishes goals and policies to maintain an adequate supply of potable water and the safe disposal, treatment, and recycling of wastewater, and the recycling and safe disposal of solid waste; and provides direction on system integration, resource conservation, and the protection of the natural environment.
Transportation and Mobility Element	The Transportation and Mobility Element establishes the location and operational conditions of the roadway network; coordinates the transportation and mobility system with future land use patterns and projected growth; provides guidance for the County's responsibility to satisfy the local and subregional mobility needs of residents, visitors and businesses in unincorporated areas; and addresses access and connectivity among the various communities, cities, towns, and regions, as well as the range and suitability of mobility options: vehicular, trucking, freight and passenger rail, air, pedestrian, bicycle, and transit.
Natural Resources Element	The Natural Resources Element establishes policies that preserve and enhance the beauty and resiliency of our natural resources; provides guidance on coordinating with others to manage, conserve, and protect natural resources such as watersheds, wildlife habitat areas and corridors, and other natural and open space areas; promotes clean air and a supply of water for human consumption and the natural environment; supports the maintenance and enhancement of a countywide system of open space, parks, and recreation assets; provides guidance and support for mining operations and the preservation of viable agricultural and grazing lands; and provides guidance on the location and distribution of new development to protect natural resources.
Cultural Resources Element	The Cultural Resources Element establishes direction on notification, coordination, and partnerships to preserve and conserve cultural resources; provides guidance on how new development can avoid or minimize impacts on cultural resources; and provides direction on increasing public awareness and education efforts about cultural resources.
Hazards Element	The Hazards Element identifies potential natural and human-generated hazards, including increased risk due to climate change; provides direction to address risks to residents, businesses, workers, and visitors; and prioritizes resources and reduce pollution exposure in unincorporated disadvantaged communities.
Personal and Property Protection Element	The Personal and Property Protection Element promotes continuous improvement in the provision of public safety and administration of justice; supports coordinated and effective interagency response to emergencies and natural disasters; provides policy direction to engage communities and respond to identified needs; fosters collaboration among the Board of Supervisors-directed agencies and departments and the elected Sheriff and District Attorney; and augments, rather than replaces, federally and State-mandated goals and objectives.
Economic Development Element	The Economic Development Element provides direction for County efforts to attract private investment in nonresidential development in unincorporated areas of the county; focuses countywide investments in workforce development on growing occupations and industries; establishes the County's intent to invest in economic development in order to improve the countywide jobs-housing ratio; and identifies the means through which the County promotes countywide economic development.
Health and Wellness Element	The Health and Wellness Element provides guidance on addressing issues that by their nature require extensive coordination and collaboration within the county and with outside agencies and organizations; establishes a holistic approach to the continuum of care; identifies the County's policy focus regarding its use of federal and State funds to improve the physical and behavioral health of residents; and describes the County's priorities and roles in serving the health and social needs of vulnerable populations.

Source: County of San Bernardino (2022)

SAN BERNARDINO COUNTY DEVELOPMENT CODE

The San Bernardino County Development Code implements the goals and policies of the CWP by regulating land uses within the unincorporated areas of the county. Each piece of property is within a land use zoning district, which describes the rules under which that land may be used. The San Bernardino County Development Code generally covers the range of uses allowable within each district and establishes specific development standards for each district and the procedures to follow in order to approve a particular use. The Project Area is within an unincorporated area of San Bernardino County; therefore, the County establishes the land use and zoning designations for the Project Area.

4.11.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to land use and planning if the project would:

a) Physically divide an established community.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Each of these thresholds is discussed under Section 4.11.5, *Project-Specific Impacts and Mitigation Measures*, below.

4.11.4 Impact Assessment Methodology

The proposed Project's consistency with the CWP goals and policies is evaluated in Table 4.11-2. Based on State CEQA Guidelines Section 21065, inconsistency with an adopted land use plan, policy, or regulation does not, by itself, constitute a significant environmental impact unless the inconsistency would result in either a direct or indirect physical change in the environment, or a reasonably foreseeable physical change in the environment. The analysis in this section, therefore, focuses on whether the implementation of the proposed Project would result in such physical environmental changes.

4.11.5 Project-Specific Impacts and Mitigation Measures

a) Would the project physically divide an established community?

IMPACT LU-1: THE PROJECT WOULD NOT INCLUDE FEATURES THAT WOULD PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY DURING CONSTRUCTION OR OPERATION. *(NO IMPACT)*

The Project Area, encompassing approximately 4,285 acres, extends across portions of San Bernardino County, California, and Clark County, Nevada, and includes the Mine Area, the mine access road, the proposed water and powerlines, and a 50-foot buffer surrounding the water and powerlines; however, this EIR analyzes the portion of the Project located in San Bernardino County.

As shown in Figure 2-3 in Chapter 2, *Project Description*, the Project Area is in the Mojave Desert in the historic Hart Mining District of San Bernardino County, and surrounding uses are characterized by an OS land use designation and are similarly zoned as RC.

The Project Area occupies private land owned by CMV and unpatented mining claims on BLM-administered land. The existing and proposed disturbance within the Project Area is approximately

3,288 acres. The proposed Project includes a request for water and power utilities to be installed within existing rights-of-way (ROWs) to support the expansion.

There are no existing residential uses on-site, and no residential uses are included in the proposed Project. The nearest residences to the Mine Area are approximately five miles from the mine. Additionally, there are small residential areas offset from the pipeline ROW amid other industrial developments, including a railroad, a gravel pile, and a staging/storage area. As such, Project construction would not involve features such as a highway, aboveground infrastructure, or an easement through an established neighborhood having the potential to divide an established community, as there are no residences in the vicinity of the Project Area and surrounding land uses are limited to open space. As such, construction of the Project would not divide an established community or introduce a physical barrier that would separate existing land uses or populations.

Following construction activities, implementation of the proposed Project would result in the operation of the expanded CMM. The majority of the existing mine facility would remain unchanged and in the same location under the proposed Project; however, some facilities would be relocated to accommodate expanded mine pits, overburden sites, and the heap leach pad. Facility relocation activities would include moving the main security gate, truck scale, parking, and administration offices approximately 0.5 mile west along the primary access road, minimizing impacts to sensitive vegetation and maintaining public access via Hart Mine Road. Additionally, the mine fleet maintenance facilities would be relocated to the west to support the expanded haul operations. Relocated facilities would be sited a minimum of 1,500 feet from proposed pit boundaries to meet safety requirements for blasting.

The proposed CMM Access Road and Mine Pit Haul Road would connect Project Area features and increase accessibility throughout the Project Area. While the proposed Project includes the expansion of the existing CMM and would increase land disturbance in the Mine Area by 1,434 acres, resulting in a total Project disturbance of approximately 3,288 acres, it would not introduce a new barrier or division to the Project Area.

In addition, Project operation would not require the permanent closure of any streets surrounding the Project Area that currently provide access to surrounding uses. Additional improvements associated with the proposed Project include realignment of New York Mountain Road along the western edge of the expanded heap leach pad to preserve public access. Therefore, Project operation would not require the construction of any new roadways or other mobility features that would result in a new barrier through the existing Project Area. It should be noted that public access to the Project Area is restricted and the entirety of the Project Area is enclosed with fencing and gates to protect both public safety and wildlife. With Project implementation, this perimeter fencing would remain and be expanded as perimeter security and desert tortoise fencing would be implemented. While fencing does restrict access to the Project Area, it is an existing safety feature and would not be considered an element that would divide an established community.

Given the proposed Project includes the expansion of CMM and associated facilities and would not introduce features that would create a new physical barrier, restrict circulation between existing land uses, or otherwise divide established communities or land use patterns, Project operation would not physically divide an established community. Therefore, the proposed Project would not result in a physical environmental impact related to the division of an established community, and *no impact* would occur.

Impact LU-1
The Project would not include features that would physically divide an established community during construction or operation.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

b) Would the project cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

IMPACT LU-2: THE PROJECT WOULD NOT CAUSE A SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO A CONFLICT WITH ANY LAND USE PLAN, POLICY, OR REGULATION ADOPTED FOR THE PURPOSE OF AVOIDING OR MITIGATING AN ENVIRONMENTAL EFFECT. *(NO IMPACT)*

The consistency analysis of the applicable land use plans, policies, and regulations considers the holistic impacts associated with implementation of the proposed Project and does not provide separate construction and operation analyses. This is because most policies broadly consider the appropriateness of types of land uses. The consistency analysis of the applicable land use plans, policies, and regulations with the proposed project is detailed below.

San Bernardino Countywide Plan

As shown below in Table 4.11-2, the proposed Project would be consistent with the applicable policies identified in the County Policy Plan (General Plan) elements, including the Land Use, Infrastructure and Utilities, Transportation and Mobility, Natural Resources, Cultural Resources, Hazards, and Personal and Property Protection Elements.

Table 4.11-2. Project Consistency with Land Use and Planning Goals in the County Policy Plan

Goal/Policy	Project Consistency Analysis
Land Use Element	
Goal LU-2: An arrangement of land uses that balances the lifestyle of existing residents, the needs of future generations, opportunities for commercial and industrial development, and the value of the natural environment. **Policy LU-2.3:** We require that new development is located, scaled, buffered, and designed for compatibility with the surrounding natural environment and biodiversity. **Policy LU-2.4:** We consider proposed development that is consistent with the Land Use Map (i.e., it does not require a change in Land Use Category), to be generally compatible and consistent with surrounding land uses and a community's identity. **Policy LU-2.7:** We prioritize growth that furthers a countywide balance of jobs and housing to reduce vehicle miles traveled, increase job opportunities and household income, and improve quality of life. We also strive for growth that furthers a balance of jobs and housing in the North Desert region and the Valley region.	**No Conflict.** The proposed Project is compatible with the surrounding area as the Project Area is in the Hart Mining District of San Bernardino County and is consistent with the Land Use Map. Within San Bernardino County, the CMM Project Area has a designated land use of RLM and is zoned for RC. One of the primary purposes of the RLM land use designation is to "manage, preserve, and protect natural resources such as agricultural/grazing lands, watersheds, minerals, and wildlife habitat areas, as well as open space areas not otherwise protected or preserved." Natural resource development (mining) is permitted with the approval of a mining CUP. Chapter 88.03 of the San Bernardino County Development Code (*Surface Mining and Land Reclamation*) combines the CUP and a required Reclamation Plan. As mentioned previously, implementation of the proposed Project would result in the establishment of 500 temporary and 400 permanent jobs.
Infrastructure and Utilities Element	
Goal IU-1: Water supply and infrastructure are sufficient for the needs of residents and businesses and resilient to drought. **Policy IU-1.2:** We require that new development be connected to a public water system or a County-approved well to ensure a clean and resilient supply of potable water, even during cases of prolonged drought.	**No Conflict.** Once operational, implementation of the proposed Project would require 2,250 acre-feet per year of groundwater. To meet this demand, the proposed Project would include the construction of a 31.5-mile underground water pipeline, crossing both public and private lands in San Bernardino County, California, and Clark County, Nevada. The proposed Project would include development of additional and reliable groundwater supply infrastructure to increase existing operational resiliency, enhance regional water supply options for emergency wildfire protection, and meet the water supply demand of Project expansion for continued Phase II mining. Currently, CMM relies on three County-approved groundwater wells in the West Well Field (WWF) and three County-approved pit-dewatering wells in the East Well Field (EWF). To support higher mining rates, the proposed Project would include expanding the EWF in the Lanfair Basin with up to seven additional pit-dewatering wells, which would be approved by the County.
Goal IU-3: A regional stormwater drainage backbone and local stormwater facilities in unincorporated areas that reduce the risk of flooding. **Policy IU-3.1:** We maintain a regional flood control system and regularly evaluate the need for and implement upgrades based on changing land coverage and hydrologic conditions in order to manage and reduce flood risk. We require any public and private projects proposed anywhere in the county to address and mitigate any adverse impacts on the carrying capacity and stormwater velocity of regional stormwater drainage systems. **Policy IU-3.2:** We require new development to install and maintain stormwater management facilities that maintain predevelopment hydrology and hydraulic conditions.	**No Conflict.** Stormwater discharges are regulated under the National Pollutant Discharge Elimination System (NPDES) permitting program, which was established under Clean Water Act (CWA) Section 402 and is enforced in Nevada by the Nevada Division of Environmental Protection (NDEP) Bureau of Water Pollution Control (BWPC) and in California by the State Water Resources Control Board (State Water Board). An NPDES permit (e.g., General Stormwater Permit at Construction Sites [NVR100000] in Nevada and General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities [WQ 2022-0057-DWQ] in California) is required when discharging from a point source into waters of the United States (WOTUS). During Project construction, synthetic liners, stormwater diversion channels, and Regional Water Quality Control Board (RWQCB)-approved leak detection systems with both primary and secondary containment would be installed to prevent releases. Diversion structures would reroute ephemeral drainage around the facility, minimizing impacts on natural drainages. Construction best management practices (BMPs) and requirements under the Stormwater Pollution Prevention Plan (SWPPP) would be implemented to prevent stormwater

Goal/Policy	Project Consistency Analysis
	pollution and accidental releases of hazardous materials. During operation, stormwater that falls on lined areas would be directed to emergency solution storage and stormwater basins, which are sized to handle a 100-year, 24-hour storm event. As discussed further in Section 4.10, *Hydrology and Water Quality*, the proposed Project would have less-than-significant impacts associated with regional stormwater drainage, and any potentially significant impacts related to regional stormwater drainage would be adequately mitigated.
Goal IU-5: Unincorporated area residents and businesses have access to reliable power and communication systems.	**No Conflict.** Once operational, implementation of the proposed Project would require up to 25 megawatts (MW) of power. To meet this demand, the proposed Project would include the construction of a 16.5-mile overhead power line. The proposed Project would include the establishment of a reliable and efficient power supply system to ensure operational continuity, improve energy resiliency, and support long-term power needs for mining operations. A BLM long-term ROW grant would be required for the portion of the proposed Project in San Bernardino County to accommodate a 69-kilovolt (kV) overhead power line to provide grid electricity to CMM.
Transportation and Mobility Element	
Goal TM-1: Unincorporated areas served by roads with capacity that is adequate for residents, businesses, tourists, and emergency services.	**No Conflict.** No new ROW is being requested from the BLM for the primary access road, Walking Box Ranch Road, to CMM, as access is already authorized under the General Mining Law of 1872 and the approved Mine Plan of Operation (MPO) (BLM 1998). Including access road information in the Plan of Development (POD) serves to document historic and ongoing use and clarify the scope of authorized routine maintenance. Walking Box Ranch Road consists of established permitted segments and connects Walking Box Ranch to the CMM site. CMV is responsible for routine maintenance—such as grading, pothole repair, aggregate application, and dust suppression—to ensure safe and reliable access for operations and emergency response.
Goal TM-2: Roads designed and built to standards in the unincorporated areas that reflect the rural, suburban, and urban context as well as the regional (valley, mountain, and desert) context. **Policy TM-2.6:** We promote shared/central access points for direct access to roads in unincorporated areas to minimize vehicle conflict points and improve safety, especially access points for commercial uses on adjacent properties.	**No Conflict.** See response to Goal TM-1, above. Additionally, as discussed further in Section 4.15, *Transportation and Recreation*, the proposed Project would not introduce curves, slopes, walls, or other barriers that would create potential conflicts between vehicles or vehicles and stationary objects. Access road design would comply with County private road standards and allow passage of construction vehicles, including oversized trucks. In order to minimize adverse effects of Project construction traffic, the Project Applicant would implement APM-DF-4, which requires the preparation of a Construction Traffic Management Plan (CTMP) for County review and approval prior to commencement of construction activities.
Natural Resources Element	
Goal NR-1: Air quality that promotes health and wellness of residents in San Bernardino County through improvements in locally-generated emissions. **Policy NR-1.3:** We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source. **Policy NR-1.5:** We consider recommendations from the California Air Resources Board on the siting of new	**No Conflict.** As discussed further in Section 4.3, *Air Quality*, health risks must be evaluated for significance if a sensitive receptor land use is within 1,000 feet of the Project boundary (MDAQMD 2020); however, the closest sensitive receptor land use is a residential property situated more than 28,000 feet (5.3 miles) from the Project boundary. Given this considerable distance, further evaluation of potential health risks was not conducted. As discussed further in Section 4.8, *Greenhouse Gas Emissions*, neither the 2011 GHGRP nor the 2021 GHGRP

Goal/Policy	Project Consistency Analysis
sensitive land uses and exposure to specific source categories. **Policy NR-1.6:** We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions. **Policy NR-1.7:** We strive to meet the 2040 and 2050 greenhouse gas emission reduction targets in accordance with state law.	Update contains specific measures or requirements for mining projects to reduce GHG emissions. As such, the proposed Project would not conflict with the 2021 GHGRP Update.
Goal NR-2: Clean and safe water for human consumption and the natural environment. **Policy NR-2.1:** We collaborate with the state, regional water quality control boards, watermasters, water purveyors, and government agencies at all levels to ensure a safe supply of drinking water and a healthy environment. **Policy NR-2.4:** We apply federal and state water quality standards for wastewater discharge requirements in the review of development proposals that relate to type, location, and size of the proposed project in order to safeguard public health and shared water resources. **Policy NR-2.5:** We ensure compliance with the County's Municipal Stormwater NPDES (National Pollutant Discharge Elimination System) Permit by requiring new development and significant redevelopment to protect the quality of water and drainage systems through site design, source controls, stormwater treatment, runoff reduction measures, best management practices, low impact development strategies, and technological advances. For existing development, we monitor businesses and coordinate with municipalities.	**No Conflict.** Groundwater quality within CMM's planned pumping locations is relatively stable and will be adequate for long-term mining operations and there would be sufficient water supplies available to serve the proposed Project during normal, dry, or multiple dry year scenarios. The proposed Project would not be connected to a public wastewater system or cause waste that would be treated in an existing wastewater treatment plant. The CMM facilities have been furnished with sewerage to conform to the County Building and Safety Department and DEHS requirements. Construction activities that disturb one acre or more of land, as proposed for the Project Area, are required to comply with the NPDES Construction General Permit. The applicant would obtain coverage under the Construction General Permit by electronically submitting permit registration documents through the Storm Water Multiple Application and Report Tracking System (SMARTS). The applicant would provide the required documentation including a Notice of Intent, risk assessment, site map, and SWPPP prior to the commencement of construction activities.
Goal NR-6: Mineral resource zones that allow extraction industries to continue supporting the regional and national economy while minimizing negative impacts on the public and natural environment. **Policy NR-6.2:** We require and monitor mineral extraction activities to ensure that the operation and reclamation of mined lands is consistent with the State Surface Mining and Reclamation Act of 1975 (SMARA). **Policy NR-6.3:** We encourage the continued operation of existing mining facilities and streamline the permitting of new mining facilities (consistent with the Policy Plan and other local, state, and federal regulations) to establish aggregate resources that are sufficient to satisfy 50 years of county demand.	**No Conflict.** The proposed Project would extend the mine life by approximately 30 years, with 20 years of mining and processing and 10 years of reclamation. Operations would effectively quadruple the annual mining rate from 18 million tons to 80 million tons. Therefore, the Project would continue to extract minerals that would support the regional and national economy. The existing operations and reclamation of mined lands at the Project Area are currently consistent with the SMARA. The proposed Project involves the second expansion of CMM, which would continue to be consistent with the SMARA
Cultural Resources Element	
Goal CR-1: Tribal cultural resources that are preserved and celebrated out of respect for Native American beliefs and traditions. **Policy CR-1.1:** We notify and coordinate with tribal representatives in accordance with state and federal laws to strengthen our working relationship with area tribes, avoid inadvertent discoveries of Native American archaeological sites and burials, assist with the treatment and disposition of inadvertent discoveries, and explore options of avoidance of cultural resources early in the planning process. **Policy CR-1.3:** We consult with local tribes to establish appropriate project- specific mitigation measures and resource-specific treatment of potential cultural resources. We require project applicants to design projects to avoid	**No Conflict.** The County, as the lead agency under CEQA, is currently consulting with Native American Tribes pursuant to AB 52. Section 4.5, *Cultural and Tribal Cultural Resources*, will be updated once the consulting tribes have provided information about any known tribal cultural resources in the Project Area.

Goal/Policy	Project Consistency Analysis
known tribal cultural resources, whenever possible. If avoidance is not possible, we require appropriate mitigation to minimize project impacts on tribal cultural resources. **Policy CR-1.4:** We encourage coordination with and active participation by local tribes as monitors in surveys, testing, excavation, and grading phases of development projects with potential impacts on tribal resources.	
Goal CR-2: Historic resources (buildings, structures, or archaeological resources) and paleontological resources that are protected and preserved for their cultural importance to local communities as well as their research and educational potential. **Policy CR-2.3:** We strive to protect paleontological and archaeological resources from loss or destruction by requiring that new development include appropriate mitigation to preserve the quality and integrity of these resources. We require new development to avoid paleontological and archeological resources whenever possible. If avoidance is not possible, we require the salvage and preservation of paleontological and archeological resources.	**No Conflict.** As discussed further in Section 4.5, *Cultural and Tribal Cultural Resources*, two historic built-environment resources that qualify as historical resources under CEQA were identified within the utility ROW of the Project Area. These resources include the Nipton townsite (P-36-003066/CA-SBR-2066H) and two earthen levees that are associated with the larger Nipton townsite (P-36-024864/CA-SBR-2486H). The Nipton townsite (P-36-003066/CA-SBR-2066H) will be avoided through Project design; however, a portion of the earthen levees (P-36-024864/CA-SBR-2486H) will be directly impacted by the Project. As a result of this analysis, it was determined that development of the proposed Project could impact significant historical resources and that mitigation measures are necessary to reduce or avoid impacts to less-than-significant levels. Upon implementation of Mitigation Measure MM-CR-1.1, the proposed Project would not cause a substantial adverse change in the significance of historical resources pursuant to State CEQA Guidelines Section 15064.5. Additionally, nine archaeological resources have been identified within the Project Area that are eligible or assumed eligible for listing in the California Register of Historical Resources (CRHR). Avoidance and preservation in place is the preferred manner to mitigate impacts to significant archaeological resources. If CRHR-eligible sites cannot be avoided through Project design, then the proposed Project would result in direct impacts to significant archaeological resources. Ground-disturbing activities also have the potential to encounter subsurface archaeological resources that have not been previously identified in the Project Area. If archaeological resources discovered during ground-disturbing activities meet the eligibility requirements for listing on the CRHR and retain their integrity, they would be historical resources under CEQA. As a result of this analysis, it was determined that ground disturbance for the proposed Project could impact significant archaeological resources and that mitigation measures are necessary to reduce or avoid impacts to less-than-significant levels. Upon implementation of Mitigation Measure MM-CR-1.1, the proposed Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.
Hazards Element	
Goal HZ-1: Minimized risk of injury, loss of life, property damage, and economic and social disruption caused by natural environmental hazards and adaptation to potential changes in climate. **Policy HZ-1.7:** We require that underground utilities be designed to withstand seismic forces, accommodate ground settlement, and hardened to fire risk. **Policy HZ-1.12:** We require adherence to the goals, objectives and actions in the Multi-jurisdictional Hazard	**No Conflict.** The Project consists of construction of a 31.5-mile underground water pipeline, which would be designed to withstand seismic forces, accommodate ground settlement, and be hardened to fire risk. The County recently amended the *San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan* (MJHMP) in 2022, which presents the County's planned emergency response to natural disasters, technological incidents, and natural security threats (County of San Bernardino 2022). The purpose of the

Goal/Policy	Project Consistency Analysis
Mitigation Plan and subsequent amendments to reduce and mitigate damages from hazards in the county. **Policy HZ-1.15:** We coordinate with CAL FIRE, California's Office of Emergency Services, and other local fire districts to identify strategies that ensure the maintenance and reliability of evacuation routes potentially compromised by wildfire, including emergency evacuation and supply transportation routes.	MJHMP is to improve coordination between all County facilities and personnel in an effort to minimize or eliminate emergency risks. The MJHMP creates an emergency management response plan by creating an organizational structure and identifying the responsibilities of each County agency during an emergency event or disaster. No revisions to the MJHMP would be required as a result of the proposed Project. Federal, State, and local authorities require CMV to implement an Emergency Response Plan to respond to and manage emergencies. During Project operation, access roads would be maintained and would not interfere with emergency ingress or egress routes. Walking Box Ranch Road, the primary access route to CMM, is prone to flooding. If this occurs and the road becomes inaccessible, Hart Mine Road will serve as the alternative emergency evacuation route. Access roads within the Project Area would be constructed according to San Bernardino County Fire Protection District (SBCoFD) requirements. According to the California Department of Forestry and Fire Protection (CAL FIRE), the Project Area is not in or near any State Responsibility Areas (SRAs) for fire protection, or within lands classified as a Very High Fire Hazard Severity Zone (FHSZ) (CAL FIRE 2026). The Project design, operation, and maintenance would comply with federal, State, and local worker safety and fire protection codes and regulations, which would decrease the potential for fire events. The proposed Project would be required to comply with the San Bernardino County Fire Code, which implements regulations established in the 2022 California Fire Code in addition to standards specific to the County.
Goal HZ-2: People and the natural environment protected from exposure to hazardous materials, excessive noise, and other human-generated hazards. **Policy HZ-2.2:** We maintain up-to-date databases of the storage, use, and production of hazardous materials, based on federally- and state-required disclosure and notification, to appropriately respond to potential emergencies. **Policy HZ-2.8:** We limit or restrict new noise sensitive land uses in proximity to existing conforming noise generating uses and planned industrial areas.	**No Conflict.** Project construction would occur according to all applicable local standards established by the County and federal and State health and safety requirements, including California Division of Occupational Safety and Health Administration (Cal/OSHA) requirements, the Hazardous Waste Control Law, the California Accidental Release Program (CalARP), and the California Health and Safety Code (HSC). All hazardous materials used during Project construction would comply with applicable regulations. Similar to Project construction, hazardous materials transported to the Project Area during Project operation would occur in U.S. Department of Transportation (DOT)-certified vehicles and in compliance with applicable requirements of the DOT, California Highway Patrol (CHP), and California Department of Motor Vehicles (DMV). Hazardous wastes are stored, recycled, or disposed of according to rules and regulations implemented by the County Department of Environmental Health Services (DEHS) and the California Department of Toxic Substances Control (DTSC) and that are acceptable to the BLM and County. Fuels and concentrated sodium cyanide (CN) are the main hazardous materials that would be stored on-site. Fuels and oils are stored within tanks in the mobile maintenance area on-site. These tanks are double-walled and installed within spill containment areas to catch and contain potential spills and leaks. Aboveground storage tank (AST) fuel tanks are permitted through the SBCoFD, are included on the Hazardous Materials Business Plan (HMBP), and conform with the Aboveground Petroleum Storage Act (APSA). CN is stored in vertical steel storage tanks at the Process Plant, which is within a concrete secondary containment area to catch and contain potential spills and leaks. Pebble lime and cement, which are used as bulk dry reagents during ore agglomeration, are stored in vertical silos. Caustic soda and hydrochloric acid exist in small quantities and are reused and stored in the Carbon in Column (CIC) tank secondary containment area. Explosives and other blasting agents would be stored in

Goal/Policy	Project Consistency Analysis
	facilities constructed and maintained according to federal and local permit requirements. The storage locations of hazardous materials and chemical reagents transported to the Project Area are identified in the *Castle Mountain Mine Plan of Operation & Reclamation Plan – Amendment* (CMV 2025). Additionally, the nearest noise sensitive land uses are over 5 miles from the Project Area. As such, implementation of the proposed Project would not result in the production of excessive noise for noise sensitive land uses.
Personal and Property Protection Element	
Goal PP-3: Reduced risk of death, injury, property damage, and economic loss due to fires and other natural disasters, accidents, and medical incidents through prompt and capable emergency response. **Policy PP-3.4:** We proactively mitigate or reduce the negative effects of fire, hazardous materials release, and structural collapse by implementing the California Fire Code, adopted with County amendments.	**No Conflict.** Project construction, including grading, filling, building construction, and mine development, would result in the conversion of burnable fuel model types to non-burnable, thereby decreasing the likelihood of wildfire resulting in soil hydrophobicity or the burning of soil-stabilizing vegetation within the Project Area. The Project Area is also equipped with 3,000 gallons of water for dust and fire suppression, and staff are trained in fire response and equipped with fire extinguishers. Hazardous wastes are stored, recycled, or disposed of according to rules and regulations implemented by the County DEHS and the DTSC and that are acceptable to the BLM and County. Additionally, the County recently amended the MJHMP in 2022, which presents the County's planned emergency response to natural disasters, technological incidents, and natural security threats (County of San Bernardino 2022). The purpose of the MJHMP is to improve coordination between all County facilities and personnel in an effort to minimize or eliminate emergency risks. The MJHMP creates an emergency management response plan by creating an organizational structure and identifying the responsibilities of each County agency during an emergency event or disaster. No revisions to the MJHMP would be required as a result of the proposed Project.

The proposed Project includes a request for water and power utilities to be installed within existing ROWs to support the expansion. The Nevada Department of Transportation (NDOT) holds an existing ROW (NVNV105896749) along Nevada State Route 164, which is 400 feet wide. Within the analysis area, this NDOT ROW extends approximately 11.65 miles and encompasses a total of 562 acres. Additionally, near the town of Nipton, California, an ROW was authorized for the Union Pacific Railroad (UPRR) under the General Railroad Right-of-Way Act of 1875 (43 United States Code Sections 934–939). These ROWs, broadly granted in the early 1900s, do not always have a designated corridor width; however, the analysis area only crosses the UPRR ROW for 61 feet. Construction, operations and maintenance, and decommissioning activities would occur within both of these ROWs over the life of the proposed Project. The ROWs have been aligned for compatible uses, and the proposed temporary and permanent ROWs for the water line would not alter the use or access to the NDOT or UPRR ROWs. Proper coordination with the appropriate agencies would be conducted prior to any ground-disturbing activities.

Previous EIS/EIR documents for CMM (BLM 1990, BLM 1997) concluded that mining operations would not create land use conflicts within the Mine Area. This finding remains valid for the proposed Project. Although the expansion increases both the Mine Area and the extent of temporary and permanent disturbance, these changes do not affect existing mining claims within the plan boundary.

Conclusion

The proposed Project would not cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. As demonstrated above, implementation of the proposed Project would not result in any land use policy conflicts that would cause a direct, indirect, or reasonably foreseeable physical change in the environment. Therefore, *no impact* would occur.

Impact LU-2
The Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

4.11.6 Cumulative Impacts

IMPACT LU-3: THE PROJECT WOULD NOT RESULT IN CUMULATIVELY CONSIDERABLE IMPACTS ASSOCIATED WITH LAND USE AND PLANNING. *(NO IMPACT)*

As stated above, the Project would have no impact related to the physical division of an established community (see Impact LU-1) and no impact associated with any land use policy conflicts (see Impact LU-2). Therefore, the Project would not contribute to cumulative impacts related to this issue.

Additionally, each related project identified in Chapter 3, *Environmental Setting*, would be required to demonstrate consistency with applicable land use plans, policies, and regulations. Therefore, Project impacts associated with land use and planning would not be cumulatively considerable, and *no impact* would occur.

Impact LU-3 (Cumulative Impacts)
The Project would not result in cumulatively considerable impacts associated with land use and planning.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

4.12 NOISE AND VIBRATION

This section of the EIR analyzes potential short-term and long-term impacts related to noise and ground-borne vibration resulting from the implementation of the proposed Project. The analysis is based on site-specific field measurements, established acoustical modeling methodologies, and applicable federal, state, and local regulations, consistent with Appendix G of the State CEQA Guidelines.

4.12.1 Existing Conditions

The Project Area is in a remote area of the historic Hart Mining District in San Bernardino County, surrounded by undeveloped desert land. The CMM is an existing open-pit gold mine/heap-leach operation administered by the BLM California Needles Field Office (NFO). The proposed Project involves the second expansion of the CMM. Sespe Consulting, Inc. (Sespe) completed continuous long-term (24-hour) and short-term (1-hour) noise monitoring at representative locations within and near the Project Area from August 4 to August 6, 2021, to establish baseline ambient noise conditions and characterize noise associated with existing CMM operations (Sespe 2024; EIR Appendix 10). As documented in Sespe's noise monitoring report, noise sources in the Project vicinity primarily include CMM's existing operations, as well as occasional aircraft flyovers and natural sounds (e.g., wind, wildlife). The existing operational noise level at the center of the mine is approximately 55-56 dBA during active mining. Under non-operational conditions, background noise levels within the Project Area are characteristic of a remote desert environment and generally range in the mid30 dBA range, consistent with rural ambient sound levels documented by USEPA and FTA guidance.

4.12.1.1 Noise Fundamentals

This section provides a brief overview of noise fundamentals, noise assessment components, and examples of sound levels from a variety of sources.

DEFINITION OF ACOUSTICAL TERMS

Noise is commonly defined as sound that is undesirable because it interferes with speech communication and hearing, causes sleep disturbance, or is otherwise annoying. The following acoustical terms are used throughout this analysis:

- Ambient sound level is defined as the composite of noise from all sources near and far, i.e., the normal or existing level of environmental noise at a given location.
- Decibel (dB) is the physical unit commonly used to measure sound levels. Technically, a dB is a unit of measurement that describes the amplitude of sound equal to 20 times the base 10 logarithm of the ratio of the reference pressure to the sound of pressure, which is 20 micropascals (μPa).
- Sound measurement is further refined by using an A-weighted decibel (dBA) scale, which more closely measures how a person perceives different frequencies of sound; the A-weighting reflects the sensitivity of the ear to low or moderate sound levels.
- The equivalent noise level (L_{eq}) is the energy average A-weighted noise level during the measurement period.
- The root-mean-squared maximum noise level (L_{max}) characterizes the maximum noise level as defined by the loudest single noise event over the measurement period.

- Day-night average noise level (L_{dn}) is the A-weighted equivalent sound level for a 24-hour period with an additional 10-dB weighting imposed on the equivalent sound levels occurring during nighttime hours (10:00 p.m.–7:00 a.m.).
- Community noise equivalent level (CNEL) is a measure of the 24-hour average noise level that penalizes noise that occurs during the evening and nighttime hours, when noise is considered more disturbing. To account for this increase in disturbance, 5 dBA is added to the hourly L_{eq} during the evening hours (7:00 p.m.–10:00 p.m.) and 10 dBA is added during the nighttime hours (10:00 p.m.–7:00 a.m.).
- Percentile-exceeded sound level (L_n) describes the sound level exceeded for a given percentage of a specific period.

SOUND LEVELS OF REPRESENTATIVE SOUNDS AND NOISES

The USEPA has devised an index for evaluating the impact of noise originating from various sources on residential areas. In tranquil rural settings during nighttime, noise typically registers between 32 and 35 dBA. In urban areas with low noise levels during the nighttime, readings typically fall within the range of 40 to 50 dBA. In bustling urban areas during daylight hours, noise levels can frequently escalate to as high as 70 to 80 dBA. Noise levels exceeding 110 dBA are considered unmanageable, while continuous exposure to levels exceeding 80 dBA can lead to hearing impairment. Levels surpassing 70 dBA are often linked to disruptions in tasks, and noise levels ranging from 50 to 55 dBA typically correspond to raised voices during a regular conversation (USEPA 1974).

Criteria have been established to estimate an individual's perception to increases in sound (Table 4.12-1). In general, an average person perceives an increase of 3 dBA or less as barely perceptible. An increase of 10 dBA is perceived as a doubling of the sound.

Table 4.12-1. Average Human Ability to Perceive Changes in Sound Levels

Increase in Sound Level (dBA)	Human Perception of Sound
2–3	Barely perceptible
5	Readily noticeable
10	Doubling of the sound
20	Dramatic change

Source: Bolt, Beranek and Newman, Inc. (1973)

Note: Perception levels apply to noise experienced in an urban or natural environment, not in a controlled auditory lab.

Table 4.12-2 presents sound levels for some common noise sources.

Table 4.12-2. Sound Levels of Representative Sounds and Noises

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet fly-over at 1,000 feet		
	100	
Gas lawn mower at 3 feet		
	90	
Diesel truck at 50 feet at 50 miles per hour		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Federal Transit Administration (FTA) (2018).

NOISE ASSESSMENT COMPONENTS

A noise assessment is based on the following components: a sound-generating source, a medium through which the source transmits, the pathways taken by these sounds, and an evaluation of the proximity to noise receptors. Soundscapes are affected by the following factors:

1. **Source:** The sources of sound are any generators of small back-and-forth motions (i.e., motions that transfer their motional energy to the transmission path where it is propagated). The acoustic characteristics of the sources are very important. Sources must generate sound of sufficient strength, approximate pitch, and duration so that the sound may be perceived and can cause adverse effects, compared with the natural ambient sounds.
2. **Transmission path or medium:** The transmission path or medium for sound or noise is most often the atmosphere (i.e., air). For the noise to be transmitted, the transmission path must support the free propagation of the small vibratory motions that make up the sound. Atmospheric conditions (e.g., wind speed and direction, temperature, humidity, precipitation) influence the attenuation of sound. Barriers and/or discontinuities (e.g., existing structures, topography, foliage, ground cover, etc.) that attenuate the flow of sound may compromise the path. For example, sound will travel very well across reflective surfaces such as water and pavement but can attenuate across rough surfaces (e.g., grass, loose soil).

3. **Proximity to noise-sensitive receptors:** A noise-sensitive receptor is usually defined as a location where a state of quietness is a basis for use or where excessive noise interferes with the normal use of the location. Typical receptors include residential areas, monuments, schools, hospitals, churches, and libraries.

4.12.1.2 Ground-Borne Vibration Fundamentals

This section describes basic concepts related to ground-borne vibration. Ground-borne vibration is a small, rapidly fluctuating motion transmitted through the ground. When seismic waves are perceptible (when they can be felt), they are called ground vibrations. Seismic waves are divided into the following two classes:

1. Body waves travel across a rock mass, penetrating down into its interior. There are two forms of body waves: compressional waves and shear waves. The compressional wave (P-wave) is a push-pull wave that produces alternating compression and dilatation in the direction of wave travel. The shear wave (S-wave) is produced when the medium particles oscillate perpendicular to the propagation direction.
2. Surface waves (L-waves) travel over the surface of a rock mass but do not travel through it. Surface waves are generated by body waves that are constrained by physical and geometrical conditions from traveling into the rock mass. Surface waves are the large energy carriers and account for the largest ground motions. There are two fundamental types of surface waves: Rayleigh and Love waves (Q-waves), which represent the energy measured by a seismograph and are the main component of vibration when examining ground vibration from blasting activities.

The ground vibration from surface waves is measured as the velocity of motion, or how many inches per second the ground is moving. The motion of the ground particles (vibration) happens in three dimensions: radial, transverse, and vertical. During vibration, each particle has a velocity, and the maximum velocity is referred to as the peak particle velocity (PPV). The resulting vector of all three components (i.e., radial, transverse, and vertical) combined is referred to as peak vector sum (PVS).

The industry standard is to use the readings of the PPV as the metric to measure the intensity of the ground vibration. In reporting, the maximum measurement of any of the three components is used rather than the resulting PVS.

GROUND VIBRATION TERMS

Ground vibration is described using the following terms:

- **Acceleration:** the rate at which particle velocity changes
- **Displacement:** the farthest distance that the ground moves before returning to its original position
- **Frequency:** the number of oscillations per second that a particle makes when under the influence of seismic waves
- **Hertz (Hz):** the unit of acoustic or vibration frequency representing cycles per second
- **PPV:** the greatest particle velocity associated with an event
- **PVS:** the square root of the sum of the squares of the individual PPV values in all three vector directions
- **Particle velocity:** the velocity at which the ground moves

- **Propagation velocity:** the speed at which a seismic wave travels from the blast
- **Root mean square (RMS):** the square root of the mean-square value of an oscillating waveform, where the mean-square value is obtained by squaring the value of amplitudes at each instant of time and then averaging these values over the sample time
- **Vibration velocity level (LV):** 10 times the common logarithm of the ratio of the square of the amplitude of the RMS vibration velocity to the square of the amplitude of the reference RMS vibration velocity

GROUND VIBRATION AND STRUCTURE DAMAGE

Ground vibrations have the capacity to induce lasting alterations in the positions of the constituent particles making up structures. These enduring alterations, which are undesirable, are informally termed as damage. The magnitude of the vibration, signifying higher ground movement speeds, amplifies the likelihood of these lasting shifts in particle positions within structures. Table 4.12-3 provides an overview of the impacts of PPVs on structures and materials.

Table 4.12-3. Vibration Damage Potential Threshold Criteria

	Maximum PPV (inches/second)	
Structure and Condition	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Note: Modified from Table 19, *Guideline Vibration Damage Potential Threshold Criteria* (California Department of Transportation [Caltrans] 2020).

While ground vibrations can potentially lead to structural damage, observable damage from vibrations often manifests as visible cracks in materials like drywall, plaster, and exterior surfaces such as grout and stucco. Important to note is that such damage may or may not signify structural issues. Cosmetic damage of this nature can also result from factors like settling, temperature fluctuations, and the natural aging of a building. Consequently, the presence of a few hairline cracks in a house does not necessarily imply that vibrations are the root cause.

GROUND VIBRATION AND HUMAN PERCEPTION

Beyond concerns related to structural damage, ground vibrations can, under specific conditions, startle or irritate individuals. Assessing human reactions to vibration is challenging due to variations in individual perception. Humans can detect ground vibrations at lower levels than those that can potentially affect structures negatively. The human body is capable of distinctly sensing ground vibrations as low as 0.1 inch per second, and some individuals may perceive even lower levels.

The reason the general public might find ground vibration annoying is that it represents an A-Cultural Vibration, an experience to which people are unaccustomed. Table 4.12-4 indicates the average human response that may be anticipated to vibration when the person is at rest, situated in a quiet environment.

Table 4.12-4. Human Response to Ground Vibration

Average Human Response	PPV (inches/second)
Barely to distinctly perceptible	0.020–0.10
Distinctly to strongly perceptible	0.10–0.50
Strongly perceptible to mildly unpleasant	0.50–1.00
Mildly to distinctly unpleasant	1.00–2.00
Distinctly unpleasant to intolerable	2.00–10.00

Source: California Department of Transportation [Caltrans] (2020).

VIBRATION ASSESSMENT COMPONENTS

Vibration energy extends out as it travels through the ground, causing the vibration level to reduce with increasing distance from the source. High-frequency vibrations decrease much more rapidly than low frequencies, so low frequencies tend to dominate the spectrum at large distances from the source. The propagation of ground-borne vibration is not simple to model due to geological differences in the medium (ground). Geological factors that may influence the propagation of ground-borne vibration include the following:

- **Soil conditions:** The type of soil has a strong influence on the propagation of ground-borne vibration. Hard, dense, and compacted soil, stiff clay soil, and hard rock transfer vibration more efficiently than loose, soft soils, sand, or gravel.
- **Depth to bedrock:** Shallow depth to bedrock provides more efficient propagation of ground-borne vibration. Shallow bedrock concentrates the vibration energy near the surface, reflecting vibration waves that would otherwise continue to propagate farther down into the earth back toward the surface.
- **Soil strata:** Discontinuities in the soil layering can produce diffractions or channeling effects that impact the propagation of vibration over long distances.
- **Frost conditions:** Seismic waves typically propagate more efficiently in frozen soils than in unfrozen soils.
- **Water conditions:** The amount of moisture in the soil has an impact on vibration propagation. The depth of the water table in the path of the propagation also has substantial effects on ground-borne vibration levels.

Vibration levels can also be influenced by conditions at both the source and receptor locations. For instance, the way the source is linked to the ground (e.g., direct contact or through a structure) or whether the source is underground as opposed to on the surface will determine the extent of energy transferred into the ground. Similarly, at the receptor location, variables like building construction and the type of foundation can influence vibration levels.

4.12.1.3 Sensitive Noise Receptors

Noise at various intensities can disrupt sleep, focus, and communication and might lead to stress, both physiological and psychological, and even hearing damage. As a result, certain land uses known as sensitive receptors are seen as more vulnerable to environmental noise than others. According to Chapter 83.01.080 (*General Performance Standards, Noise*) of the County Development Code, residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses are considered noise-sensitive land uses (County of San Bernardino 2014). Residential dwellings are of primary concern

because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose.

As the Project Area is within the Hart Mining District, surrounding land use is limited to vacant, undeveloped desert land. The nearest regulated human noise-sensitive receptors, as defined by the San Bernardino County Development Code and CEQA practice, are existing residences located approximately 5 miles south of the Project Area boundary. Due to the substantial distance and intervening topography, project-related noise would attenuate to levels well below audibility at these locations.

Although wilderness areas and wildlife resources occur in the vicinity of the Project Area, these areas are not considered noise-sensitive receptors under Appendix G of the State CEQA Guidelines. Potential effects of project-related noise on wildlife are addressed in Section 4.4, *Biological Resources*, of this EIR. One wildlife water source (drinker) is located within the central portion of the mine site, and a second drinker was recently added at a more remote location north of the mine pits and away from human activity. Sespe also observed the presence of bighorn sheep during the baseline noise monitoring conducted at the Project Area.

4.12.1.4 Existing Sound Conditions

To determine the baseline or ambient sound levels experienced within and near the Project Area, continuous long-term and short-term sound monitoring was conducted at the Project Area from August 4 to August 6, 2021, to document the acoustic environment in the area surrounding the proposed Project.

To quantify the existing noise environment, and characterize the noise levels generated by the existing industrial/mining activities, two consecutive long-duration (24-hour) and nine simultaneous short-duration (1-hour) noise measurements were collected in locations within and on the perimeter of the Project Area/operational areas to provide the existing ambient noise levels near and at the Project Area (Table 4.12-5). The measurements were obtained using two Quest Technologies Soundpro SE/DL sound level meters programmed for “A-weighted” sound and “slow” response. The meters were calibrated prior to and following each measurement, and data were logged in 1-minute increments. As shown below in Table 4.12-5, background noise levels are reported to be in the mid-30 dBA range (Monitoring Locations 2 and 3); existing CMM operations with background noise is reported to be in the low-50 dBA range (Monitoring Location 1); and noise levels associated with haul truck activity is reported to range from approximately 50 dBA to 63 dBA (Monitoring Locations 8, 9, and 10).

Table 4.12-5. Noise Monitoring Summary

Monitoring Location	Duration	Noise Sources Captured	Average (Leq)
1	24-Hour	Average Noise Levels (background and existing CMM operations)	53.2
	24-Hour		50.5
2	1-Hour	Background, Heap Leach Pad Formation	34.6
3	1-Hour	Background, Misc. Light-Duty Vehicles	35.3
4	1-Hour	Haul Truck Activity	64.1
5	1-Hour	Heap Leach Pad Formation, Haul Truck Activity	62.5
6	1-Hour	Gold Processing Plant, Power Generation	58.2
7	1-Hour	Excavation	46.1
8	1-Hour	Excavation, Haul Truck Activity	59.6
9	1-Hour	Excavation, Haul Truck Activity, Misc. Mobile Equipment	63.1
10	1-Hour	Excavation, Haul Truck Activity, Misc. Mobile Equipment	49.2

Source: Sespe (2024).

4.12.1.5 Existing Ground-Borne Vibration Levels

The primary ground-borne vibration sources at the CMM are current mining operations and vehicular traffic. However, based on qualitative Project Area observations, Sespe found the existing vibration environment extremely low as no ground movement occurred during existing operations. Based on Federal Transit Administration (FTA) reference data, it is unusual for vibration from traffic sources to be perceptible, as trucks typically generate vibration velocity levels of approximately 63 vibration velocity decibels (VdB) at 50 feet (FTA 2018). Normally, 75 VdB is defined as the dividing line between barely perceptible and distinctly perceptible (FTA 2018). Existing vibration levels are not expected to be noticeable at off-site locations.

4.12.2 Regulatory Setting

4.12.2.1 Federal

U.S. ENVIRONMENTAL PROTECTION AGENCY

The USEPA has recognized the relationship between noise level and human response and determined that exposure to an L_{eq} of 70 dBA over the course of a 24-hour period will result in partial hearing loss. Conversely, interference with activity and annoyance will not occur if exterior noise levels are maintained at an L_{eq} of 55 dBA and interior levels do not exceed 45 dBA. While these thresholds provide valuable guidance for planning and design, they are not considered land use planning criteria, as they do not account for economic costs, technical feasibility, or community-specific needs.

The USEPA further recommends a basic goal of 55 dBA L_{dn} for exterior residential noise intrusion. However, other federal agencies, recognizing the challenges associated with achieving this target and considering their unique programmatic requirements, have adopted a standard of 65 dBA L_{dn}. At 65 dBA L_{dn}, interference is minimized and annoyance levels remain low.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

The Occupational Safety and Health Act of 1970 established the Occupational Safety and Health Administration (OSHA) to promote safe and healthful working environments by setting and enforcing standards, and providing training, outreach, education, and assistance. Under this act, employers are required to protect employees from the effects of noise exposure when sound levels exceed 90 dBA over an eight-hour work period. If controls are insufficient to reduce noise levels to acceptable limits, the use of personal protective equipment is mandated. Furthermore, employers must implement a Hearing Conservation Program when employee noise exposure meets or exceeds an eight-hour time-weighted average of 85 dBA. The requirements for this program include regular area and personal noise monitoring, conducting and evaluating audiograms, providing hearing protection, annual employee training, and maintaining appropriate records.

FEDERAL TRANSIT ADMINISTRATION CONSTRUCTION GUIDELINES

There are no federal standards or regulations that specifically address environmental noise associated with the construction or operation of the proposed Project. Currently, federal agencies have not established standards or limits pertaining to potential building damage resulting from ground-borne vibration.

4.12.2.2 State

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The fundamental environmental regulatory framework in California is established in CEQA and its associated implementing guidelines (State CEQA Guidelines). Under these regulations, projects that may result in adverse environmental impacts are required to undergo a comprehensive environmental review process, which includes an analysis of potential noise impacts.

CALIFORNIA NOISE CONTROL ACT OF 1973

Sections 46000 through 46080 of the California Health and Safety Code, collectively recognized as the California Noise Control Act of 1973, identify excessive noise as a potential hazard to public health and welfare. This act states that exposure to certain noise levels can lead to physiological, psychological, and economic harm. It further observes that urban, suburban, and rural areas are subject to increasing and persistent noise exposure. The California Noise Control Act assigns the state the responsibility to safeguard the health and welfare of its residents by controlling, preventing, and mitigating noise. It is the policy of the State of California to ensure that all residents are provided with an environment free from noise that may compromise their health or well-being.

CALIFORNIA DEPARTMENT OF TRANSPORTATION

The Caltrans *Transportation and Construction Vibration Guidance Manual* recommends a threshold of 0.5 inches per second (ips) PPV to prevent structural damage to typical newer residential buildings exposed to ongoing or frequently occurring groundborne vibration (Caltrans 2020). For short-term vibration events, such as blasting, the recommended damage threshold increases to 1.0 ips PPV for the same type of newer structures. More conservative thresholds apply to older buildings—0.3 ips PPV for continuous or intermittent vibration sources and 0.5 ips PPV for short-term vibration events. Regarding human sensitivity, Caltrans indicates that occupants exposed to continuous groundborne vibration levels between 0.2 and 0.6 ips PPV are likely to experience annoyance or discomfort, which may be considered a significant impact. While these Caltrans thresholds are not regulatory requirements, they are often used as quantitative standards when local regulations do not specify vibration limits. These reference vibration levels are commonly applied to mining/industrial operations.

4.12.2.3 Local

SAN BERNARDINO COUNTY COUNTYWIDE POLICY PLAN

The CWP (County of San Bernardino 2020a) seeks to minimize community exposure to elevated noise levels through a series of objectives, guidelines, and initiatives that inform land use decisions, particularly for activities commonly associated with significant noise generation. Although the proposed Project Area is on BLM property, the nearest identified Noise-Sensitive Area (NSA) is in San Bernardino. As such, the County's guidelines were used to evaluate noise and vibration impacts associated with the proposed Project. The County Policy Plan, a component of the CWP, contains the long-term goals and policies that will guide County decisions, investments, and improvements toward achieving the countywide vision. The County Policy Plan represents a unique approach to county planning. It serves as the County's General Plan for the unincorporated areas, which is mandated by state law, but it also includes policy direction for adult and child supportive services, healthcare, public safety, and other regional services the County administers in both incorporated and unincorporated areas. Relevant goals and policies from the Hazards Element of the County Policy Plan are summarized in Table 4.12-6 (County of San Bernardino 2020b).

Table 4.12-6. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Hazards Element	
Goal HZ-2	**Human-Generated Hazards.** People and the natural environment protected from exposure to hazardous materials, excessive noise, and other human-generated hazards.
Policy HZ-2.8	**Proximity to noise-generating uses.** The County limits or restricts new noise-sensitive land uses in proximity to existing conforming noise-generating uses and planned industrial areas.
Policy HZ-2.9	**Control sound at the source.** The County prioritizes noise mitigation measures that control sound at the source before buffers, soundwalls, and other perimeter measures.

SAN BERNARDINO COUNTY DEVELOPMENT CODE

Noise Standard

County Development Code Section 83.01.080, *Noise*, establishes standards regarding acceptable noise levels for noise-sensitive and noise-generating land uses. For affected land uses receiving noise, the noise standard for residential uses must not exceed 55 dBA L_{eq} between 7:00 a.m. and 10:00 p.m., and 45 dBA L_{eq} between 10:00 p.m. and 7:00 a.m. Stationary noise sources must not exceed 55 dBA L_{eq} for professional services, 60 dBA L_{eq} for other commercial uses, and 70 dBA L_{eq} for industrial uses at any time. Locations where ambient noise levels surpass these thresholds are classified as noise-impacted areas. The County Development Code provides an exemption for construction-related noise, permitting such activities only between 7:00 a.m. and 7:00 p.m., with construction prohibited on Sundays and federal holidays. The County Development Code also has noise level standards for other structures, including areas for manufacturing, assembly, testing, and warehousing, with a 12-hour equivalent interior sound level (dBA L_{dn}) of 65 dBA.

Vibration Standard

County Development Code Section 83.01.090, *Vibration*, specifies standards for permissible vibration levels. According to the vibration standards, ground vibrations detectable without the use of instruments are prohibited at or beyond property boundaries. Additionally, vibrations resulting in a particle velocity of

0.20 inches per second or greater, as measured at or beyond the property boundary, are not permitted. Temporary activities such as construction, maintenance, repair, or demolition conducted between 7:00 a.m. and 7:00 p.m. are exempt from these vibration restrictions, except on Sundays and federal holidays, when such activities are not allowed.

4.12.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to noise and vibration if the project would:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b) Generation of excessive ground-borne vibration or ground-borne noise levels.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

Each of these thresholds is discussed under Section 4.12.5, *Project-Specific Impacts and Mitigation Measures*, below.

4.12.4 Impact Assessment Methodology

This analysis focuses on the potential change in the current noise levels resulting from the implementation of the proposed Project. Both Project construction and operation would generate noise and ground-borne vibration. Short-term construction noise, long-term operational noise, and ground-borne vibration impacts were evaluated using a combination of site-specific monitoring data, published reference noise levels, and recognized acoustical modeling and vibration assessment methodologies that are widely accepted for CEQA analyses and have been upheld in judicial review.

To calculate the noise levels associated with the proposed Project, average noise levels (Leq) at a reference distance of 50-feet (i.e., distance from noise source to monitor location) were determined for the following operations: 1) Excavation/Open-Pit Mining; 2) Haul Road/Truck Activity; 3) Heap Leach Pad Formation; 4) Gold Processing Plant; 5) Overburden Storage/Pile Formation; 6) Crushing Plant; and 7) Comminution Plant (mill). The operational reference noise levels summarized in Table 4.12-7 for both current (Phase I) and future (Phase II). These activities were modelled using the SoundPLAN Essential 5.0 computer noise propagation model software. Specifically, noise contour maps were generated for both the existing Phase I operations as well as the fully built-out Phase II facility to provide approximations for how the proposed Project operations and related changes to the onsite topography would potentially affect the noise environment over the life of the proposed Project. Source-receptor geometry, noise source data and terrain information were input into the model. SoundPLAN calculates noise levels based on the International Organization for Standardization's (ISO) "ISO 9613-2" standard for outdoor sound propagation from industrial sources (Sespe 2024; see EIR Appendix 10).

Although Phase II operations are not expected to change the groundborne vibration environment compared to existing conditions, reference vibration levels were taken from both the FTA Transit Noise and Vibration Impact Assessment (FTA 2006) and the Caltrans Transportation and Construction Vibration Guidance Manual (Caltrans 2020) both of which are commonly applied to mining/industrial operations.

Employing the assumptions given for Project construction and operation, the predicted noise and vibration level results are outlined below.

4.12.4.1 Short-Term Construction Noise Criteria

County Development Code Section 83.01.080 provides an exemption for construction noise from numeric noise standards when activities occur between 7:00 a.m. and 7:00 p.m. Notwithstanding this exemption, due to the remote location of the Project Area and the absence of sensitive receptors within several miles, construction noise would attenuate to levels that would be imperceptible at the nearest noise-sensitive receptors. The proposed Project would be consistent with these regulations and would restrict construction to the permitted hours. Additionally, no nighttime construction would occur. The County Policy Plan and Development Code do not set specific numeric limits for acceptable construction noise levels at impacted receiver sites. Additionally, the County's noise criteria only apply to human-sensitive receptors, such as residential properties. As mentioned above, the closest sensitive receptors to the Project Area are residences located approximately five miles south of the Project Area. As such, the proposed Project would be consistent with the County's Development Code.

4.12.4.2 Short-Term Construction Vibration Criteria

County Development Code Section 83.01.090 provides an exemption for construction vibration from noise level standards, as long as the vibration takes place between 7:00 a.m. and 7:00 p.m., except on Sundays and federal holidays. The proposed Project would be consistent with these regulations and would restrict construction to the permitted hours. The County Policy Plan and Development Code do not set specific numeric limits for acceptable construction vibration levels at impacted receiver sites. Additionally, the County's vibration criteria only apply to sensitive receptors, such as residential properties. As mentioned above, the closest sensitive receptors to the Project Area are residences located approximately five miles south of the Project Area. As such, the proposed Project would be consistent with the County's Development Code.

4.12.4.3 Long-Term Operational Noise Criteria

County Development Code Section 83.01.080 mandates that noise criteria only apply to sensitive receptors, such as residential properties. For sensitive receptors receiving noise, the noise standard for residential uses must not exceed 55 dBA L_{eq} between 7:00 a.m. and 10:00 p.m., and 45 dBA L_{eq} between 10:00 p.m. and 7:00 a.m. Stationary noise sources must not exceed 70 dBA L_{eq} for industrial uses at any time. As mentioned above, the closest sensitive receptors to the Project Area are residences located approximately five miles south of the Project Area. As a result, long-term operational noise associated with the proposed Project would not result in a measurable increase above existing ambient noise levels at the nearest sensitive receptors and would not exceed applicable County noise standards. Therefore, operational noise impacts would be less than significant.

4.12.5 Project-Specific Impacts and Mitigation Measures

a) Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

IMPACT N-1: DURING PROJECT CONSTRUCTION, THE PROJECT WOULD NOT GENERATE A SUBSTANTIAL TEMPORARY OR PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN EXCESS OF ESTABLISHED STANDARDS. *(LESS THAN SIGNIFICANT)*

Short-Term On-Site Construction Activities

Noise generated by the construction of the proposed Project would be temporary and vary throughout each day, depending on the equipment in use and the activity performed. Equipment that would be in use during construction may include, but is not limited to, graders, backhoes, rubber-tired dozers, loaders, cranes, forklifts, pavers, rollers, and air compressors. Typically, construction equipment operates in cycles of full power and low power, resulting in average noise levels over time that are less than the maximum noise level. The average sound level of construction activity also depends on the amount of time that the equipment operates and the intensity of construction activities. County Development Code Section 83.01.080 mandates that noise criteria only apply to sensitive receptors, such as residential properties. For sensitive receptors receiving noise, the noise standard for residential uses must not exceed 55 dBA L_{eq} between 7:00 a.m. and 10:00 p.m., and 45 dBA L_{eq} between 10:00 p.m. and 7:00 a.m. Stationary noise sources must not exceed 70 dBA L_{eq} for industrial uses at any time. As mentioned above, the closest sensitive receptors to the Project Area are residences approximately five miles south from the Project Area; therefore, Project construction noise would be imperceptible from the nearest sensitive receptors. Additionally, the proposed Project would be consistent with County Development Code Section 83.01.080, which provides an exemption for construction noise from noise level standards, as long as the noise takes place between 7:00 a.m. and 7:00 p.m., except on Sundays and federal holidays. Construction of the proposed Project would be consistent with applicable standards of the County Development Code as construction would occur during the permitted hours. Therefore, the proposed Project would not result in a substantial temporary or permanent increase in ambient noise levels, and noise impacts would be *less than significant*. No mitigation measures are required.

Short-Term Off-Site Construction Activities

The proposed Project would require construction of the 31.5-mile Ivanpah Water Pipeline and a 16.5-mile 69-kilovolt (kV) electrical transmission line. Construction would primarily occur along existing corridors, including SR-164 and the existing access road to the mine, which would minimize new disturbance and generally confine construction activities to areas already influenced by transportation-related noise.

Temporary construction noise would be generated by trenchers, excavators, haul trucks, and support equipment. Typical construction equipment noise levels range from approximately 76 to 82 dBA at 50 feet (FHWA 2011). No sensitive receptors are located within distances where construction noise would approach regulatory thresholds as construction would be short-term, intermittent, and limited to active construction areas. Additionally, the proposed Project would be consistent with County Development Code Section 83.01.080, which provides an exemption for construction noise from noise level standards, as long as the noise takes place between 7:00 a.m. and 7:00 p.m., except on Sundays and

federal holidays. Construction of the proposed Project would be consistent with applicable standards of the County Development Code as construction would occur during the permitted hours. Therefore, off-site construction impacts would be *less than significant*, and mitigation is not necessary.

Impact N-1
During Project construction, the Project would not generate a substantial temporary or permanent increase in ambient noise levels in excess of established standards.
Mitigation Measures
Mitigation is not necessary. Impact N-1 would be less than significant.

IMPACT N-2: DURING PROJECT OPERATION, THE PROJECT WOULD NOT GENERATE A SUBSTANTIAL TEMPORARY OR PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN EXCESS OF ESTABLISHED STANDARDS. *(LESS THAN SIGNIFICANT)*

Implementation of the proposed Project includes the expansion of the existing CMM and would use industrial mining methods, processes, and equipment similar to those currently used during Phase I operations at CMM. County Development Code Section 83.01.080 mandates that noise criteria only apply to sensitive receptors, such as residential properties. For sensitive receptors receiving noise, the noise standard for residential uses must not exceed 55 dBA L_{eq} between 7:00 a.m. and 10:00 p.m. and 45 dBA L_{eq} between 10:00 p.m. and 7:00 a.m. Stationary noise sources must not exceed 70 dBA L_{eq} for industrial uses at any time. As mentioned above, the closest sensitive receptor to the Project Area is residences located approximately five miles south of the Project Area. Given the distance between the Project Area and the closest sensitive receptor, the proposed Project would have no appreciable noise effect at this nearest receptor. Therefore, the following operational noise analysis is solely provided for informational purposes.

Reference noise levels for each type of existing operational area within the Project Area were estimated using the noise monitoring data collected from Sespe's on-site field visit, as shown below in Table 4.12-7. Average noise levels (L_{eq}) at a reference distance of 50 feet were determined for the following operations: (1) Excavation/Open-Pit Mining; (2) Haul Road/Truck Activity; (3) Heap Leach Pad Formation; (4) Gold Processing Plant; (5) Overburden Storage/Pile Formation; (6) Crushing Plant; and (7) Comminution Plant (mill). Because Phase II operations would continue using similar equipment/processes as Phase I operations, the Phase I reference noise levels are used for the noise analyses of Phase II operations associated with the proposed Project.

Table 4.12-7. Operational Reference Noise Levels (Current Phase I and Proposed Phase II)

Operations Area	Equipment Noise Sources	Noise Level (L_{eq}) at 50 Feet (dBA)
Excavation/Open Pit Mining	Excavators, Loaders, Haul Trucks (loading)	84.1
Haul Road/Trucks	Haul Trucks (transporting, lime dispensing)	74.6
Heap Leach Pad Formation	Dozers, Scrapers, Haul Trucks (unloading)	88.2
Gold Processing Plant	Diesel Power Generators, Pumps/Fans, Miscellaneous Equipment/Vehicles	71.1
Overburden Storage / Pile Formation	Haul Trucks (unloading), Dozers	88.2
Crushing/Comminution Plant(s)	Crushing/Process, Loaders, Haul Trucks (loading)	84.1

Source: Sespe (2024)

Sespe concluded that the peak off-site noise levels generated by the proposed Project operations would not change or increase compared to the current Phase I operations (i.e., peak noise levels would remain in the 70- to 80-dB range). Although excavation/open pit mining operations will extend to the north and east during Phase II operations, estimated noise levels are not expected to significantly change (and may even decrease compared to current Phase I operations) due to the proposed topographic features associated with the proposed Project. The proposed Project includes replacing much of the existing haul route by a conveyor line, which would help reduce current operational noise levels associated with haul trucks. The Project Area also includes noise attenuation provided by the elevated ridgeline, which would block the line-of-sight between the excavation/open pit mining operations and surrounding off-site area. The proposed Project would also include the increase in overburden/waste rock piles to the northwest and southeast and steepening of the excavation pit walls, which would also serve as valuable human-made sound barriers and help to contain equipment noise within the footprint of the Project Area (Sespe 2024; see EIR Appendix 10). As such, these topographic features would be expected to attenuate the proposed Project's noise levels. Noise levels resulting from the Project operations would continue to remain localized within and immediately adjacent to the Project Area footprint (i.e., minimal within 0.25 mile). Additionally, as mentioned above, the closest sensitive receptor to the Project Area is residences located approximately five miles south from the Project Area. Given the distance between the Project Area and the closest sensitive receptor, the proposed Project would have no appreciable noise effect at this nearest receptor. The noise technical report concluded that implementation of the proposed Project would not result in an increase in operational noise. Therefore, operational impacts would be *less than significant*, and mitigation is not necessary.

Impact N-2
During Project operation, the Project would not generate a substantial temporary or permanent increase in ambient noise levels in excess of established standards.
Mitigation Measures
Mitigation is not necessary. Impact N-2 would be less than significant.

b) Would the project generate excessive ground-borne vibration or ground-borne noise levels?

IMPACT N-3: THE PROJECT WOULD NOT GENERATE EXCESSIVE GROUND-BORNE VIBRATION OR GROUND-BORNE NOISE LEVELS EITHER DURING PROJECT CONSTRUCTION OR OPERATION. *(LESS THAN SIGNIFICANT)*

Construction

Ground-borne vibration or ground-borne noise generated by construction of the proposed Project could result in a potentially significant impact to noise-sensitive receptors. County Development Code Section 83.01.090 mandates that vibrations resulting in a particle velocity of 0.20 inches per second or greater, as measured at or beyond the property boundary, are not permitted and temporary activities such as construction, maintenance, repair, or demolition conducted between 7:00 a.m. and 7:00 p.m. are exempt from these vibration restrictions, except on Sundays and federal holidays, when such activities are not allowed. Additionally, according to the Caltrans, continuous vibrations with a PPV of approximately 0.2 inches per second is considered annoying (Caltrans 2020). Heavy pieces of equipment that may be used during construction, such as rollers, have a PPV of approximately 0.21 inches per second or less at a distance of 25 feet (FTA 2018). As mentioned above, the closest sensitive receptors to the Project Area are residences approximately five miles south of the Project Area; therefore, any potential Project

construction vibration would be imperceptible from the nearest sensitive receptors. The proposed Project would require construction of the 31.5-mile Ivanpah Water Pipeline and a 16.5-mile 69-kV electrical transmission line. Construction would primarily occur along existing corridors, including SR-164 and the existing access road to the mine, which would minimize new disturbance and generally confine construction activities to areas already influenced by transportation-related vibration. No sensitive receptors are located within distances where construction vibration would approach regulatory thresholds, as construction would be short-term, intermittent, and limited to active construction areas. Ground-borne vibration levels associated with construction equipment likely to be required during Project construction are summarized in Table 4.12-8.

Table 4.12-8. Representative Vibration Levels for Construction Equipment

Equipment	Vibration Level at 25 Feet (inches per second PPV)
Vibratory roller	0.210
Caisson drilling	0.089
Large bulldozer	0.089
Loaded trucks	0.076
Small bulldozers/tractors	0.003

Source: FTA (2018)

As shown in Table 4.12-8, construction-generated vibration levels would range from approximately 0.003 to 0.210 inches per second PPV at 25 feet. The highest vibration levels would be associated with the use of vibratory rollers. Predicted construction vibration levels at nearby structures would not exceed guidance limits for human annoyance or building damage (0.2 and 0.3 inches per second PPV, respectively). As there are no off-site structures in the vicinity of the Project Area, predicted ground-borne vibration levels associated with construction activities would not exceed the County or Caltrans thresholds for potential human annoyance or building damage.

Additionally, blasting activities currently occur onsite and will continue to be occasional (no more than five blasts per week) and very short in duration (about one second) and will continue to occur during daytime hours only, and using the same methods and in the same manner as currently occurs onsite.

Because the nature and design of onsite blasting activities would not change as a result of the proposed Project, and because there are no sensitive receptors within the Project site vicinity, blasting is not expected to have any significant effect on the noise or vibration environment in the Project Area. Therefore, impacts would be *less than significant*.

Operation

Sespe did not observe any ground-borne vibration during the noise monitoring field visits at the Project Area. Although on-site mining blasting did not occur during the field visits to the Project Area, it is an activity that occurs during existing operations and is anticipated to occur during the proposed Project. Blasting activities are occasional and very short in duration (about one second), and are therefore not expected to have any significant effect on the noise or vibration environment in the Project Area as it will continue to occur during daytime hours only and would be used in the same manner as existing operations (Sespe 2024; see EIR Appendix 10). The County Policy Plan and Development Code, and the policies and regulations found therein regarding vibration criteria, only apply to human receptors, such as residential properties. Given that Project operation would be similar to existing operations in the Project Area and given the distance between the Project Area and the nearest sensitive receptor, operational impacts related to ground-borne vibration would be *less than significant*, and mitigation is not necessary.

Impact N-3
The Project would not generate excessive ground-borne vibration or ground-borne noise levels either during Project construction or operation.
Mitigation Measures
Mitigation is not necessary. Impact N-3 would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

IMPACT N-4: THE PROJECT IS NOT LOCATED IN THE VICINITY OF A PRIVATE AIRSTRIP OR PUBLIC AIRPORT; THE PROJECT WOULD NOT EXPOSE PEOPLE RESIDING OR WORKING IN THE PROJECT AREA TO EXCESSIVE NOISE LEVELS RELATED TO AIRCRAFTS DURING EITHER PROJECT CONSTRUCTION OR OPERATION. *(NO IMPACT)*

The Project Area is not within two miles of a private airstrip or public airport and is not within an airport land use plan. The closest airport is the Searchlight Airport, approximately 15 miles northeast of the Project Area. During noise monitoring, Sespe noted that airport noise had no appreciable influence on the noise environment near the Project Area. Therefore, *no impact* associated with airport noise would occur, and mitigation is not necessary.

Impact N-4
The Project is not located in the vicinity of a private airstrip or public airport; the Project would not expose people residing or working in the Project Area to excessive noise levels related to aircrafts during either Project construction or operation.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

4.12.6 Cumulative Impacts

IMPACT N-5: THE PROJECT WOULD NOT CONTRIBUTE CONSIDERABLY TO CUMULATIVE NOISE AND/OR VIBRATION IMPACTS. (LESS THAN SIGNIFICANT)

Cumulative noise or vibration impacts can occur when more than one project is under construction simultaneously or when a project is expected to generate operational noise or vibration at the same time. The potential for cumulative noise impacts is specific to the distance between the related projects and their stationary sources. Refer to Table 3-1, *Cumulative Development Scenario Project List*, in Chapter 3, *Environmental Setting*, for a list of cumulative projects identified within the vicinity of the proposed Project.

Construction Noise

Related projects in the Project vicinity include construction activities that could occur simultaneously with the construction of the proposed Project in addition to the off-site water pipeline and power line. Construction-related noise levels from the related projects would be temporary and intermittent. Further, it is assumed that these projects would be required to comply with the *County of San Bernardino – Countywide Plan Hazards Element* (County of San Bernardino 2022) and the County Development Code Section 83.01.080 (*General Performance Standards, Noise*) and Section 83.01.090 (*General Performance Standards, Vibration*) and FTA guidance. Noise resulting from cumulative construction activities would be reduced to the extent feasible through mitigation measures proposed for each project and compliance with locally enforced noise ordinances. Project-specific on-site and off-site construction-related impacts would be less than significant and are not anticipated to permanently increase ambient noise levels in a manner that would exceed the County's thresholds. Construction of reasonably foreseeable future projects has the potential to increase short-term ambient noise; however, construction-related noise generated by reasonably foreseeable present and future projects would be short-term, intermittent, and required to comply with the County's acceptable construction hours. Reasonably foreseeable future projects would be subject to separate environmental review to determine potential sources of short- or long-term increases in ambient noise levels that may exceed established County noise standards and would be required to reduce noise impacts where feasible. Therefore, impacts related to the generation of short- and long-term ambient noise levels would be *less than cumulatively considerable*.

Construction Vibration

Project-specific impacts related to the generation of ground-borne construction noise and vibration would be less than significant, and no mitigation is required. Typical construction activities do not generate ground-borne noise or vibration in a manner that would be perceptible to humans; therefore, other reasonably foreseeable future projects are not anticipated to result in significant impacts related to the generation of ground-borne noise or vibration. Nevertheless, reasonably foreseeable present and future projects would be subject to separate environmental review to determine potential sources of ground-borne noise and vibration and to reduce potential impacts as necessary. Therefore, impacts related to the generation of ground-borne noise and vibration would be *less than significant* and less than cumulatively considerable.

Operational Noise

Project-specific impacts related to the generation of operational noise would be less than significant, and mitigation is not necessary as the closest human receptor/residence is located about five miles south from the Project Area. Therefore, noise levels resulting from the proposed Project operations would be imperceptible at this closest receptor. The County's noise criteria only apply to human receptors, such as residential properties. As such, reasonably foreseeable present and future projects would be subject to separate environmental review to determine potential sources of operational noise and to reduce potential impacts as necessary. Compared to existing conditions, operational noise would be lower than current conditions because of the topographic changes to the Project Area that will be implemented under Project operations, which would provide natural sound attenuation. Additionally, the existing haul route would be replaced by a conveyor line under Project operations, which would help reduce operational noise levels compared to existing conditions. Therefore, impacts related to the generation of operational noise would be *less than significant* and less than cumulatively considerable.

Operational Vibration

Project-specific impacts related to the generation of groundborne operational vibration would be less than significant, and mitigation is not necessary as the closest human receptor/residence is located about five

miles south from the Project Area. Therefore, vibration levels resulting from the proposed Project operations would be imperceptible at this closest receptor. The County's vibration criteria only apply to human receptors, such as residential properties. As such, reasonably foreseeable present and future projects would be subject to separate environmental review to determine potential sources of groundborne operational vibration and to reduce potential impacts as necessary. Therefore, impacts related to the generation of groundborne operational vibration would be *less than significant* and less than cumulatively considerable.

Impact N-5
The Project would not contribute considerably to cumulative noise and/or vibration impacts.
Mitigation Measures
Mitigation is not necessary. Impact N-5 would be less than significant.

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4.13 POPULATION AND HOUSING

This section of the EIR analyzes potential impacts to population, housing, and employment resulting from the implementation of the Project. The analysis is based on a review of existing resources, technical data, and applicable laws, regulations, and guidelines, including the Environmental Checklist contained in Appendix G of the State CEQA Guidelines, which provides the thresholds of significance used to evaluate population and housing impacts.

4.13.1 Existing Conditions

The Project Area, encompassing approximately 4,285 acres, extends across portions of San Bernardino County, California, and Clark County, Nevada, and includes the Mine Area, the mine access road, the proposed water and powerlines, and a 50-foot buffer surrounding the water and powerlines; however, this EIR analyzes the portion of the Project located in San Bernardino County.

4.13.1.1 Population

The Project Area is in San Bernardino County, which is within the jurisdiction of the Southern California Association of Governments (SCAG). The SCAG region encompasses six counties, including Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura, and 191 cities in an area covering more than 38,000 square miles. Historically, the SCAG region's population growth has been rapid, but the annual growth rate has decreased every decade since the 1980s. Deaths are expected to outnumber births by the late 2030s, and population growth is projected to fall below zero in the years following. As a result, people entering from other regions, states, or countries are expected to be the sole source of population growth in the later years of the 2019 to 2050 growth forecast, and domestic migration is expected to rebound. Nonetheless, the region added 773,000 residents in the last decade (2010–2020) (SCAG 2024).

Based on the 2020 Census taken on April 1, 2020, the most recent official count on record, the population of the SCAG region was 18,824,382. The SCAG region population accounts for 47.6% of California's 39.5 million residents and 5.7% of the total population (331 million) of the United States. According to the California Department of Finance (DOF) population estimates, population size peaked in 2019 and has since decreased to 18,770,806 as of January 1, 2025 (DOF 2025). The decline in population is attributed to both the long-term trend of slower population growth as well as factors related to COVID-19, including near-zero immigration levels, pandemic-related deaths, and increasingly negative net domestic migration (SCAG 2024).

According to the DOF Population Estimates, as of January 1, 2025, the population of San Bernardino County is approximately 2,207,424 (DOF 2025). Based on the SCAG 2024 *Demographics and Growth Forecast Technical Report*, the county's population is projected to consistently increase through the year 2050, where the total population is estimated to be 2,623,000 (SCAG 2024).

While the Project Area is in San Bernardino County, the nearest population centers that would supply workers and worker housing are in Clark County, Nevada. Therefore, an analysis of the existing population of Clark County is also provided for informational purposes. To provide a consistent analysis, the most recent data provided by the U.S. Department of Commerce (2023) was used for both San Bernardino County and Clark County, as Clark County is not within the SCAG region. As shown in Table 4.13-1, the total population in San Bernardino County was estimated to be 2,187,816 in 2023, which is a 9.1% increase since 2010. The total population of Clark County was estimated to be 2,293,764 in 2023, which is a 21.0% increase since 2010.

Table 4.13-1. Population Between 2010 and 2023 in the Project Area

Population Metric	California	San Bernardino County	Nevada	Clark County
2010 Population	36,637,290	2,005,287	2,633,331	1,895,521
2023 Population	39,242,785	2,187,816	3,141,000	2,293,764
Population Change (2010–2023)	2,605,495	182,529	507,669	398,243
Percentage Change in Population (2010–2023)	7.1%	9.1%	19.3%	21.0%
2010 Median Age	34.9	31.2	35.9	35.1
2023 Median Age	37.6	34.4	38.9	38.3

Source: U.S. Department of Commerce (2023a).

4.13.1.2 Housing

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and addresses regional issues relating to transportation, the economy, community development, and the environment. On September 3, 2020, SCAG's Regional Council adopted an updated Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)—*Connect SoCal: A Plan for Navigating to a Brighter Future* (Connect SoCal 2024 RTP/SCS) (SCAG 2024), which covers the period from 2020 through 2045. According to the Connect SoCal 2024 RTP/SCS, the SCAG region projects 69,700 new housing units per year between 2020 and 2035 in comparison to 32,500 per year between 2035 and 2050, demonstrating a steady catch-up to past housing shortages (SCAG 2024).

According to SCAG's *Demographics and Growth Forecast Technical Report*, which is part of the Connect SoCal 2024 RTP/SCS, housing unit growth in the unincorporated areas of San Bernardino County is expected to grow from 97,300 housing units in 2019 to 104,200 housing units in 2050 (SCAG 2024). A number of unincorporated communities in the Desert region contain a substantial amount of vacant housing, with roughly one in four units sitting vacant for at least part of the year (County of San Bernardino 2022).

Although the proposed Project does not include a residential component, as mentioned above, the nearest population centers that would supply workers and worker housing are in Clark County. Therefore, an analysis of the existing housing supply in Clark County is also provided. To provide a consistent analysis, the most recent data provided by the U.S. Department of Commerce (2023) was used for both San Bernardino County and Clark County, as Clark County is not within the SCAG region. Table 4.13-2 provides a summary of the housing statistics in the Project Area vicinity.

Table 4.13-2. Housing Statistics in the Project Area Vicinity

Housing Statistic	California	San Bernardino County	Nevada	Clark County
Total Housing Units	14,532,683	738,535	1,307,338	935,960
Occupied	13,434,847	668,004	1,183,393	847,378
Vacant	1,097,836	70,531	123,945	88,582
For rent	256,828	8,535	35,043	27,817
Rented, not occupied	47,842	1,478	5,284	4,018
For sale only	65,471	4,624	8,274	5,827
Sold, not occupied	56,032	2,517	4,686	3,492
Seasonal, recreational, occasional	361,608	38,012	36,351	25,075
For migrant workers	2,659	34	233	62
Other vacant	307,396	15,331	34,074	22,291
Median Rent	$1,956	$1,706	$1,489	$1,518
Median Home Value	$695,400	$475,000	$406,100	$400,800

Source: U.S. Department of Commerce (2023b)

Additionally, Table 4.13-3 provides housing statistics for cities and communities in Nevada where employees are likely to reside and commute to the Project Area. The housing inventory in the communities of Cal-Nev-Ari, Laughlin, and Searchlight is much lower than in the cities of Henderson and Las Vegas; however, median rental prices and home values are significantly lower. Figure 4.13-1 depicts the closest residential communities in Clark County to the Project Area.

Table 4.13-3. Housing in Nevada Cities and Communities Near the Project Area

Housing Statistic	Cal-Nev-Ari (CDP)	Henderson	Las Vegas	Laughlin (CDP)	Searchlight (CDP)
Total Housing Units	188	136,901	263,958	5,431	421
Occupied	131	127,507	244,429	4,364	232
Vacant	57	9,394	19,529	1,067	189
For rent	0	2,101	5,318	104	0
Rented, not occupied	0	771	812	12	0
For sale only	0	999	1,548	32	0
Sold, not occupied	12	374	881	0	13
Seasonal, recreational, occasional	7	3,608	4,242	794	93
For migrant workers	0	0	28	0	0
Other vacant	38	1,541	6,700	125	83
Median Rent	$835	$1,750	$1,456	$991	$475
Median Home Value	$66,700	$465,000	$395,300	$255,000	$128,200

Source: U.S. Department of Commerce (2023b)

Note: CDP = census-designated place



Figure 4.13-1. Communities in Clark County, Nevada

Temporary accommodations within commuting distance of the Project Area include hotels or recreational vehicle (RV) parks. Travel Nevada (2025) publishes detailed quarterly hotel information for Clark County, Las Vegas, and Laughlin (Table 4.13-4). RV parks in Cal-Nev-Ari, Searchlight, and Cottonwood Cove have roughly 140 sites (RV Life Campgrounds 2026), and there are more than 750 more sites in Laughlin (Visit Laughlin 2026).

Table 4.13-4. Hotel Rooms in Locations Near the Project Area

Hotel Statistic	Clark County	Las Vegas	Laughlin
Room Inventory (2024)	164,182	153,719	8,864
Room Inventory (2025)	160,894	150,220	8,864
Percent Room Inventory Change (2024–2025)	-2.0%	-2.3%	0.0%
Occupancy Levels Over Time			
2023 Third Quarter	NR	82.7%	55.9%
2023 Fourth Quarter	NR	83.2%	42.0%
2024 First Quarter	80.8%	82.7%	47.0%
2024 Second Quarter	83.8%	85.6%	53.6%
2024 Third Quarter	NR	82.9%	54.1%
2024 Fourth Quarter	NR	83.0%	41.5%
2025 First Quarter	79.8%	81.8%	45.4%
2025 Second Quarter	80.4%	82.1%	52.6%
Net Occupancy Level Change			
Third Quarter (2023–2024)	NR	0.2%	-1.8%
Fourth Quarter (2023–2024)	NR	-0.1%	-0.5%
First Quarter (2024–2025)	-0.9%	-0.8%	-1.6%
Second Quarter (2024–2025)	-3.4%	-3.5%	-1.0%

Source: Travel Nevada (2025)

While Las Vegas has a relatively high occupancy rate, there is also a large inventory of rooms. Additionally, a significant number of rooms are in Laughlin, where occupancy rates are lower. The Primm Valley Resorts (2026) are also located within commuting distance of the Project Area and have a total of 624 rooms.

4.13.1.3 Employment

Since 2000, the SCAG region has faced three recessions—the 8-month "dot-com bubble" recession in 2001, the Great Recession of 2008, and the COVID recession (2020–2022). During the recovery from the Great Recession (2010–2019), Southern California experienced over 20% job growth, adding 1.5 million jobs. During this time, the unemployment rate dropped from 12.5% to 4.2%. During the COVID-19 pandemic, between February and May 2020, the region lost 1.9 million jobs, and the unemployment rate reached a historic high of 17.3%. By 2022, regional employment returned to its pre-pandemic level of 8.9 million, and the unemployment rate dropped to 4%. Employment in the region is projected to grow at a compounded annual growth rate of 0.49%, with the top three growth sectors in terms of added jobs being the Health Care and Social Assistance, Construction, and Accommodation and Food Service sectors (SCAG 2024). According to the Connect SoCal 2024 RTP/SCS, the SCAG region projects 22,000 new jobs per year between 2019 and 2050 (SCAG 2024).

According to the *San Bernardino Countywide Plan 2021–2029 Housing Element Technical Report*, the industries with the highest percentage of employees are educational, health, and social services, with 87,366 employees (21.9% of total), followed by retail trade (12.8% of total). The largest single employer in San Bernardino County is the U.S. Department of Defense through a number of active military bases (29 Palms Marine Corps Air Ground Combat Center, Fort Irwin, Naval Air Weapons Station China Lake, March Air Force Base, and Marine Corps Logistics Base Barstow) that employ tens of thousands of active military personnel and civilian personnel (County of San Bernardino 2022). According to the Connect SoCal 2024 RTP/SCS, employment in San Bernardino County is projected to increase to 1,035,000 and 1,145,000 by 2035 and 2050, respectively. As mentioned above, the nearest population centers that would supply workers and worker housing are in Clark County. Therefore, an analysis of the existing employment in Clark County is also provided. To provide a consistent analysis, the most recent data provided by the U.S. Department of Commerce (2023) was used for both San Bernardino County and Clark County, as Clark County is not within the SCAG region. Table 4.13-5 provides a summary of the number of jobs by industry in the vicinity of the Project Area, along with the percentage of total jobs provided by the industry. The largest share of jobs in San Bernardino County is in transportation and warehousing (14.9%), with the next largest contributor being government (12.2%). Driven by the large tourism industry in Las Vegas, the largest share of jobs in Clark County is in the accommodation and food services industry (17.3%), followed by retail trade (9.3%).

Table 4.13-5. Jobs by Industry in the Project Area Vicinity

Industry	California	San Bernardino County	Nevada	Clark County
Total number of jobs	25,300,974 (100.0%)	1,193,681 (100.0%)	2,061,871 (100.0%)	1,523,197 (100.0%)
Non-services related	3,203,954 (12.7%)	126,384 (10.6%)	227,268 (11.0%)	129,141 (8.5%)
Farm	228,186 (0.9%)	2,466 (0.2%)	5,208 (0.3%)	437 (0.0%)
Forestry, fishing, and agricultural services	259,767 (1.0%)	1,201 (0.1%)	2,214 (0.1%)	491 (0.0%)
Mining (including fossil fuels)	36,926 (0.1%)	1,603 (0.1%)	19,165 (0.9%)	1,726 (0.1%)
Construction	1,259,662 (5.0%)	61,113 (5.1%)	129,422 (6.3%)	93,558 (6.1%)
Manufacturing	1,419,413 (5.6%)	60,001 (5.0%)	71,259 (3.5%)	32,929 (2.2%)
Services related	19,317,589 (76.4%)	921,714 (77.2%)	1,652,611 (80.2%)	1,270,542 (83.4%)
Utilities	67,516 (0.3%)	4,112 (0.3%)	4,612 (0.2%)	2,899 (0.2%)
Wholesale trade	773,657 (3.1%)	49,500 (4.1%)	48,807 (2.4%)	32,949 (2.2%)
Retail trade	2,090,805 (8.3%)	116,117 (9.7%)	191,956 (9.3%)	141,831 (9.3%)
Transportation and warehousing	1,474,413 (5.8%)	177,757 (14.9%)	153,001 (7.4%)	115,664 (7.6%)
Information	727,797 (2.9%)	8,061 (0.7%)	25,517 (1.2%)	19,593 (1.3%)
Finance and insurance	1,318,004 (5.2%)	43,147 (3.6%)	122,182 (5.9%)	95,406 (6.3%)
Real estate and rental and leasing	1,454,721 (5.7%)	48,684 (4.1%)	130,455 (6.3%)	95,228 (6.3%)
Professional and technical services	2,231,632 (8.8%)	50,533 (4.2%)	121,060 (5.9%)	88,272 (5.8%)
Management of companies	284,267 (1.1%)	5,669 (0.5%)	37,971 (1.8%)	31,130 (2.0%)
Administrative and waste services	1,581,853 (6.3%)	94,572 (7.9%)	146,587 (7.1%)	116,287 (7.6%)
Educational services	554,586 (2.2%)	16,960 (1.4%)	23,945 (1.2%)	18,131 (1.2%)

Industry	California	San Bernardino County	Nevada	Clark County
Health care and social assistance	2,942,827 (11.6%)	140,876 (11.8%)	170,804 (8.3%)	127,645 (8.4%)
Arts, entertainment, and recreation	617,031 (2.4%)	15,433 (1.3%)	61,968 (3.0%)	46,868 (3.1%)
Accommodation and food services	1,775,446 (7.0%)	79,767 (6.7%)	314,012 (15.2%)	263,173 (17.3%)
Other services, except public administration	1,423,034 (5.6%)	70,526 (5.9%)	99,734 (4.8%)	75,466 (5.0%)
Government	2,779,431 (11.0%)	145,583 (12.2%)	181,992 (8.8%)	123,514 (8.1%)
Residual	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

Source: U.S. Department of Commerce (2023c)

4.13.2 Regulatory Setting

4.13.2.1 Federal

There are no federal regulations or planning programs that apply to the proposed Project regarding population and housing.

4.13.2.2 State

HOUSING ELEMENT LAW (CALIFORNIA GOVERNMENT CODE SECTIONS 65583 AND 65584(A)(1))

Under Section 65583 of the California Government Code, counties and cities are required to include a Housing Element, updated by each jurisdiction every eight years, as part of the General Plan to ensure adequate housing for all income levels of the county or city. The purpose of the Housing Element is to recognize the housing needs of the community and state the housing goals and objectives of the community, including housing conservation, production, and rehabilitation to meet housing needs. The Regional Housing Needs Assessment (RHNA) is mandated by California State law and quantifies the need for housing during specified planning periods and within each jurisdiction. Pursuant to Section 65584(a)(1), the California Department of Housing and Community Development (HCD) determines the housing needs for low- to above moderate-income levels and prepares initial housing needs assessments. The HCD collaborates with each regional planning body, or Council of Governments, to prepare the final RHNA. SCAG serves as the Council of Governments for the Southern California region.

THE SUSTAINABLE COMMUNITIES AND CLIMATE PROTECTION ACT OF 2008 (SENATE BILL 375)

The Sustainable Communities and Climate Protection Act of 2008 (Senate Bill [SB] 375) focuses on aligning housing, transportation, and other land uses to achieve regional greenhouse gas (GHG) emission reduction targets recognized under the California Global Warming Solutions Act, also known as Assembly Bill (AB) 32. SB 375 requires metropolitan planning organizations to develop an SCS as part of the RTP, with the goal of identifying policies and strategies to reduce per capita passenger vehicle-generated GHG emissions.

4.13.2.3 Local

SCAG'S 2020–2045 REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

San Bernardino County falls under the jurisdiction of the SCAG. In September 2020, SCAG's Regional Council adopted the 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), *Connect SoCal: A Plan for Navigating to a Brighter Future* (Connect SoCal 2024 RTP/SCS) (SCAG 2024), which establishes a long-term vision for integrating land use and transportation initiatives. The plan aims to expand mobility options, promote sustainable growth, and meet GHG reduction targets set by the California Air Resources Board. The "Core Vision" of the Connect SoCal 2024 RTP/SCS emphasizes maintaining and managing the existing transportation infrastructure; enhancing mobility by aligning housing, employment centers, and transit; and increasing investments in public transit and complete streets. Key strategies to realize this vision include Smart Cities and Job Centers, Housing Supportive Infrastructure, Go Zones, and Shared Mobility initiatives. Through these efforts, the Connect SoCal 2024 RTP/SCS seeks to advance regional objectives such as sustainability, transportation equity, improved public health and safety, and a higher overall quality of life. Projected outcomes include a 5% decrease in vehicle miles traveled (VMT) per capita, a 9% reduction in vehicle hours traveled, and a 2% rise in transit trips for work purposes.

The 2024–2050 Demographics and Growth Forecast Technical Report projects growth in population, households, and employment at the regional, county, jurisdictional, and sub-jurisdictional levels to 2050. Every four years, SCAG updates the RTP/SCS as required by federal and State regulations. The regional and county growth forecasts presented in the technical report rely more heavily on births, deaths, migration, and the strength of a region's economic base compared to the nation as a whole (SCAG 2024).

SAN BERNARDINO COUNTYWIDE PLAN

The *San Bernardino County Countywide Plan* (CWP), adopted by San Bernardino County (County) in October 2020, is a collection of planning tools intended to guide future decisions, investments, and improvements throughout the county (County of San Bernardino 2024). The CWP consists of the County Policy Plan, the County Business Plan, and a communities plan. The County Policy Plan is an update and expansion of the County's General Plan, addressing physical, social, and economic issues facing the unincorporated portions of the county as well as supportive services for adults and children, healthcare services, public safety, and other regional county services provided to both incorporated and unincorporated areas, and was updated in September 2022. The County Policy Plan contains 11 Elements, of which the Land Use and Economic Development elements are relevant to the potential effects of the proposed Project on the existing population, employment characteristics, and housing availability within San Bernardino County. Since the proposed Project would not involve the removal of existing housing, the construction of new housing, or zoning changes to or from residential zoning, no goals or policies in the Housing Element would be applicable to the Project. Relevant goals and policies from the Land Use and Economic Development Elements of the County Policy Plan are summarized in Table 4.13-6 (County of San Bernardino 2024).

Table 4.13-6. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal//Policy	Goal/Policy Description
Land Use Element	
Goal LU-1	Growth and development that builds thriving communities, contributes to our Complete County, and is fiscally sustainable.
Policy LU-1.1	We support growth and development that is fiscally sustainable for the County. We accommodate growth in the unincorporated county when it benefits existing communities, provides a regional housing option for rural lifestyles, or supports the regional economy.
Goal LU-2	An arrangement of land uses that balances the lifestyle of existing residents, the needs of future generations, opportunities for commercial and industrial development, and the value of the natural environment.
Policy LU-2.7	We prioritize growth that furthers a countywide balance of jobs and housing to reduce vehicle miles traveled, increase job opportunities and household income, and improve quality of life. We also strive for growth that furthers a balance of jobs and housing in the North Desert region and the Valley region.
Economic Development Element	
Goal ED-1	Increased business investment in land and facilities and job growth in key unincorporated areas.
Policy ED-1.2	We support and facilitate the establishment of special funding and financing mechanisms for road, water, sewer, and drainage infrastructure improvements in order to generate private investment in employment and commercial focus areas.
Policy ED-1.5	We support the extraction of mineral resources in unincorporated areas and the establishment and operation of supporting businesses throughout the county.
Goal ED-3	Growth of new businesses, improved profitability of existing businesses, and an increased number and quality of jobs in the county.
Policy ED-3.1	We strive to achieve countywide job growth in excess of household growth to improve the jobs-housing ratio, reduce out-commuting, and enhance quality of life.

4.13.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to population and housing if the project would:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

Each of these thresholds is discussed under Section 4.13.5, *Project-Specific Impacts and Mitigation Measures*, below.

4.13.4 Impact Assessment Methodology

The analysis provided in this section evaluates proposed development and considers whether these changes would result in substantial adverse impacts on local and/or regional population growth and housing, particularly in relation to existing conditions and to cumulative growth estimated in the DOF growth estimates and projection, SCAG's Connect SoCal 2024 RTP/SCS, the *San Bernardino Countywide Plan 2021–2029 Housing Element Technical Report*, and the *2021–2029 Housing Element and Hazards Element Update Addendum*. Potential indirect impacts of population growth on resources

such as transportation, public services, water supply, and other issues are addressed in respective sections of this EIR. Information is presented for San Bernardino County and Clark County.

4.13.5 Project-Specific Impacts and Mitigation Measures

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

IMPACT PH-1: THE PROJECT WOULD NOT DIRECTLY OR INDIRECTLY INDUCE SUBSTANTIAL UNPLANNED POPULATION GROWTH IN THE PROJECT AREA. *(NO IMPACT)*

The proposed Project involves the second expansion of the existing CMM, including a request for water and power utilities to be installed within existing rights-of-way (ROWs) to support the expansion.

Construction

Construction activities would require up to 500 construction workers during the approximately 18-month construction period, which would have the potential to generate temporary, short-term employment opportunities that would cease upon completion of construction. It is likely that many of the workers may come from both San Bernardino County and Clark County. However, as shown in Figure 4.13-1, the nearest housing communities to the Project Area are located in Clark County. Therefore, it is assumed that workers would reside in Clark County, as population centers in San Bernardino County are not within commuting distance to the CMM. Due to the temporary nature of the construction jobs, it is likely that most workers would not bring their families with them. In a maximum impact scenario in which all 500 peak workforce workers relocate from outside the analysis area and bring their families, assuming an average household size of 2.5, the resulting peak population increase would be approximately 1,250 people, which is 0.05% of the Clark County population of 2,293,764.

According to the CWP, between 2000 and 2010, the national recession significantly slowed job growth and the unincorporated area lost over 13,000 jobs. Job growth began to rebound slowly in 2012 and is projected to continue to grow through 2045. Job growth in the unincorporated areas will continue to be lower compared to incorporated areas, as retail and office jobs are located next to more densely populated areas generally found in incorporated cities and towns. Therefore, Project construction would support the unincorporated area of San Bernardino County by providing additional jobs in an area that has had limited employment opportunities.

Within the unincorporated portion of San Bernardino County, as of 2019, construction jobs made up approximately 9.8% of the regional employment, with approximately 11,650 workers in the construction sector (SCAG 2024).

Between 2019 and 2050, the number of employees within the unincorporated portion of San Bernardino County is expected to increase from approximately 56,300 workers to 69,000 workers (SCAG 2024). Additionally, between 2022 and 2050, the construction sector is expected to add 148,000 construction jobs in the SCAG region (SCAG 2024). Based on the existing employees and projected job growth in the unincorporated portion of San Bernardino County, construction activities for the proposed Project are expected to use workers from the local construction industry workforce and would not require a substantial number of workers to relocate to the Project Area. Additionally, many construction workers are specialized in some skill (e.g., plumbers, steel workers, etc.) and are only on a specific job site for a

limited duration to exercise their skill, and generally are not on-site for the entire construction duration. In some instances, workers may seek transient lodging options (e.g., hotels, motels) for some or all of the construction duration, with hotel stays primarily in Primm, Laughlin, and Henderson and RV stays primarily in Searchlight and Cal-Nev-Ari. As shown above in Table 4.13-4 Laughlin's peak occupancy was 55.9%, which means on average 44.1% of its 8,864 total rooms (or 3,909 rooms) are available and are more than enough to house the peak construction workforce of 650 workers. Proposed construction activities would not induce substantial or unplanned population growth as defined by Appendix G of the State CEQA Guidelines. Therefore, *no impact* would occur, and mitigation is not necessary.

Operation

The following analysis evaluates the proposed Project's long-term impact on population, housing, and employment growth in San Bernardino County following full Project buildout, which is anticipated to occur in 2028.

Population

The proposed Project includes the second expansion of CMM and does not propose the development of any residential uses. Therefore, the proposed Project would not generate residents, and no direct population growth would occur as a result of Project implementation.

Indirect population growth may occur by removing a barrier to growth, such as creating new access to undeveloped areas or increasing the capacity of existing infrastructure; however, the proposed Project would not remove existing growth constraints or create excess infrastructure capacity capable of serving development beyond the Project Area. The proposed Project would be limited to the expansion of CMM in the Project Area and would not result in new development and uses in a manner that could foster new growth in a previously undeveloped area beyond the Project Area.

The proposed Project would include roadway improvements and new access roads; however, these roadway extensions are proposed solely to provide access to the Project Area. The proposed Project would use the CMM Access Road for routine site access and ongoing road maintenance. Both routine and non-routine road maintenance would be authorized to occur across the approximately 18-mile-long CMM Access Road. Public access to CMM is restricted by fencing and gates to protect both public safety and wildlife. The surrounding lands predominantly have an Open Space (OS) land use designation and are zoned for Resource Conservation (RC). The proposed new access roads implemented as part of the proposed Project would not provide access to the surrounding open space areas, as the new roads would not extend into neighboring undeveloped areas. Therefore, the proposed Project would not result in the construction of new roadways, bridges, or other features that would make previously undeveloped areas accessible to new development or otherwise facilitate growth-inducing development beyond the Project Area.

The proposed Project would be limited to the construction of infrastructure to serve the proposed Project and does not include major expansion of existing public or utility services or facilities in a manner that would allow for substantial growth in other areas not currently served, or currently underserved, by utility services or facilities. Proposed infrastructure developments associated with the proposed Project, including the expansion of utilities (water and power utilities), are not anticipated to be extended into previously undeveloped areas that would be available for future development, would be limited in capacity to Project-specific demands, and are not sized, designed, or intended to serve third-party or off-site development, as these utility extensions are designed for use solely by CMM as required for Phase II expansion. These infrastructure improvements are intended to meet the service needs of the proposed Project and are consistent with County infrastructure plans and policies. These Project-specific

improvements would facilitate the buildout of the proposed Project and do not account for use by unplanned and undeveloped areas as they are intended to only serve the proposed Project.

Housing

As described above, the proposed Project includes the second expansion of CMM and does not propose the development of any residential uses. Therefore, the proposed Project would not generate housing units, would not remove or convert existing housing, and household growth associated with the proposed Project is not expected to occur. However, based on existing operations at CMM, CMV estimates that permanent mine workers hired for operations would mostly live in Henderson and Las Vegas, with 25% using housing options in Searchlight, Laughlin, or Cal-Nev-Ari, as population centers in San Bernardino County are generally not within commuting distance of the Project Area. As shown in Tables 4.13-2 and 4.13-3, there is a sufficient amount of vacant housing provided in the cities and communities near the Project Area to accommodate the existing and future CMM employees.

Employment

As mentioned above, it is likely that many of the workers may come from both San Bernardino County and Clark County. However, as shown in Figure 4.13-1, the nearest housing communities to the Project Area are located in Clark County. Therefore, it is assumed that workers would reside in Clark County, as population centers in San Bernardino County are not within commuting distance to the CMM. As shown in Table 4.13-5, the largest share of jobs in Clark County is in the accommodation and food services industry (17.3%), followed by retail trade (9.3%), which is driven by the large tourism industry in Las Vegas. The mining industry currently makes up 1,726 (0.1%) of jobs in Clark County. In a maximum impact scenario in which all 400 workforce employees relocate from outside of Clark County and bring their families to reside in Clark County and commute to CMM, assuming an average household size of 2.5 persons, the resulting peak population increase would be approximately 1,000 people, which is less than 0.1% of the Clark County population of 2,293,764. Therefore, the 400 new jobs generated by the proposed Project would serve the needs of the residents in the Clark County area and would not require a substantial number of workers to relocate to the Project Area.

Employment within the unincorporated portion of San Bernardino County is expected to increase from approximately 56,300 employees in 2019 to 69,000 employees by 2050 (SCAG 2024). The proposed Project would result in 400 new permanent employees. Throughout the SCAG region, employment in the natural resources and mining sector is expected to grow from 5,000 jobs in 2022 to 7,000 jobs by 2050. Therefore, the 400 new employees generated by the proposed Project is anticipated within SCAG's growth projections on a regional level.

The population-employment (P:E) ratio measures the relationship between the number of people of all ages in the population and the number of jobs available. A smaller P:E ratio, such as the pre-pandemic low of 2.13, reflects a tighter labor market, while a higher P:E ratio reflects more people per job, or fewer jobs providing for more people. The P:E ratio is considered in developing a balanced regional forecast because it reflects a balance between population and jobs. SCAG estimates that by 2050, San Bernardino County will have a population of 2,623,000 and 1,145,000 jobs, resulting in a P:E of 2.29, which means that labor force participation is expected to stay relatively high even through economic disruptions. Based on the growth projections for population and jobs in San Bernardino County, the proposed Project is expected to use workers from the local employment force and would not require a substantial number of workers to relocate to the Project Area. Therefore, any population growth associated with new permanent employment opportunities would be negligible and would fall below SCAG growth projections.

According to the *San Bernardino Countywide Plan 2021–2029 Housing Element Technical Report,* in 2019, the agriculture, forestry, fishing, and mining sector made up approximately 1.4% of the regional employment with approximately 1,628 workers. The Project Area is within the North Desert region of the unincorporated area of San Bernardino County (San Bernardino County 2020). According to the County's *2021–2029 Housing Element and Hazards Element Update Addendum,* the projected growth in the North Desert region between 2016 and 2040 will result in a population increase of 21,073 residents and an employment growth of 725 jobs. The *San Bernardino Countywide Plan 2021–2029 Housing Element Technical Report* notes that according to the U.S. Department of Housing and Urban Development (HUD) Jobs Proximity Index, the Desert regions of San Bernardino County have significantly less access to jobs than areas in the Mountain and Valley regions and those living in the Desert regions must often commute much further to reach places of employment. Therefore, on a local level, the 400 new jobs generated by the proposed Project would serve the needs of the residents in the area.

Conclusion

Based on the analysis provided above, construction and operation of the proposed Project would not result in substantial or unplanned growth related to population, housing, or employment either directly or indirectly. Therefore, *no impact* would occur, and mitigation is not necessary.

Impact PH-1
The Project would not directly or indirectly induce substantial unplanned population growth in the Project Area.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

IMPACT PH-2: THE PROJECT WOULD NOT DISPLACE SUBSTANTIAL NUMBERS OF EXISTING PEOPLE OR HOUSING, NECESSITATING THE CONSTRUCTION OF REPLACEMENT HOUSING ELSEWHERE. *(NO IMPACT)*

The Project Area currently consists of the CMM operations. As mentioned above, the proposed Project involves the second expansion of CMM, including a request for water and power utilities to be installed within the existing ROW to support the expansion. CMM is an existing open-pit gold mine/heap-leach operation administered by the Bureau of Land Management (BLM) California Needles Field Office (NFO).

The Project Area does not currently contain any existing residential structures or uses. The proposed Project would not displace existing people or housing. Therefore, *no impact* would occur, and mitigation is not necessary.

Impact PH-2
The Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

4.13.6 Cumulative Impacts

IMPACT PH-3: THE PROJECT WOULD NOT RESULT IN CUMULATIVE IMPACTS RELATED TO POPULATION AND HOUSING. *(NO IMPACT)*

As provided in Chapter 3, *Environmental Setting*, a list of cumulative development projects in the vicinity of the Project Area also details nearby related projects.

As described in Impact PH-1, the proposed Project would not directly or indirectly result in substantial or unplanned growth related to population, housing, or employment. Other reasonably foreseeable future projects would be subject to subsequent environmental review to determine if individual projects would result in substantial or unplanned growth. Although no residents would be generated as a result of the implementation of the proposed Project, it can be assumed that a portion of the residents generated by cumulative development projects would already live in San Bernardino County or Clark County and would move into one of the related project's residential components. It is also assumed that a portion of these residents is already included in the total local labor force in either San Bernardino County or Clark County.

Within San Bernardino County, the Project Area has a designated land use of Resource/Land Management (RLM) and is zoned for RC. The town of Nipton, California, where the Project easement originates, is designated as Rural Living (RL) and zoned as Special Development-Residential (SD-RES). As the Project Area currently operates as CMM and the Project Area is zoned for such uses, development of the Project Area has been anticipated, and the proposed Project's population growth, employee growth, and infrastructure improvements have been accounted for in the CWP. Reasonably foreseeable future projects would be subject to the underlying zoning requirements of the specific project site to be consistent with the County's growth assumptions in the CWP. Any proposed new roadways and infrastructure improvements would serve the applicable related projects and would not extend roads or other infrastructure into previously undeveloped areas that would be available for future development. As described in Impact PH-2, the proposed Project would not displace existing people or housing or necessitate the construction of replacement housing elsewhere. As such, *no impact* would occur.

Impact PH-3 (Cumulative Impacts)
The Project would not result in cumulative impacts related to population and housing.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

4.14 PUBLIC SERVICES, UTILITIES, AND SERVICE SYSTEMS

This section of the EIR analyzes potential impacts to public service facilities, utilities, and service systems resulting from the implementation of the proposed Project. The analysis is based on a review of existing resources, technical data, and applicable laws, regulations, and guidelines, as well as technical reports prepared for the proposed Project, and is evaluated using the Environmental Checklist contained in Appendix G of the State CEQA Guidelines to determine the significance of public services and utilities impacts. Consistent with CEQA Guidelines Sections 15064 and 15126.2, the analysis focuses on whether the proposed Project would result in a substantial adverse physical impact on the environment due to the need for new or physically altered public service facilities, utilities, or service systems, or whether it would exceed existing system capacities requiring construction of new infrastructure.

4.14.1 Existing Conditions

4.14.1.1 Public Services

FIRE PROTECTION

Fire protection services for the Project Area and adjacent areas are provided through mutual cooperative agreements between federal, State, and local agencies, as detailed in the California Desert Interagency Fire Program (CDIFP) Fire Management Plan (FMP). According to the CDIFP FMP, one NPS and one BLM fire engine are stationed at the Hole-in-the-Wall Interagency Fire Center in the Mojave National Preserve (BLM and NPS 2024). As shown in Figure 14.4-1, of the preparedness resources mentioned in the FMP, the Hole-in-the-Wall Interagency Fire Center would be the nearest fire station to the Project Area under the CDIFP, located approximately 20 miles southwest of the Project Area. The CDIFP FMP is a strategic plan to manage wildfire, prescribed fire, and prescribed fire fuel treatments, based on national interagency wildland fire policy and existing planning documents. The CDIFP FMP planning area comprises the California Desert District and Death Valley National Park, Joshua Tree National Park, Castle Mountains National Monument, and Mojave National Preserve.

Additional fire protection services are provided under the jurisdiction of the San Bernardino County Fire Protection District (SBCoFD). The SBCoFD operates 50 active fire stations, employs over 1,100 personnel, and serves more than 60 communities/cities and all unincorporated areas of San Bernardino County. From 2022 to 2023, the SBCoFD responded to over 133,000 calls for service (SBCoFD 2023a). The Project Area is within Division 4 (South Desert), which consists of seven fully staffed fire stations and one fire station contracted with the Colorado River Indian Tribe (Station No. 17) (SBCoFD 2023b). The nearest SBCoFD fire stations to the Project Area are Station No. 32 is at 1113 East Broadway Street in Needles, approximately 81 miles southeast of the Project Area, and Station No. 53 is at 72734 Baker Boulevard in Baker, approximately 81 miles west of the Project Area, within Division 5 (SBCoFD 2023b).

The SBCoFD does not currently have established performance standards; however, the San Bernardino Countywide Plan (CWP) contains policies and programs related to fire protection services calling for the adoption of a Countywide Fire Protection Master Plan that would use National Fire Protection Association (NFPA) Standards 1710 and 1720 as goals for creation of standards of cover (County of San Bernardino 2016). For locations within eight miles of a station, these standards call for a response time of less than 14 minutes for the arrival of the first company to 90% of incidents and a minimum of six personnel. For locations farther than eight miles from a station, the standards do not specify a response time. As mentioned above, the closest fire station to the Project Area is farther than eight miles.

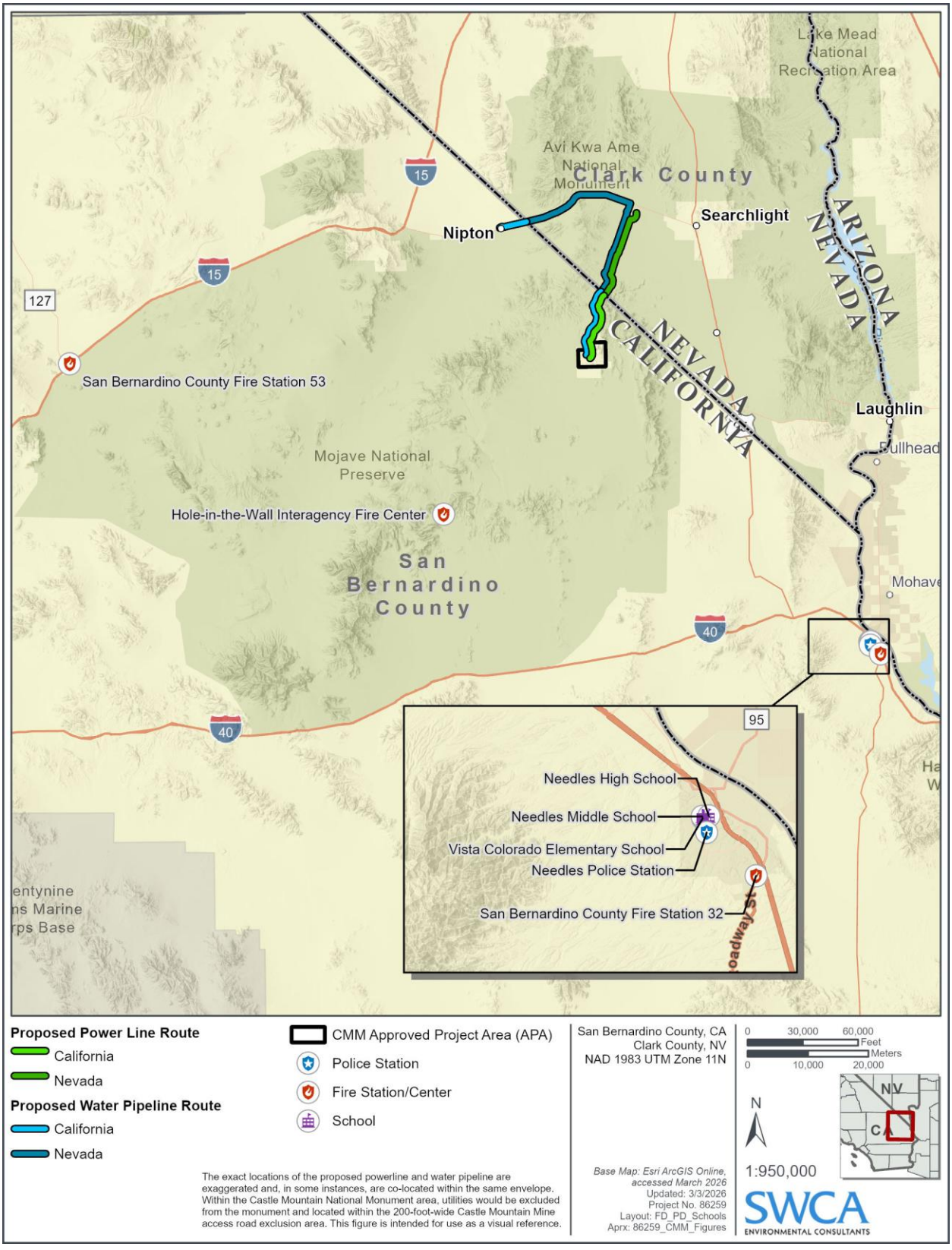


Figure 4.14-1. Public Services

POLICE PROTECTION

The Project Area is within the service area of the San Bernardino County Sheriff's Department (SBCSD). The SBCSD has a staff of approximately 4,200 and eight SBCSD and 14 contract patrol stations located throughout San Bernardino County. The SBCSD's dispatch center takes in approximately 965,959 calls for service annually. As shown in Figure 14.4-1, the nearest sheriff's office to the Project Area is the Needles Station located at 1111 Bailey Avenue in Needles, approximately 80 miles southeast of the Project Area (SBCSD 2026). The SBCSD Needles Station personnel and the community have access to specialty resources offered by the Sheriff's Department, including Narcotics, Special Weapons and Tactics (SWAT), Arson-Bomb, Crimes Against Children, Homicide, Scientific Investigations/Crime Lab, Aviation, and Volunteer Forces (SBCSD 2026).

The California Highway Patrol has primary responsibility for all traffic enforcement and collision investigations that occur on state highways, freeways, and unincorporated areas.

PUBLIC SCHOOLS

The Project Area is within the Needles Unified School District. The district operates the following nine schools: Chemehuevi Valley Elementary School, Monument Peak Elementary School, Vista Colorado Elementary School, Needles Middle School, Monument Peak High School, Needles Community Day, Needles High School, Educational Training Center Adult School, and Needles Adult Education Center. There were a total of 930 students enrolled in the district during the 2023–2024 academic year (California Department of Education 2024). As shown in Figure 14.4-1, Vista Colorado Elementary School, Needles Middle School, and Needles High School are the nearest schools located approximately 40 miles southeast of the Project Area.

PARKS

The San Bernardino County (County) Regional Parks Department operates nine regional parks, one regional trail, and one preserve throughout San Bernardino County, totaling more than 8,000 acres (San Bernardino County Regional Parks Department 2026). The nearest regional park to the Project Area is the Moabi Regional Park, located at 100 Park Moabi Road in Needles, approximately 91 miles southeast of the Project Area. The closest local recreational facility is the Searchlight Town Park in Searchlight, Nevada. The facility is located approximately 15 miles from the Project Area (Clark County 2025). The nearest local recreational facility in California is approximately 50 miles west of the Project Area at Chet Huffman Park, in the town of Baker, California (Baker Community Services District 2018).

OTHER PUBLIC SERVICES

The nearest hospital with an emergency room to the Project Area is Exceptional Community Hospital, located at 2365 AZ-95 in Bullhead City, Arizona. The nearest library to the Project Area is the Searchlight Library, located at 200 Michael Wendell Way in Searchlight, Nevada.

4.14.1.2 Utilities and Service Systems

Historically, from 1988 to 1997, the mining operation provided its own water, sewage, and sanitation services; trash disposal; and access road construction and maintenance. The mine received electrical power from Nevada Power Company until the service line was removed during interim land reclamation activities in 2011. Ancillary structures are distributed throughout the CMM Project Area, which were originally approved in the "Approved Plan Area (APA)" in the 1998 Plan; however, many of the facilities have since been relocated to accommodate the expanded pits and overburden piles proposed under the 2022 Plan. The facilities have been furnished with water, heat, and sewage to conform to the County

Building and Safety Department and County Department of Environmental Health Services (DEHS) requirements, as described further below.

ELECTRICITY

Electrical infrastructure surrounding the Project Area includes two 220-kilovolt (kV) high-voltage electric transmission lines owned by Southern California Edison and the Mead-Adelanto 500-kV transmission line operated by the Los Angeles County Department of Public Works. The Mead-Adelanto Transmission Project is a 202-mile, 500-kV alternating current transmission line that extends between a southwest terminus at the Adelanto substation in Southern California and a northeast terminus at Marketplace Substation, approximately 17 miles southwest of Boulder City, Nevada. The transmission line has a transfer capability of 1,291 megawatts (MW) (Southern California Public Power Authority [SCPPA] 2024). Electrical power supply for the Project Area has historically come from the Searchlight, Nevada, electrical substation via a high-voltage (69-kV) powerline, which followed a path parallel to Nevada State Route 164 and turned south along the Project access road. Reclamation of former operations required removal of power poles and the installed powerline from the Project substation to a termination point near Walking Box Ranch. Power poles between the Searchlight substation and this point of termination remain largely intact for potential reutilization. The surrounding area also boasts a significant number of solar power-generating stations on both the California and Nevada sides of the local border. Project Phase I operations use on-site power generation via diesel-fired power generators. This main power plant, located adjacent to the carbon column plant, includes four Tier 4F 455-kilowatt (kW) Diesel Generator Sets. In addition, there are another six smaller diesel generators at areas around the Project Area, ranging from 36 kW to 240 kW (M3 Engineering and Technology [M3] 2021).

NATURAL GAS

According to Southern California Gas Company's (SoCalGas) Natural Gas Pipeline Map for San Bernardino County, a natural gas transmission pipeline is approximately 26 miles south of the Project Area. Proximity to the Las Vegas/Henderson metropolitan area provides access to several fuel distribution sources for both diesel and natural gas (M3 2021).

TELECOMMUNICATION FACILITIES

The Project Area currently has a connection to an Internet Service Provider (Century Link) via the Crown Castle Tower, East Ridge Repeater, and Big Chief Tower, and via the operating Phase I Administration Building.

WATER SUPPLY

The water source for current operations at the CMM is groundwater. Per California laws and judicial precedent pertaining to groundwater rights, CMV has maintained its historic overlying water rights to groundwater aquifers in the Lanfair basin by using extracted water for beneficial use within the basin. Currently, CMM relies on three groundwater wells in the West Well Field (WWF) and three pit dewatering wells in the East Well Field (EWF). WWF wells predominantly source water from wells drilled into saturated alluvium northwest of the Project Area, whereas EWF wells source water from deep bedrock wells located along large fault zones throughout the mining area. The latter will also function as pit dewatering wells as the mine pit depth increases. The WWF wells are predominantly used to provide potable water to mine facilities. CMM is currently authorized by the BLM and the County to use 625 acre-feet of groundwater per year.

WASTEWATER

The CMM facilities have been furnished with sewage to conform to the County Building and Safety Department and DEHS requirements. On-site existing sewage will flow by gravity to local septic systems located in proximity to points of use.

The Colorado River Basin Region Regional Water Quality Control Board (RWQCB) regulates surface and groundwater quality for waters of the state and waste discharges to land/water for the Project Area, pursuant to California Water Code, and CCR Title 27CCR. Specific to the type of activity at the Project Area, the RWQCB regulates discharges of mining waste; operation of a waste management unit for treatment, storage, or disposal of mining waste (mining unit); and stormwater discharges associated with industrial or construction activity. For a mine operation, the RWQCB typically considers only overburden rock piles as mining units (or mining waste), per CCR Title 27. While overburden is technically a recognized waste, mine waste is not expected to affect surface or groundwater quality (M3 2021).

SOLID WASTE

The existing operations currently generate both hazardous and nonhazardous solid waste. Nonhazardous solid waste is recycled or disposed of at a landfill by third parties who manage the appropriate handling and disposal of nonhazardous solid waste. The San Bernardino County Solid Waste Management Division (SBCSWMD) is responsible for the operation and management of the County's solid waste disposal system, which consists of five landfills and nine transfer stations. As shown in Figure 4.14-2, the Barstow Sanitary Landfill and Victorville Sanitary Landfill are the closest landfills to the Project Area. Table 4.14-1 summarizes the two nearest active permitted Class III solid waste disposal facilities (landfills) to the Project Area that accept construction/demolition solid waste and provides data on daily throughput, permit capacity, remaining capacity, and total number of enforcement actions from state or local agencies on record. Hazardous wastes are stored, recycled, or disposed of according to rules and regulations implemented by the County DEHS and the DTSC, and that are acceptable to the BLM and the County. Fuels and CN are the main hazardous materials that would be stored on-site. The storage locations of hazardous materials and chemical reagents transported to the Project Area are identified in the *Castle Mountain Mine Plan of Operation & Reclamation Plan – Amendment* (CMV 2025).

Barstow Sanitary Landfill is at 32553 Barstow Road in Barstow, approximately 111 miles southwest of the Project Area. The approximately 645-acre active solid waste disposal facility accepts Class III waste, including biosolids, mixed municipal, industrial, construction/demolition, and agricultural wastes (California Department of Resources Recycling and Recovery [CalRecycle] 2026a). Currently, only 331 acres are permitted for solid waste management. The permit capacity for the facility is 80,354,500 cubic yards per day (CYD), and as of January 2026, the facility has approximately 68,361,526 CYD of remaining capacity. The maximum permitted throughput for the facility is 1,500 tons per day (TPD). The facility has three recorded violations of minimum state standards.

Victorville Sanitary Landfill is at 18600 Stoddard Wells Road in Victorville, approximately 130 miles southwest of the Project Area. The approximately 491-acre active solid waste disposal facility accepts Class III waste, including wood waste, tires, biosolids, mixed municipal, construction/demolition, industrial, and agricultural wastes (CalRecycle 2026b). The permit capacity for the facility is 93,400,000 CYD, and as of January 2026, the facility has approximately 79,400,000 CYD of remaining capacity. The maximum permitted throughput for the facility is 3,000 TPD. The facility has four recorded enforcement actions by state and local regulatory agencies.



Figure 4.14-2. Landfills

Table 4.14-1. Nearest Solid Waste Disposal Facilities to the Project Area

Facility	Location	Class	Permitted Capacity (CYD)	Remaining Capacity (CYD)	Permitted Throughput (TPD)	Estimated Closure Date
Barstow Sanitary Landfill	32553 Barstow Road, Barstow, CA 92311	III	80,354,500	68,361,526	1,500	5/1/2071
Victorville Sanitary Landfill	18600 Stoddard Wells Road, Victorville, CA 92307	III	93,400,000	79,400,000	3,000	10/1/2047

Source: CalRecycle (2026)

In addition, there are two transfer stations in the vicinity of the Project Area, which both accept tire, solid waste, hazardous waste, and inert material waste: The Baker Transfer Station is at 72799 Sodabaker Road in Baker, approximately 83 miles west of the Project Area, and the Newberry Springs Transfer Station is at Poniente Drive and Autumn Leaf Road in Newberry Springs approximately 136 miles southwest of the Project Area.

4.14.2 Regulatory Setting

4.14.2.1 Federal

CLEAN WATER ACT

The Clean Water Act (CWA), formerly known as the Water Pollution Control Act, was introduced in 1948 as the first major U.S. law to address water pollution. With an increase in concern for controlling water pollution, the CWA was significantly reorganized and expanded in 1972. The 1972 amendments to the CWA established a regulatory framework for controlling pollutant discharges into waters of the United States (WOTUS), gave the U.S. Environmental Protection Agency (USEPA) authority to implement pollution control programs (such as setting wastewater standards for industry), and required permits for point-source discharges through the National Pollutant Discharge Elimination System (NPDES) permit program. Although federally mandated, the NPDES permit program is generally administered at the state level.

Additionally, the 1972 amendments funded the construction of sewage treatment plants under the construction grants program and recognized the need for planning to address the critical problems posed by nonpoint source pollution (USEPA 2025). The following CWA sections include relevant policies for regulating water quality:

- **Section 208** requires all states to assess damages to water quality from nonpoint source pollution, including runoff. Section 208 requires states to develop either regulatory or nonregulatory programs to control non-point-source pollution.
- **Section 303(d)** authorizes the EPA to assist states, territories, and authorized Tribes in listing impaired waters and developing total maximum daily loads (TMDLs) for the identified water bodies. A TMDL establishes the maximum amount of a pollutant allowed in a listed water body. In addition, a TMDL establishes a starting point for restoring water quality.
- **Section 304(a)(4)** requires the EPA to designate potential water pollutants as either conventional pollutants or toxic pollutants, based on the latest scientific knowledge regarding the effects of pollutants on water quality. Conventional pollutants include biochemical oxygen demand, total suspended solids, fecal coliform, pH, oil, and grease. The EPA has designated 126 priority toxic pollutants.

- **Section 313** requires that each federal agency that has jurisdiction over any facility or is engaged in an activity that may result in discharge or runoff of pollutants must comply with all federal, state, and local water pollution-control requirements—which may include adherence to all requirements, including reporting, recordkeeping, and/or permitting requirements.
- **Section 401** requires a water quality certification to be issued or waived by states and authorized Tribes prior to issuance of a permit or license to conduct activities that may result in discharge to WOTUS. In cases where a state or Tribe does not have authority, the EPA is responsible for issuing certification. The major federal licenses and permits subject to Section 401 include: (1) CWA Section 402 and 404 permits issued by the EPA or U.S. Army Corps of Engineers (USACE); (2) Federal Energy Regulatory Commission licenses for hydropower facilities and natural gas pipelines; and (3) Rivers and Harbors Act Section 9 and 10 permits.
- **Section 402** establishes the NPDES. Discharges of point-source pollutants to WOTUS are prohibited unless they are compliant with provisions of the CWA. Typically, compliance is achieved by obtaining authorization to discharge pursuant to an NPDES permit issued by the EPA or a state agency that has an approved NPDES program. NPDES permits generally contain water-quality and/or technology-based standards for effluent discharges, monitoring requirements, analytical testing methods, and reporting requirements.
- **Section 404** requires facilities that discharge dredged or fill materials into WOTUS to apply for a permit issued by the USACE.
- **Section 405** requires facilities that treated domestic sewage meet federal requirements for the use and disposal of sewage discharge through land application, surface disposal, or incineration. These requirements are incorporated to permits issued under CWA Section 402.

DESERT RENEWABLE ENERGY CONSERVATION PLAN

In September 2016, the BLM adopted the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA) to the California Desert Conservation Area (CDCA) Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan. The DRECP LUPA addresses solar, wind, geothermal energy generation, and transmission projects on 10.8 million acres of BLM-administered lands in the desert regions of Southern California (BLM 2016).

SAFE DRINKING WATER ACT OF 1974

The Safe Drinking Water Act of 1974 (SDWA) serves as the principal federal legislation governing the quality of drinking water in the United States. Originally passed by Congress in 1974, the SDWA aims to safeguard public health by regulating the nation's public water systems and their sources, including rivers, lakes, reservoirs, springs, and groundwater wells. Under the provisions of the SDWA, the USEPA is responsible for setting national standards for drinking water quality and overseeing the implementation of these standards by states, local governments, and water suppliers. In California, the USEPA has designated the California Department of Public Health as the lead agency for administering the state's drinking water program. The SDWA regulates contaminants in domestic water supplies by establishing maximum contaminant levels, which are codified under the CCR Title 22 Standards.

RESOURCE CONSERVATION AND RECOVERY ACT OF 1976

The Resource Conservation and Recovery Act (RCRA), enacted in 1976 as an amendment to the Solid Waste Disposal Act of 1965, was established to regulate the management of municipal and industrial solid waste across the United States. Under the RCRA, the USEPA is granted authority to oversee hazardous waste throughout its lifecycle, including generation, transportation, treatment, storage, and disposal. The RCRA also provides a regulatory framework for the management of nonhazardous solid

waste. In 1984 the federal Hazardous and Solid Waste Amendments (HSWA) to the RCRA were implemented to promote waste minimization, phase out land disposal of hazardous waste, and establish requirements for corrective actions in response to releases. The amendments enhanced the enforcement capabilities of the USEPA, introduced more rigorous hazardous waste management standards, and created a comprehensive underground storage tank program. Further amendments to the RCRA in 1986 expanded the authority of the USEPA to address environmental risks associated with the underground storage of petroleum products and other hazardous substances.

4.14.2.2 State

CALIFORNIA HEALTH AND SAFETY CODE

State fire regulations are set forth in Section 13000 et seq. of the California Health and Safety Code, which includes regulations concerning building standards, fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. The State Fire Marshal enforces these regulations and building standards in all state-owned buildings, state-occupied buildings, and state institutions throughout California.

CALIFORNIA FIRE CODE

The California Fire Code (24 CCR Chapter 9) contains regulations consistent with nationally recognized and accepted practices for safeguarding life and property from the hazards of fire and explosion; dangerous conditions arising from the storage, handling, and use of hazardous materials and devices; and hazardous conditions in the use or occupancy of buildings or premises. The California Fire Code also contains provisions to assist emergency response personnel.

CALIFORNIA EDUCATION CODE

California Education Code Section 17620 coincides with the Leroy F. Green School Facilities Act and authorizes the governing board of any school district to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the school district for the purpose of funding the construction or reconstruction of school facilities.

California Education Code Sections 41376 and 41378 identify the maximum class sizes and penalties for school districts with any classes that exceed the following established limits:

- Kindergarten: the average class size shall not exceed 31 students; no class larger than 33 students.
- First through Third Grades: the average class size shall not exceed 30 students; no class larger than 32 students.
- Fourth through Eighth Grades: in the current fiscal year (2018), the average number of students per teacher shall not exceed 29.9 (the statewide average number of students per teacher in 1964) or district's average number of students per teacher in 1964.

CALIFORNIA FIRE PLAN

The 2018 Strategic California Fire Plan directs each California Department of Forestry and Fire Protection (CAL FIRE) unit to prepare a locally specific Fire Management Plan (CAL FIRE 2018). These documents assess the fire situation within each of CAL FIRE's 21 units and six contract counties and include stakeholder contributions and priorities, as well as identify strategic areas for pre-fire planning

and fuels treatment. The unit plans are required to be updated annually with the Strategic California Fire Plan update in 2024.

While the Project Area falls within the 2023/2024 Strategic Fire Plan for the San Bernardino Unit, it is wholly on federal land, and there are multiple regional, state, and local agreements and operating plans currently in use that provide for mutual aid between and among federal, state, and local fire agencies (CAL FIRE 2024). These mutual aid systems exist to ensure that adequate resources, facilities, and other supports are provided to jurisdictions whenever resources prove to be inadequate for a given incident.

SAFE WATER DRINKING ACT

Similar to the federal SDWA, the California Safe Drinking Water Act (Health and Safety Code Section 116270 et seq.) protects public health by ensuring the safety of drinking water supplies. Under the statute, the California Department of Public Health is authorized to protect public drinking water supplies by establishing maximum contaminant levels for potable water. These regulatory thresholds are equivalent to, or more stringent than, those set by the USEPA at the federal level.

NPDES CONSTRUCTION GENERAL PERMIT

The State Water Board has issued a Statewide NPDES CGP for stormwater discharges associated with construction activities (known as the CGP [State Water Board Order No. 2009-0009-DWQ]). Order No. 2009-0009-DWQ was amended by Order No. 2010-0014-DWQ in November 2010, Order No. 2012-0006-DWQ in July 2012, and Order No. 20220057-DWQ in September 2022. Construction activities that disturb one acre or more of land, as proposed for the Project Area, are required to comply with the NPDES Construction General Permit. Applicants must obtain coverage under the Construction General Permit by electronically submitting permit registration documents through the Stormwater Multiple Applications and Report Tracking System (SMARTS). Required documentation includes a Notice of Intent, risk assessment, site map, and Stormwater Pollution Prevention Plan (SWPPP). Permit coverage must be secured prior to the commencement of construction activities. Both the risk assessment and SWPPP must be prepared by a state-qualified SWPPP developer.

CALIFORNIA WATER PLAN

California Water Code Sections 10004 through 10013 specify the components and characteristics of the California Water Plan prepared by the California Department of Water Resources (DWR). The California Water Plan provides a framework for the coordinated management, protection, conservation, development, and utilization of the state's water resources. The California Water Plan is updated every five years, with the most recent version, the California Water Plan Update 2023, adopted in December 2023. In accordance with the California Water Code, a Water Supply Assessment (WSA) must address several key considerations, including whether a public water system will serve the proposed Project, whether a current Urban Water Management Plan (UWMP) accounts for the project's water demand, whether groundwater is included as a supply source, and whether sufficient water supplies are available to meet the project's needs over the next 20 years.

CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT (AB 939)

The California Integrated Waste Management Act (AB 939, Sher, Chapter 1095, Statutes of 1989 as amended [IWMA]) mandated all California cities, counties, and approved regional solid waste management agencies to enact plans and implement programs to reduce the amount of solid waste disposed of in landfills by 50% by 2000. Additional legislation required the 50% diversion rate to be achieved every year. The primary objective of the IWMA is to promote the reduction, recycling, and reuse of solid waste to the greatest extent practicable. Under the IWMA, each city and county is required

to prepare, adopt, and submit a Source Reduction and Recycling Element (SRRE) to CalRecycle. The SRRE must demonstrate how the jurisdiction will achieve the mandated waste diversion goals and include specific components outlined in California Public Resources Code (PRC) Sections 41003 and 41303. Additionally, the SRRE must incorporate a solid waste management program that follows the established hierarchy: (1) source reduction; (2) recycling and composting; and (3) environmentally safe transformation and land disposal. The SRRE is required to prioritize and maximize feasible options for source reduction, recycling, and composting to minimize the volume of waste subjected to transformation and land disposal, as specified in PRC Sections 40051, 41002, and 41302. As landfill capacity diminishes and the establishment of new landfill sites becomes increasingly challenging, the importance of reducing solid waste generation is heightened. AB 939 currently requires local jurisdictions to divert at least 50% of their solid waste from landfills through recycling, conservation, and composting programs. The County is required to comply with these state regulations.

TITLE 22 OF THE CALIFORNIA CODE OF REGULATIONS DIVISION 4.5

The comprehensive requirements for the disposal and recycling of hazardous and universal wastes are established in CCR Title 22. It sets forth specific standards for the identification, collection, transportation, disposal, and recycling of hazardous wastes. In addition, Title 22 outlines requirements for the management of universal wastes, which are defined in Section 66273.9 and include items such as batteries, electronic devices, mercury-containing equipment, lamps, cathode ray tubes, and aerosol cans. The requirements encompass recycling, recovery, returning spent items to the manufacturer, or disposal at an appropriately permitted facility. Restrictions and standards for waste destination facilities and details authorization requirements for various waste handlers are further specified in 22 CCR Division 4.5. Title 22 incorporates the California Universal Waste Rule and includes additional regulations governing waste handling and disposal practices.

CALIFORNIA SOLID WASTE REUSE AND RECYCLING ACCESS ACT OF 1991 (SB 1327)

The California Solid Waste Reuse and Recycling Access Act of 1991 (PRC Chapter 18) was enacted in response to the insufficient availability of designated areas for the collection and loading of recyclable materials, which presented a substantial barrier to effective solid waste diversion. The act requires state and local agencies to facilitate access to solid waste management for source reduction, recycling, and composting activities. Each local agency is mandated to adopt an ordinance that ensures adequate provisions for the collection and loading of recyclable materials in development projects.

SUSTAINABLE GROUNDWATER MANAGEMENT ACT OF 2014

The Sustainable Groundwater Management Act of 2014 (SGMA) is managed by the DWR and provides a long-term statewide framework to protect groundwater resources. SGMA comprises a three-bill legislative package, including AB 1739, SB 1168, and SB 1319. The SGMA requires local agencies to form Groundwater Sustainability Agencies for high- and medium-priority basins. It is the responsibility of the Groundwater Sustainability Agencies to prepare and implement a Groundwater Sustainability Plan to mitigate overdraft.

CALIFORNIA WATER ACTION PLAN

The California Water Action Plan (WAP), published in January 2014, was developed to advance the state's progress toward sustainable water management. The WAP establishes three primary objectives: enhancing the reliability of water supplies, restoring critical species and habitats, and fostering a more resilient and sustainably managed water resources system. To achieve the goals set forth, the WAP outlines actions aimed at improving water supply reliability, restoring essential wildlife habitats and

species, and increasing the resiliency of California's water infrastructure and environment. The WAP is designed to enhance and build upon local initiatives through coordinated efforts among federal, state, and local governments; Tribal governments; regional agencies; and both public and private sectors.

4.14.2.3 Local

COUNTYWIDE INTEGRATED WASTE MANAGEMENT PLAN

The Countywide Integrated Waste Management Plan (CIWMP) was established in response to the California IWMA, which outlined the responsibilities of local governments regarding waste management programs and practices. The CIWMP serves to fulfill these statutory requirements at the county level and is subject to revision every 5 years. The CIWMP comprises four elements in addition to a Summary Plan. As part of the CIWMP, the County is required to demonstrate that a minimum of 15 years of disposal capacity is available to sufficiently accommodate the waste management needs of all jurisdictions within its boundaries. The Summary Plan outlines the County's goals and policies, provides an overview of integrated waste management challenges, and summarizes existing waste management programs. Additionally, it outlines the collaborative measures necessary for jurisdictions within San Bernardino County to achieve the 25% and 50% waste diversion targets. The CIWMP was most recently updated in April 2018 (County of San Bernardino 2018).

COUNTY OF SAN BERNARDINO DEPARTMENT OF PUBLIC WORKS, SOLID WASTE MANAGEMENT DIVISION

The County has adopted CALGreen, which includes mandatory construction and demolition waste recycling (County of San Bernardino 2022). Projects that have the potential to generate construction and demolition waste are required to submit a Construction and Demolition Solid Waste Management Plan (WMP) to identify the estimated quantity and location of recycling for construction and demolition waste resulting from the project. The goal of the WMP is to recycle, reuse, compost, and/or salvage a minimum of 50% by weight of the waste generated on-site. The WMP must be approved by the Solid Waste Management Division prior to issuance of building permits. An "Actual Material Disposal/ Diversion Worksheet" is required upon completion of construction that demonstrates the actual quantity of construction and demolition waste recycled.

SAN BERNARDINO COUNTY GROUNDWATER ORDINANCE NO. 3872

The County adopted this ordinance to help protect water resources in unregulated portions of the desert while not precluding its use. The ordinance requires a permit to locate, construct, operate, or maintain a new groundwater well within the unincorporated, unadjudicated desert region of San Bernardino County. CEQA compliance must be completed prior to issuance of a permit, and groundwater management, mitigation, and monitoring may be required as a condition of the permit. The ordinance states that it does not apply to "groundwater wells located on federal lands unless otherwise specified by inter-agency agreement." The BLM and the County entered into a memorandum of understanding, which establishes that the BLM will require conformance with this ordinance for all projects proposing to use groundwater from beneath public lands within the county.

SAN BERNARDINO COUNTYWIDE PLAN

The CWP seeks to inform land use decisions, particularly for activities commonly associated with public services, utilities, and service systems. The County Policy Plan, a component of the CWP, contains the long-term goals and policies that will guide County decisions, investments, and improvements toward achieving the countywide vision. The County Policy Plan represents a unique approach to county planning. It serves as the County's General Plan for the unincorporated areas, which is mandated by state

law, but it also includes policy direction for adult and child supportive services, healthcare, public safety, and other regional services the County administers in both incorporated and unincorporated areas. Relevant goals and policies from the Land Use, Safety, and Infrastructure and Utilities Elements of the County Policy Plan are summarized in Table 4.14-2 (County of San Bernardino 2020).

Table 4.14-2. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Land Use Element	
Policy LU-1.3	When determining fiscal impacts, we consider initial capital investments, long-term operations and maintenance, desired levels of service for public facilities and services, capital reserves for replacement, and impacts to existing uses in incorporated and unincorporated areas.
Safety Element	
Policy PP-1.1	The Sheriff's Department provides law enforcement services for unincorporated areas and distributes resources geographically while balancing levels of service and financial resources with continuously changing needs for personal and property protection.
Policy PP1.9	The Sheriff's Department periodically assesses their facility, equipment, and staffing needs and use the assessment to allocate funding resources in the annual budget and capital improvement program.
Policy PP-3.1	We maintain a sufficient number and distribution of fire stations, up-to-date equipment, and fully-trained staff to respond effectively to emergencies.
Policy PP-3.3	We maintain up-to-date equipment and fully-trained staff to provide urban search and rescue and swift water rescue emergency response.
Policy PP-3.6	We require that fire department facilities, equipment, and staffing required to serve new development are operating prior to, or in conjunction with new development.
Policy PP-3.13	We periodically assess our facility, equipment, and staffing needs and use the assessment to allocate funding resources in the annual budget and capital improvement program.
Infrastructure and Utilities Element	
Goal IU-1	**Water Supply.** Water supply and infrastructure are sufficient for the needs of residents and businesses and are resilient to drought.
Policy IU-1.1	**Water Supply.** The County requires that new development be connected to a public water system or a County-approved well to ensure a clean and resilient supply of potable water, even during cases of prolonged drought.
Goal IU-2	**Wastewater Treatment and Disposal.** Residents and businesses in unincorporated areas have safe and sanitary systems for wastewater collection, treatment, and disposal.
Policy IU-3.1	**Regional flood control.** The County maintains a regional flood control system and regularly evaluate the need for and implement upgrades based on changing land coverage and hydrologic conditions in order to manage and reduce flood risk. The County requires any public and private projects proposed anywhere in the county to address and mitigate any adverse impacts on the carrying capacity and stormwater velocity of regional stormwater drainage systems.
Policy IU-3.2	**Local flood control.** The County requires new development to install and maintain stormwater management facilities that maintain predevelopment hydrology and hydraulic conditions.
Policy IU-3.5	**Fair share requirements.** The County requires new development to pay its fair share of capital costs to maintain adequate capacity of the County's regional flood control systems.
Goal IU-4	**Solid Waste.** Adequate regional landfill capacity that provides for the safe disposal of solid waste, and efficient waste diversion and collection for unincorporated areas.
Goal IU-5	**Solid Waste.** Unincorporated area residents and businesses have access to reliable power and communication systems.
Policy IU-5.3	**Underground facilities.** The County encourages new and relocated power and communication facilities to be located underground when feasible, particularly in the Mountain and Desert regions.

Goal/Policy	Goal/Policy Description
Policy IU-5.4	**Electric transmission lines**. The County supports the maintenance of existing and development of new electric transmission lines along existing rights-of-way and easements to maintain the stability and capacity of the electric distribution system in southern California.
Policy IU-5.6	**Dig once approach.** The County encourages infrastructure, telecommunication, and utility planning and projects to coordinate so that improvements are made concurrently or in such a manner that minimizes disruption to rights-of-way and reduces costs.

4.14.3 Thresholds of Significance

4.14.3.1 Public Services

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to public services if the proposed Project would:

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection

Police protection

Schools

Parks

Other public facilities.

Each of these thresholds is discussed under Section 4.14.5, *Project-Specific Impacts and Mitigation Measures*, specifically under Section 4.14.5.1, *Public Services*, below.

4.14.3.2 Utilities and Service Systems

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to utilities and services systems if the proposed Project would:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Each of these thresholds is discussed under Section 4.14.5, *Project-Specific Impacts and Mitigation Measures*, specifically under Section 4.14.5.2, *Utilities and Service Systems*, below.

4.14.4 Impact Assessment Methodology

The following impact assessment is based on a review of public services facility planning documents and information obtained from the CWP documents. Impacts would be significant if deterioration of service ratios, response times, or other performance objectives resulted in the need for new facilities or the physical alteration of existing facilities would be required as a result of the Project, and whether the physical effects of any such facilities can be ascertained at this time. The following impact assessment also evaluates the potential for the proposed Project to require new or relocated utility infrastructure or exceed existing utility infrastructure capacities, and whether or not any necessary improvements may have the potential to cause significant environmental effects.

4.14.5 Project-Specific Impacts and Mitigation Measures

4.14.5.1 Public Services

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire Protection

IMPACT PS-1: THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, NEED FOR NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL IMPACTS, IN ORDER TO MAINTAIN ACCEPTABLE SERVICE RATIOS, RESPONSE TIMES OR OTHER PERFORMANCE OBJECTIVES FOR FIRE PROTECTION. *(NO IMPACT)*

According to CAL FIRE, the Project Area is within a Local Responsibility Area and a moderate Fire Hazard Severity Zone. Fire emergencies that may occur at the Project Area would be primarily responded to by either Station No. 32 in Needles or Station No. 53 in Baker, both of which are approximately 81 miles from the Project Area. Other fire protection services are available from mutual aid resources from throughout San Bernardino County and the state, when necessary. The likelihood of a construction accident or emergency incident that would require fire protection services would increase during the construction of the proposed Project. This is due to increased activity at the Project Area (approximately 500 temporary workers during peak construction activities), higher amounts of fuel on-site, and a greater number of ignition sources on-site. Throughout the proposed Project's construction phase, appropriate fire safety measures will be used to reduce the risk of an emergency, such as clearing, grubbing, and installing water tanks. Additionally, as discussed in Section 4.16, *Wildfire*, the Project's POD includes design features that would improve road conditions, passage, and use. The impact analysis identified the

following construction-related design features associated with emergency evacuation procedures and routes:

- No vehicle or equipment maintenance will be performed on roads or rights-of-way (POD 1.1.2).
- Application of dust repellent (POD 1.1.2).
- All personnel will be advised of their responsibilities under applicable federal, State, and County fire-prevention laws and reliability standards (POD 7.3).

Operation and maintenance of the proposed Project would be similar to the current operations on-site as implementation of the proposed Project includes an expansion of the existing and operating CMM. As such, the potential for an increase in operational fire risk is considered to be low as conditions would be similar and new fire risk sources would not be introduced. The proposed Project would follow all applicable building and fire codes, including NFPA Standards 1710 and 1720. Additionally, the fire water protection system incorporated for the CMM expansion will be divided into two areas: the process plant and the crushing and ancillary areas. The process area fire water system will be tied into an existing 10-inch fire water gravity-fed pipeline, which currently supplies water to a fire hydrant located at the generator station. This pipeline will distribute throughout the proposed new process plant and mill area to use in fire hydrants spaced at 300 feet. The crushing and ancillary fire water system will consist of a new separate 34 ×32-foot water tank with 190,000 gallons of capacity that will be fed from a new raw water system. Due to hydrant residual/static pressure requirements by the California Fire Code, the existing Raw/Fire Water Tank would not provide the necessary pressure at the crusher and ancillary facilities. Therefore, a new tank will be installed adjacent to the fine ore bin and would be able to provide two hours of fire water retention as well as feed dust suppression systems relating to the primary dump pocket (M3 2021). As mentioned above, the Project's POD includes design features that would improve road conditions, passage, and use. The impact analysis identified the following operation-related design features associated with emergency evacuation procedures and routes:

- The 18-mile Castle Mountain Mine access road will be graded quarterly and kept drivable (POD 1.1.2).
- No vehicle or equipment maintenance will be performed on roads or rights-of-way (POD 1.1.2).
- Non-routine road maintenance includes activities that generally only occur once every few years and may include replacing an existing culvert that spans one of the many ephemeral drainage crossings (POD 1.1.2).
- Application of dust repellent (POD 1.1.2).
- All personnel will be advised of their responsibilities under applicable federal, State, and County fire-prevention laws and reliability standards (POD 7.3).

Therefore, existing fire resources in the area and the proposed fire water protection system will be able to support the needs of the proposed Project. Emergency response personnel and mine personnel would be familiar with emergency evacuation procedures and routes. For these reasons, *no impact* to fire protection services would occur, and mitigation is not necessary.

Impact PS-1
The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

Police Protection

IMPACT PS-2: THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, NEED FOR NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL IMPACTS, IN ORDER TO MAINTAIN ACCEPTABLE SERVICE RATIOS, RESPONSE TIMES OR OTHER PERFORMANCE OBJECTIVES FOR POLICE PROTECTION. *(NO IMPACT)*

The Project Area is within the service area of the SBCSD and the nearest sheriff's office to the Project Area is the Needles Station located at 1111 Bailey Avenue in Needles, approximately 80 miles southeast of the Project Area (SBCSD 2026). The SBCSD Needles Station personnel and the community have access to specialty resources offered by the Sheriff's Department, including Narcotics, Special Weapons and Tactics (SWAT), Arson-Bomb, Crimes Against Children, Homicide, Scientific Investigations/Crime Lab, Aviation, and Volunteer Forces (SBCSD 2026). The California Highway Patrol has primary responsibility for all traffic enforcement and collision investigations that occur on state highways, freeways, and unincorporated areas.

The Project Area currently implements security measures, such as perimeter security fencing, signage, lighting, and a security gate, as public access to the Project Area is restricted. Exterior security lighting is currently installed to provide safe access to Project facilities as well as visual surveillance.

Construction of the proposed Project could increase the local employee population at CMM by up to 500 temporary workers during peak construction activities. The proposed Project includes implementation of a CTMP during Project construction, which will be prepared and submitted for County review prior to commencement of construction activities and will include construction traffic control measures to ensure that emergency access is maintained during Project construction. Because of the short-term nature of construction activities (approximately 18 months), Project construction activities would not require a new, or significantly interfere with an existing, risk management or emergency response for the Project Area.

The operation of the proposed Project could increase the local employee population at CMM by up to 400 employees. Expanded perimeter security fencing would be installed with the implementation of the proposed Project. Some portable lighting also could be required for essential nighttime maintenance activities. All lighting would be kept to the minimum required for safety and security; sensors, motion detectors, and switches would be used to keep lighting turned off when not required. With these security measures implemented, the proposed Project is not anticipated to generate a significant number of police response calls that could result in a substantial adverse physical impact requiring new facilities.

Overall, the proposed Project would not result in the need for additional police protective services or facilities; therefore, *no impact* to police protection services would occur, and mitigation is not necessary.

Impact PS-2
The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

Schools

IMPACT PS-3: THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, NEED FOR NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL IMPACTS, IN ORDER TO MAINTAIN ACCEPTABLE SERVICE RATIOS, RESPONSE TIMES OR OTHER PERFORMANCE OBJECTIVES FOR SCHOOLS. *(NO IMPACT)*

The proposed Project does not include residential uses and would not result in a substantial permanent increase to the local population. Although the proposed Project could temporarily increase the local population by up to 500 temporary workers during peak construction activities, it is not anticipated that these workers would permanently relocate their families to the area due to the temporary nature of this work. Construction employees would likely be sourced from the local construction industry or commute from the surrounding region and would not contribute to permanent population growth in the county.

Once construction is complete, the proposed Project would result in an increase of 400 personnel on-site; however, most new employees are anticipated to commute to the Project Area from either within San Bernardino County or from Clark County and would not contribute to population growth requiring the need for new or altered schools. Additionally, many construction workers are specialized in some skill (e.g., plumbers, steel workers, etc.) and are only on a specific job site for a limited duration to exercise their skill and generally are not on-site for the entire construction duration. Since the proposed Project would not result in a significant increase in permanent population growth within the county, the proposed Project is also not anticipated to result in a significant number of new school-aged children within the county. For these reasons, *no impact* would occur resulting from new school facilities or expansions of existing school facilities, and mitigation is not necessary.

Impact PS-3
The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

Parks

IMPACT PS-4: THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, NEED FOR NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL IMPACTS, IN ORDER TO MAINTAIN ACCEPTABLE SERVICE RATIOS, RESPONSE TIMES OR OTHER PERFORMANCE OBJECTIVES FOR PARKS. *(NO IMPACT)*

The San Bernardino County Regional Parks Department operates more than 8,000 acres of parkland. However, there is no existing designated parkland or public open space within the Project Area or the surrounding area. As mentioned above, the Project Area is not within the Mojave National Preserve and the proposed CMM expansion will not conflict with public lands in the Mojave National Preserve managed by the National Park Service. The proposed Project has the potential to increase short- and long-term employment opportunities within San Bernardino County and Clark County, however, implementation of the proposed Project would not require a significant number of new workers to relocate into the county that would require new or expanded public recreation facilities. Therefore, *no impact* to parks would occur, and mitigation is not necessary.

Impact PS-4
The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

Other Public Facilities

IMPACT PS-5: THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, NEED FOR NEW OR PHYSICALLY ALTERED GOVERNMENTAL FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL IMPACTS, IN ORDER TO MAINTAIN ACCEPTABLE SERVICE RATIOS, RESPONSE TIMES OR OTHER PERFORMANCE OBJECTIVES FOR OTHER PUBLIC FACILITIES. *(NO IMPACT)*

Construction of the proposed Project may temporarily increase the local population by providing up to 500 workers during peak construction activities. Additionally, implementation of the proposed Project would result in an increase of 400 employees in the Project Area. As mentioned above, the closest hospital and library to the Project Area are approximately 71 miles and 27 miles away, respectively. Based on the distance from these facilities to the Project Area, it is assumed that the employees at the CMM would not utilize these services regularly enough to result in a need for new or physically altered facilities. Although these workers could visit local healthcare facilities or libraries, any increase would be minimal and would not result in the need for new or expanded facilities or services. Therefore, *no impact* to other public services would occur, and mitigation is not necessary.

Impact PS-5
The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

4.14.5.2 Utilities and Service Systems

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

IMPACT UT-1: THE PROJECT WOULD REQUIRE EXPANDED WATER AND ELECTRIC POWER FACILITIES, THE CONSTRUCTION OF WHICH WOULD NOT CAUSE SIGNIFICANT ENVIRONMENTAL EFFECTS. *(LESS THAN SIGNIFICANT WITH MITIGATION)*

Water

The Phase II Expansion operations would effectively quadruple the annual mining rate from 18 million tons to 80 million tons, requiring 2,250 acre-feet per year of groundwater. To meet this demand, CMV would construct the 31.5-mile (168,255-linear-foot) Ivanpah Water Pipeline crossing both public and private lands in San Bernardino County, California, and Clark County, Nevada. The estimated duration of the short-term waterline right-of-way (ROW) would be two years following the start of construction. The estimated duration of the long-term waterline ROW would be 20 years for operation and maintenance, and up to 10 years for final reclamation.

Construction would involve excavating a trench up to six feet deep and 30 inches wide, installing 10-inch-diameter steel and high-density polyethylene pipes, and restoring topsoil and vegetation per BLM requirements. A 10-foot-wide unimproved dirt maintenance road would be established above the buried pipeline for inspection and maintenance throughout the lifespan of the proposed Project.

Although implementation of the proposed Project would require expansion and construction of water supplies, these proposed actions would not cause significant environmental effects as all of the proposed temporary and permanent disturbances for the utility ROWs are located adjacent to existing roads; along Nevada State Route 164, all disturbances are proposed entirely within the existing NDOT ROW.

As described further in Section 4.4, *Biological Resources*, general biological and reconnaissance surveys for avian species were conducted for the Ivanpah Underground Waterline and 69kV Overhead Powerline Rights-Of-way (ROW) Project by Glenn Lukos Associates, Inc. (GLA 2024). The study area for these surveys included 30 linear miles of approximately (403.9 acres) of the Ivanpah ROW (Ivanpah ROW study area). GLA biologists conducted surveys for avian species within each habitat type throughout the Ivanpah ROW study area. Avian species were evaluated and detected by direct observation and

vocalizations. Descriptions of the special status avian species observed, detected, or with potential to occur within the study area are included in Section 4.4. Detailed methods, results, and species observations are provided in the *Report of Biological Surveys for the Ivanpah Underground Waterline and 69kV Overhead Powerline Rights-Of-Way Project, Located in Unincorporated San Bernardino County, California and Unincorporated Clark County, Nevada* (GLA 2024). GLA concluded that there is potential for desert bighorn sheep to be directly impacted by implementation of the proposed Project through permanent removal of mountain habitat in the Castle Mountains along the proposed water and powerlines running from south to west-northwest of Hart Peak. There is also potential for bighorn sheep to be indirectly impacted through temporary disturbance and temporary habitat fragmentation due to the construction of the proposed water and powerlines and through long-term disturbance due to maintenance of the proposed water and powerlines. As such, the Applicant has identified and committed to implementing Applicant-Proposed Measures (APMs) as part of the proposed Project to avoid or substantially lessen potentially significant impacts to biological resources, to the extent feasible. APM BIO-8 and APM BIO-9 have been implemented into the proposed Project's design to lessen these potential impacts.

Temporary impacts to non-wetland waters may result from installation of the 31.5-mile Ivanpah Water Pipeline and a 16.5-mile 69-kilovolt (kV) electrical transmission line (for California portion of site). No permanent impacts to aquatic resources would result from the installation of the electrical transmission line, as aquatic resources would be spanned. Implementation of MM-BI-3.1 would minimize potential impacts to sensitive natural communities.

As described further in Section 4.5, *Cultural and Tribal Cultural Resources*, Class III cultural resources inventories of CMM were conducted in 2018 by ASM Affiliates (Powell and Winslow 2018) and in 2021 by SWCA (Winslow 2021). A Class III study of the proposed water pipeline, transmission line, and staging areas was completed in 2025 by SWCA (Winslow and Vicari 2025). The three inventory reports cover the entirety of the area that may be physically impacted by the proposed Project. The indirect impact area consists of a 1-mile buffer surrounding portions of the Project footprint that contain proposed elements that could change the integrity of the setting, feeling, or association of historical resources within or near the Project corridor. An analysis of indirect impacts to cultural resources was completed for the proposed Project in 2026 by SWCA (McMurray et al. 2026).

Two historic built environment resources that qualify as historical resources under CEQA were identified within the utility ROW of the Project Area—the Nipton townsite (P-36-003066/CA-SBR-2066H) and two earthen levees that are associated with the larger Nipton townsite (P-36-024864/CA-SBR-2486H). The Nipton townsite (P-36-003066/CA-SBR-2066H) will be avoided through Project design; however, a portion of the earthen levees (P-36-024864/CA-SBR-2486H) will be directly impacted by the proposed Project. As a result of this analysis, it was determined that development of the proposed Project could impact significant historical resources and that mitigation measures are necessary to reduce or avoid impacts to less-than-significant levels. Upon implementation of Mitigation Measure MM-CR-1.1, the proposed Project would not cause a substantial adverse change in the significance of historical resources pursuant to State CEQA Guidelines Section 15064.5. Ground-disturbing activities also have the potential to encounter subsurface archaeological resources that have not been previously identified in the Project Area. The archaeological materials uncovered during Project development may possess the necessary attributes to be considered eligible for the CRHR. If archaeological resources discovered during ground-disturbing activities meet the eligibility requirements for listing in the CRHR and retain their integrity, they would be historical resources under CEQA. As a result of this analysis, it was determined that ground disturbance for the proposed Project could impact significant archaeological resources and that mitigation measures are necessary to reduce or avoid impacts to less-than-significant levels. Upon implementation of Mitigation Measure MM-CR-1.1, the proposed Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.

Therefore, impacts would be *less than significant with mitigation.*

Electric Power

The Phase II Expansion operations would require power utilities to be installed within existing ROW to support the expansion and would supply up to 25 megawatts of power. To meet these demands, CMV would construct a 16.5-mile overhead powerline. The proposed powerline would occur largely within existing ROWs in San Bernardino County, California, and Clark County, Nevada, and would cross public land managed by the BLM California NFO and the BLM Nevada Las Vegas Field Office.

A BLM long-term ROW grant would be required for the portion of the proposed Project located in San Bernardino County, California, to accommodate a 69-kV overhead powerline to provide grid electricity to the CMM. That portion of land consists of approximately 38,956 linear feet (about seven miles) of a 100-foot-wide ROW on public land, totaling approximately 89.4 acres, to accommodate the proposed 69-kV powerline. The 100-foot-wide ROW would encompass most of the existing CMM access road (30 feet wide) and would traverse both sides of the access road to the CMM, closely following the alignment of the previously removed powerline. No short-term ROW for the proposed powerline would be requested along the CMM access road in California. To avoid crossing a small section of the Mojave National Preserve, the powerline and its ROW would shift east of the CMM access road near the Mojave National Preserve boundary. The powerline would terminate within the CMM-approved boundary, near the proposed electrical substation, as outlined in the 2022 Plan, or approximately 2,798 feet inside the CMM boundary.

For the portion of the proposed Project located in Clark County, Nevada, a BLM long-term ROW grant would be required for approximately 49,499 linear feet (about nine miles) of a 100-foot-wide ROW on public land, totaling approximately 113.6 acres, for the proposed powerline. The ROW would begin at the Walking Box Ranch transformer and turn southwest, including the width of the existing CMM access road and traversing both sides of the road to the California-Nevada state line, closely following the previously removed powerline alignment. No short-term ROW for the proposed powerline would be required along the CMM access road in Nevada. The estimated duration of the long-term powerline ROW would be 20 years for operation and maintenance and up to 10 years for final reclamation.

The powerline would consist of approximately 272 wood single-pole structures, spaced about 300 feet apart and ranging from 52 to 70 feet in height, with each pole site requiring a 10 × 10-foot pad area. Construction would use an auger or backhoe for excavation, and all work would comply with National Electrical Safety Code (NESC) standards. Aluminum conductors and shield wires would be installed, with wires maintained at least 22 feet above ground. As described further above, APM BIO-8 and APM BIO-9 have been implemented into the proposed Project's design to lessen potential impacts to biological resources related to implementation of the overhead powerline.

Impact UT-1
The Project would require expanded water and electric power facilities, the construction of which would not cause significant environmental effects.
Mitigation Measures
Implement Mitigation Measures MM-BI-3.1 and MM-CR-1.1.

Impact UT-1
Impacts Following Mitigation
Implementation of MM-BI-3.1 would reduce substantial adverse effects on federally protected wetlands as defined by Section 404 of the Clean Water Act to less than significant with mitigation. Implementation of MM-CR-1.1 would address the substantial adverse change in the significance of historical resources and archaeological resources, and impacts would be less than significant with mitigation.

IMPACT UT-2: THE PROJECT WOULD REQUIRE EXPANDED WASTEWATER TREATMENT, STORMWATER DRAINAGE, NATURAL GAS, AND TELECOMMUNICATIONS FACILITIES, THE CONSTRUCTION OF WHICH WOULD NOT CAUSE SIGNIFICANT ENVIRONMENTAL EFFECTS. *(NO IMPACT)*

Wastewater

The proposed Project would not be connected to a public wastewater system or cause waste that would be treated in an existing wastewater treatment plant. The CMM facilities have been furnished with sewerage to conform to the County Building and Safety Department and DEHS requirements. On-site sewage will continue to flow by gravity to local septic systems located in proximity to points of use. Septic systems and leach fields will be sized appropriately for building occupancy and would not require or result in the relocation or construction of new wastewater facilities that would cause significant environmental impacts. Therefore, *no impact* would occur, and mitigation is not necessary.

Stormwater

Current federal and state water quality regulations, along with the proposed SWPPP, aim to maintain compliance with stormwater, water quality, and waste discharge standards throughout all phases of the proposed Project, including construction and operations. An analysis was conducted by M3 to understand peak discharge and runoff volumes to determine requirements for managing of surface flows around and through the Project Area as they relate to the proposed improvements for the Phase II expansion. The hydraulic analysis was conducted using the San Bernardino Hydraulic Manual Guidelines as a basis for the review on the premise of a 24-hour, 100-year storm event. Watershed volumes and maximum surface water elevations were evaluated to develop criteria for effective handling of the water and to minimize erosion concerns. Existing diversion channels and culverts around the north end of the heap leach pad and the northern extents of the Project Area will continue to direct flow around and through re-graded surfaces to the natural channel, which has handled much of this flow historically (M3 2021). The proposed heap leach pads and the comminution plant would be sited on gentle slopes to maximize gravity flow, minimize grading, and reduce impacts on natural drainage and floodplains. Additionally, the Project would comply with current federal and state water quality regulations, along with the proposed SWPPP. The proposed Project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. Therefore, *no impact* would occur, and mitigation is not necessary.

Natural Gas

To meet the increased energy demand associated with the Phase II expansion, the proposed Project includes transitioning from existing fuel-powered generators to more efficient liquified natural gas (LNG) microturbines, with most existing generators decommissioned or retained solely for emergency backup. Thirteen compact LNG microturbine units, each approximately 30 feet in length, would provide approximately 10 MW of on-site generation. LNG would be delivered via truck (approximately three truckloads per day) and stored in aboveground tanks located adjacent to the turbines. The microturbines

and associated storage tanks would be sited entirely within previously disturbed areas near the relocated mine administration offices and parts warehouse, thereby avoiding new land disturbance. Implementation of the LNG microturbine system would increase operational efficiency and reduce reliance on the electrical grid. Therefore, *no impact* would occur, and mitigation is not necessary.

Telecommunications

Uninterruptible power supplies will be used to provide back-up power to critical control systems. This equipment would be sized to permit operations to shut down and back up the computer and control systems, and to facilitate start-up on restoration of normal generator power. Battery power packs would supply back-up power to fire alarm systems and egress lighting fixtures (M3 2021). The Phase II expansion will continue to utilize existing communication connections. The Phase I Administration Building is the starting point for the layout of the new Phase II Fiber Optic campus backbone for site communications, including process, process cameras, security, fire, and Voice over Internet Protocol (VoIP)/Data. The main fiber optic trunk will be routed from the Phase I Administration Building to the Phase II Grinding Area Server Room through an information technology (IT) firewall to the Process Historian and on to the Process firewall. The Grinding Area Server Room will be the hub for distribution for other areas. Further consideration was included for cybersecurity by the utilization of a Unified Threat Management (UTM) unit, a Network Intrusion Detection System (NIDS) unit, and a Security Event Management (SEM) unit linked to the Network Administration. The existing control system utilizes a Rockwell Automation solution and Rockwell will be used for the Phase II expanded control system to ensure a common platform and the ease of merging the two systems. The plan is to leave the Phase I control system intact and undisturbed so that it may continue to function as operations require, and it would then interface with the Phase II controls to allow operation from either control room. Phase II servers that are in the Grinding Area Server Room will be the central area for various areas' Programmable Logic Controller (PLC) to report to, with the Human Machine Interfaces (HMI(s)) being located in the Grinding Control Room. Other HMI(s) would be located at the Primary Crusher Control Room to allow control of the Primary Crusher, Secondary Crusher, and Screen/Transfer up to Fine Ore Storage. All required information from the primary crushing area would still be trended and historized in the Grinding Servers (M3 2021). Therefore, *no impact* would occur.

Although implementation of the proposed Project would require expansion and construction of natural gas and telecommunications, these proposed actions would not cause significant environmental effects. Therefore, *no impact* would occur, and mitigation is not necessary.

Impact UT-2
The Project would require expanded wastewater treatment, stormwater drainage, natural gas, and telecommunications facilities, the construction of which would not cause significant environmental effects.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

IMPACT UT-3: THE PROJECT WOULD HAVE SUFFICIENT WATER SUPPLIES AVAILABLE TO SERVE THE PROJECT AND REASONABLY FORESEEABLE FUTURE DEVELOPMENT DURING NORMAL, DRY, AND MULTIPLE DRY YEARS. *(LESS THAN SIGNIFICANT)*

The proposed Project would modify and expand water supply systems at the CMM site to meet increased demands for the heap leach processing, dust control, and essential mine operations. Currently, CMM relies on three groundwater wells in the WWF and three pit dewatering wells in the EWF. Three historical production wells in the WWF, which are already connected via existing underground pipelines to an existing 250,000-gallon water tank, are estimated to provide 150 gallons per minute (gpm) total. The water tank feeds an existing underground line that terminates near the mine and administration office complex and facilities. This system is primarily used for dust suppression under current operations and will continue in similar service for the expanded Phase II operation. Two production wells were drilled and completed in 2017 and had pumps installed in 2019 at the start of Phase I construction. They are currently providing the majority of site water make-up for current operations. These wells are located at the edge of the JSLA pit and what will eventually be the South Domes pit, respectively, and are bedrock wells that are estimated to be able to produce a combined total of up to 400 gpm. The wells have been fitted with new well pumps and serve a pipeline feeding the recently constructed 300,000-gallon raw water tank located on top of the historical Viceroy heap area. The wells will continue to operate in the expanded Phase II plans (M3 2021).

Phase II operations will require a continuous supply of water, generally averaging 1,500 gpm and up to 1,900 gpm under peak demand in the dry season. To support higher mining rates, the proposed Project includes expanding the EWF in the Lanfair Basin with up to seven additional pit dewatering wells, as well as developing the new Northwest Water System (NWS) in the Ivanpah Valley Basin. The NWS is anticipated to provide 840 to 1,340 acre-feet per year of water. Additional mine site production wells will be located in an area to the south and southwest of the process plant to provide additional make-up water for Phase II. A series of five monitoring wells was drilled in 2020 in the area south of the Project Area and these holes have also served to evaluate groundwater potential and to improve the understanding of the hydrogeology in the basin fill and bedrock of Lanfair Valley. It is anticipated that, once developed, wells in this area will produce between 500 and 1,000 gpm of water (M3 2021). Combined, water use from the Lanfair and Ivanpah Valley Basins would range from 830 to 1,340 acre-feet per year from each source, with a total permitted maximum of 2,250 acre-feet annually. This expansion would result in an increase of up to 1,625 acre-feet per year in groundwater use.

Additionally, the technical reports prepared for the proposed Project—Updated Water Supply Assessment (GLA 2023) and Evaluation of Planned Pumping in Ivanpah Basin (GLA 2022)—concluded that based on field data and groundwater modeling, planned groundwater pumping in the Lanfair and Ivanpah Basins is sustainable throughout the planned active life of CMM and that potential effects on local groundwater resources will be minor regardless of drought conditions. Groundwater quality within CMM's planned pumping locations is relatively stable and will be adequate for long-term mining operations. See Impact HYD-2 in Section 4.10, *Hydrology and Water Quality*, for further analysis on impacts to groundwater supply. There would be sufficient water supplies available to serve the proposed Project during normal, dry, or multiple dry year scenarios. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact UT-3
The Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years.
Mitigation Measures
Mitigation is not necessary. Impact UT-3 would be less than significant.

c) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

IMPACT UT-4: THE PROJECT'S FACILITIES WOULD HAVE ADEQUATE CAPACITY TO SERVE THE PROJECT'S PROJECTED WASTEWATER GENERATION. *(NO IMPACT)*

As mentioned above, the proposed Project would not be connected to a public wastewater system or cause waste that would be treated in an existing wastewater treatment plant. The CMM facilities have been furnished with sewerage to conform to the County Building and Safety Department and DEHS requirements. Therefore, the proposed Project's facilities would have adequate capacity to serve the projected wastewater generation and *no impact* would occur.

Impact UT-4
The Project's facilities would have adequate capacity to serve the Project's projected wastewater generation.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

IMPACT UT-5: THE PROJECT WOULD NOT GENERATE SOLID WASTE IN EXCESS OF STATE OR LOCAL STANDARDS, OR IN EXCESS OF THE CAPACITY OF LOCAL INFRASTRUCTURE, OR OTHERWISE IMPAIR THE ATTAINMENT OF SOLID WASTE REDUCTION GOALS. *(LESS THAN SIGNIFICANT)*

Construction

Construction of the proposed Project would generate solid waste that would be periodically sorted and transported to an off-site disposal facility authorized to accept the waste. Nonhazardous construction waste would be recycled or disposed of at a Class III landfill, such as the Barstow Sanitary Landfill or Victorville Sanitary Landfill, identified in Table 4.19-1. Based on the *Castle Mountain Mine 2022 Plan Amendment Technical Support Document for Air Quality, Climate, and Energy Analyses* (Ramboll

Americas Engineering Solutions, Inc. [Ramboll] 2025; EIR Appendix 4), the industrial waste generation rate is 8.93 pounds per day per employee. As such, the estimated 500 temporary construction workers would generate approximately 4,465 pounds of solid waste per day, or 739 tons per year. The proposed Project would employ third parties to manage the appropriate handling and disposal of non-hazardous solid waste. Considering there are multiple locations that would accept anticipated construction waste streams, and the solid waste landfills listed in Table 4.14-1 would have a collective remaining capacity of over 147 million cubic yards, waste generated from construction of the CMM expansion components would not exceed the capacity of surrounding accepting facilities. Therefore, Project construction would have a *less than significant impact* involving solid waste recycling, disposal capacity, and impaired attainment of solid waste reduction goals.

Operation and Maintenance

Project operation is expected to produce minimal amounts of solid waste, primarily from on-site workers conducting regular maintenance. As mentioned above, the industrial waste generation rate is 8.93 pounds per day per employee. As such, the estimated 400 additional employees on-site would generate approximately 3,572 pounds of solid waste per day, or 591 tons per year. This waste will be gathered by the workers either daily or as needed and will be taken to a certified landfill or recycling facility off-site for proper disposal. Considering there are multiple locations that would accept anticipated operational waste streams, and the solid waste landfills listed in Table 4.19-1 have a collective remaining capacity of over 147 million cubic yards, waste generated from operation of the CMM expansion would not exceed the capacity of surrounding accepting facilities. In terms of mining waste, the proposed Project would expand the heap leach pad to accommodate up to 332 million tons of ore and the overburden sites to accommodate 352 million tons of rock waste. The proposed Project would result in an estimated 783 million tons of overburden production, with an estimated 400 million tons backfilled into northern pits and 338 million tons distributed to the overburden sites. To accommodate the proposed additional overburden storage, the North and South Overburden sites would require expansion to the west and east, respectively. To compensate for overburden sites that would be absorbed into the expanded mine pits, existing overburden sites would require expansion. Therefore, Project operation would have a *less than significant impact* involving solid waste recycling, disposal capacity, and impaired attainment of solid waste reduction goals.

Solid waste generated by Project construction and operation is not expected to impact landfill capacity. The proposed Project will adhere to all relevant federal, state, and local measures for reducing and recycling solid waste. Therefore, impacts related to landfill capacity would be *less than significant*, and mitigation is not necessary.

Impact UT-5
The Project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
Mitigation Measures
Mitigation is not necessary. Impact UT-5 would be less than significant.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

IMPACT UT-6: THE PROJECT WOULD COMPLY WITH FEDERAL, STATE, AND LOCAL MANAGEMENT AND REDUCTION STATUTES AND REGULATIONS RELATED TO SOLID WASTE. *(LESS THAN SIGNIFICANT)*

The proposed Project would adhere to the CALGreen standards and requirements for supporting the state's initiatives to reduce waste, enhance recycling activities, and decrease GHG emissions. At least 65% of waste generated during construction will be recycled in alignment with CALGreen objectives. Minimal amounts of solid waste will be generated during Project operation, and materials will be recycled where possible. Additionally, the proposed Project would expand the heap leach pad to accommodate up to 332 million tons of ore and the on-site overburden sites to accommodate 352 million tons of rock waste, and would not generate solid waste in excess of the capacity of local infrastructure, as described in response to Impact UT-4. The proposed Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. A licensed waste management company will transport collected waste to a dedicated off-site, third-party-controlled landfill site. Hazardous waste will be placed in drums, put on pallets, and stored in secure, impermeable, and appropriately sized containers, providing the required secondary containment, until being hauled off-site by a licensed contractor. Hazardous waste will be disposed of in a safe and environmentally sound manner using outside contractors (M3 2021). Although the proposed Project would result in solid waste generation during construction and operation, the proposed Project would comply with federal, state, and local management and reduction statutes and regulations. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact UT-6
The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.
Mitigation Measures
Mitigation is not necessary. Impact UT-6 would be less than significant.

4.14.6 Cumulative Impacts

4.14.6.1 Public Services

IMPACT PS-7: THE PROJECT WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE IMPACT RELATED TO PUBLIC SERVICES. *(LESS THAN SIGNIFICANT)*

The proposed Project and cumulative projects do not include a residential component and would not result in a significant population increase. Any temporary increases in workforce populations that the proposed Project and cumulative projects would cause would be small enough that the existing fire protection, police protection, public school system, and other public services could support the additional demand, and new or expanded infrastructure would not be required. For these reasons, the proposed Project in combination with cumulative projects would result in no cumulatively considerable impact to public services.

Impact PS-7 (Cumulative Impacts)
The Project would not result in a cumulatively considerable impact related to public services.
Mitigation Measures
Mitigation is not necessary. Impact PS-7 would be less than significant.

4.14.6.2 Utilities and Service Systems

IMPACT UT-8: THE PROJECT WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE IMPACT RELATED TO UTILITIES AND SERVICE SYSTEMS. *(LESS THAN SIGNIFICANT)*

Several other development projects are proposed within the vicinity of the Project Area. Together with the proposed Project, these projects could temporarily increase demand for solid waste disposal in San Bernardino County due to simultaneous increases in solid waste during construction and operation. However, this would not lead to a significant cumulative effect on utility service systems as all projects would adhere to existing state and local regulations on waste management, recycling, and landfill capacity within San Bernardino County. Therefore, the waste accepted by the Barstow Sanitary Landfill would not exceed capacity, and cumulative impacts to solid waste disposal would be less than significant. Similarly, the cumulative impact to utility service systems during Project operation is not expected to be significant. The proposed Project will source water from the proposed Ivanpah Water Pipeline and the proposed expansion of the EWF in the Lanfair Basin with up to seven additional pit dewatering wells. The Project Area is not currently served by a public wastewater treatment service provider; however, the CMM facilities have been furnished with sewerage to conform to the County Building and Safety Department and DEHS requirements and will therefore not contribute to cumulative impacts to water or wastewater infrastructure. Therefore, considering past, present, and reasonably foreseeable future projects, the cumulative impact regarding utilities and service systems during construction and operation would be less than cumulatively considerable.

Impact UT-8 (Cumulative Impacts)
The Project would not result in a cumulatively considerable impact related to utilities and service systems.
Mitigation Measures
Mitigation is not necessary. Impact UT-8 would be less than significant.

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4.15 TRANSPORTATION AND RECREATION

This section of the EIR analyzes potential impacts to the existing transportation network and recreational resources resulting from the implementation of the proposed Project. The analysis is based on a review of existing conditions, applicable laws, regulations, and guidelines, including Appendix G of the State CEQA Guidelines, and technical studies prepared for the proposed Project, including a Vehicle Miles Traveled (VMT) Screening Evaluation (Urban Crossroads 2025; EIR Appendix 9).

4.15.1 Existing Conditions

The Castle Mountain Mine (CMM) is in the Mojave Desert in the historic Hart Mining District of San Bernardino County, California, approximately 100 miles east of Barstow, California, 60 miles south of Las Vegas, Nevada, and 40 miles northwest of the U.S. Bureau of Land Management (BLM) Needles Field Office (NFO) in California. The Project Area is primarily in San Bernardino County, approximately 5 miles from the California-Nevada state line, with associated infrastructure improvements also located in Clark County, Nevada. The Project Area occupies private land owned by Castle Mountain Venture (CMV) and unpatented mining claims on BLM-administered land, as well as existing public road rights-of-way (ROWs) in unincorporated San Bernardino County and Clark County.

4.15.1.1 Regional and Local Roadway Facilities

The primary mode of travel in the vicinity of the Project Area is vehicular travel served by the regional and local roadway facilities. There are no transit services, no paved sidewalks, and no dedicated bicycle lanes within the Project Area. The existing transportation network surrounding the Project Area consists of U.S. and State Highways, a local road, and private roads (Figure 4.15-1).

REGIONAL ACCESS

I-15 is a major north–south freeway, consisting of four lanes with two lanes in each direction, that runs in a southwest–northeast alignment for approximately 287 miles, extending from the Mexican border to the Nevada state line. I-15 serves as a crucial transportation route for both commercial and passenger traffic, connecting cities and communities throughout San Bernardino County, Los Angeles County, and points farther southwest, as well as cities and communities in Nevada and to points farther northeast (e.g., San Diego, Riverside, Barstow, Las Vegas). The most recent data published by the California Department of Transportation (Caltrans) indicates the annual average daily traffic at the I-15/Nipton Road interchange is about 45,000 vehicles (Caltrans 2023).

I-40 is a significant east–west highway in the United States, running from Barstow, California, to Wilmington, North Carolina. The portion of I-40 in California is often referred to as the Needles Freeway. Beginning at its western endpoint at I-15 in Barstow, I-40 travels east along the edge of the Inland Empire metropolitan area, crosses the Mojave Desert in San Bernardino County, passes the Clipper Mountains, and continues to Needles. From there, it crosses the Colorado River into Arizona, just east of Needles. The most recent data published by Caltrans indicates the annual average daily traffic at the I-40/U.S. 95 interchange is about 40,600 vehicles (Caltrans 2023).

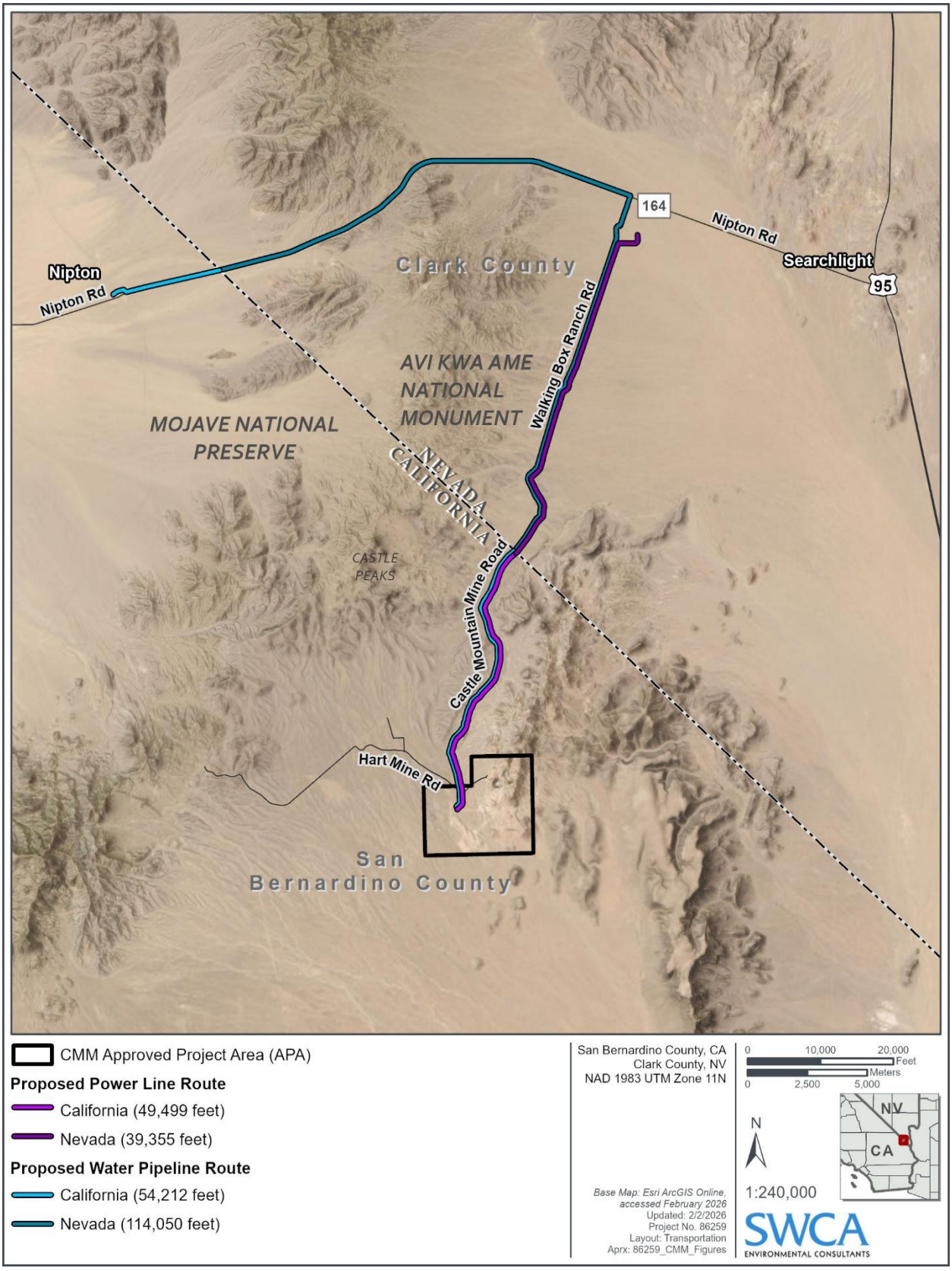


Figure 4.15-1. Project Location and Access

U.S. 95 is a north–south United States highway that passes through the eastern part of California, close to the border with Arizona and Nevada. In California, U.S. 95 runs for about 130 miles, mostly through remote desert areas. The highway enters California from Arizona near the city of Blythe, crossing the Colorado River. From there, it travels north through the Colorado Desert and the Mojave Desert, passing small communities such as Vidal Junction and Needles. North of Needles, the highway continues through the desert before crossing into Nevada near the town of Cal-Nev-Ari. The most recent data published by Caltrans indicates the annual average daily traffic at the U.S. 95/Nevada Stateline interchange is about 3,750 vehicles (Caltrans 2023).

I-15, I-40, and U.S. 95 have all been designed to hold a capacity of 1,850 vehicles per lane per hour during the peak hour (Caltrans 2020a). On all roads in San Bernardino County, oversized/overweight load permits are required for vehicles over 65 feet long, over 80,000 pounds in gross weight, over 14 feet high, or over 8 feet and 6 inches wide.

LOCAL ACCESS

Road access to CMM is via an 18-mile gravel road connecting to Nevada State Route 164 (Nipton Road) seven miles west of Searchlight, Nevada. Site access through this route was chosen as the environmentally preferred alternative site access route developed during the public scoping process for the 1990 Final EIS/EIR. While most of the Nevada portion of the road existed during the 1990 EIS/EIR, there were only road segments throughout this area in California. CMV connected these segments to construct the full 18-mile access road, initially identified as the Castle Mountain Mitigated Access Route. However, it is now more generally known as the CMM Access Road or Walking Box Ranch Road. CMV maintains the road, though it is a public road under the jurisdiction of the BLM and San Bernardino County (County). Additional emergency access/evacuation routes are provided by Hart Mine Road and New York Mountain Road. These roads are generally unimproved dirt roads and are mostly used for recreational purposes (NPS 2021a).

4.15.1.2 Recreation Resources Surrounding the Project Area

Recreational resources in the Project Area primarily include federally managed open space areas accessible to the public for outdoor recreational activities (Figure 4.15-2). According to the NPS, recreation in the Project region tends to be concentrated in the winter months (NPS 2025).

NATIONAL PARK SERVICE

Castle Mountains National Monument

Castle Mountains National Monument is in northeastern San Bernardino County and protects 20,920 acres between I-15 and I-40. The monument preserves a remote area of the Mojave Desert, notable for its scenic desert landscapes and historic mining sites, including the remnants of the early twentieth-century gold mining town of Hart. The Project Area is entirely bounded by the Castle Mountains National Monument.

The Castle Mountains National Monument is situated within a landscape characterized by open desert, Joshua tree woodlands, and low rolling hills typical of the eastern Mojave region. The area supports native desert vegetation and wildlife, and is managed by the NPS, providing access for hiking, exploring, and dispersed camping (NPS 2026). The Castle Mountains National Monument is bordered by the Mojave National Preserve to the north, east, and south, and by Avi Kwa Ame National Monument in Nevada to the west.

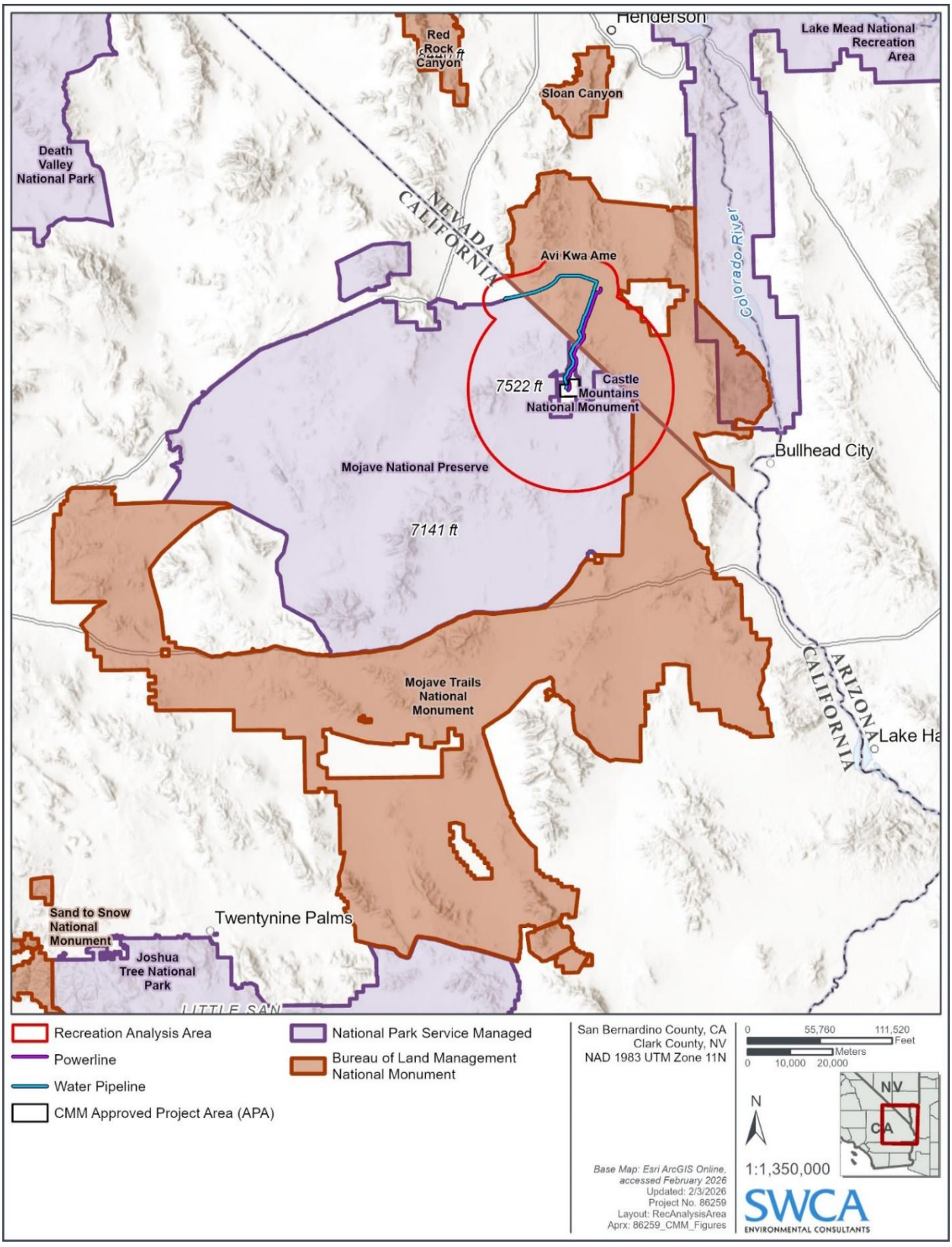


Figure 4.15-2. Recreational Areas Near the Project Area

Mojave National Preserve

The Project Area is immediately east of the Mojave National Preserve, a 1.6-million-acre preserve in Southern California that was established in 1994. The Mojave National Preserve is the third-largest park in the contiguous United States and features sand dunes, Joshua tree forests, and lava flows. The Mojave National Preserve is a vast expanse of desert lands that represent a combination of Great Basin, Sonoran, and Mojave Desert ecosystems. Approximately 700,000 acres of the Mojave National Preserve is designated Wilderness. Recreational activities within the Mojave National Preserve include camping, picnicking, hiking, mountain and trail biking, visiting historical sites, nature study and wildlife viewing, attending interpretative programs, and stargazing (NPS 2002). The majority of the recreation visitors access the center of the Mojave National Preserve from I-15 and I-40 via Ivanpah, Kelbaker, and Cima Roads (NPS 2022). Major recreation facilities in the Mojave National Preserve are the Kelso Depot Visitor Center, Hole in the Wall Information Center, Hole in the Wall Campground, Mid Hills Campground, and Black Canyon Group and Equestrian Campground, which are all more than 30 miles from the Project Area. Table 4.15-1 provides a comparison of visitor use data from 2020 to 2024 and highlights the peak months of visitation.

Table 4.15-1. Reported Recreation Visits to the Mojave National Preserve (2019–2023)

Year	Total Annual Visits	Peak Month	Peak Month Visits	Peak Month Visits Per Acre
2020	608,633	January	72,830	0.046
2021	866,635	December	88,855	0.056
2022	773,463	December	88,483	0.055
2023	1,178,998	April	199,990	0.125
2024	424,864	December	64,342	0.040

Source: NPS (2025).

Fort Piute

Fort Piute is a historic military outpost located within the Mojave National Preserve in eastern San Bernardino County. Established in 1867, the fort was one of several small military installations constructed along the Mojave Road to protect travelers and mail routes from conflicts during westward expansion. Fort Piute is approximately 12 miles south of the Project Area, situated near Piute Spring, a perennial water source critical for both Indigenous communities and later travelers in the arid Mojave Desert.

The remains of Fort Piute consist primarily of stone foundations, low walls, and scattered structural remnants, reflecting its original construction using locally available materials. The surrounding landscape is characterized by open desert, rugged hills, and native vegetation such as creosote bush, Joshua trees, and cacti. Piute Spring supports a unique riparian habitat, providing water for wildlife and contributing to the ecological diversity of the area. The site is undeveloped, with no modern amenities, and is managed by the NPS as part of the Mojave National Preserve. Access is provided via unpaved roads, and visitors to the site encounter a remote, historically evocative landscape that preserves the cultural and natural resources of the region (NPS 2021b).

STATE AND LOCAL

No State of California Recreation Areas or County Regional Parks are in the vicinity of the Project Area. The closest local recreational facility is the Searchlight Town Park in Searchlight, Nevada. The facility is approximately 15 miles from the Project Area (Clark County 2025). The nearest local recreational facility

in California is approximately 50 miles west of the Project Area at Chet Huffman Park, in the town of Baker, California (Baker Community Services District 2018).

4.15.2 Regulatory Setting

4.15.2.1 Federal

CODE OF FEDERAL REGULATIONS

Other Regulations Relating to Transportation (49 Code of Federal Regulations [CFR] Subtitle B, Parts 171 through 173, 177 through 178, 350 through 359, 397.9, and Appendices A through G) addresses safety considerations for the transport of goods, materials, and substances and governs the transportation of hazardous materials, including types of materials and marking of the transportation vehicles.

Off-Road Vehicles (43 CFR Section 8340 et seq.) establishes criteria for designating public lands as open, limited, or closed to the use of off-highway vehicles (OHVs) and for establishing controls governing the use and operation of OHVs in such areas, while protecting resources, promoting safety, and minimizing user conflicts. Recreation use under Title VI "includes the use, where appropriate, of off-road recreational vehicles."

FEDERAL LAND POLICY AND MANAGEMENT ACT

The Federal Land Policy and Management Act (FLPMA) establishes public land policy and guidelines for administering public lands and provides for the management, protection, development, and enhancement of public lands, including lands that would be subject to the requested ROW grant. Under FLPMA, the BLM is responsible for the development of energy resources on BLM-administered lands in a manner that balances diverse resource uses and considers the long-term needs of future generations for renewable and non-renewable resources. Among those uses, FLPMA recognizes that the public lands should be managed in a manner that will provide for outdoor recreation. Pursuant to Title 11, Section 202(b)(9) of the FLPMA, the BLM is required to coordinate with local governments in land use planning activities.

MOJAVE NATIONAL PRESERVE GENERAL MANAGEMENT PLAN

The NPS developed the *Mojave National Preserve General Management Plan* in 2002 to guide the overall management strategy for the 1.6 million-acre Mojave National Preserve for a 10- to 15-year period. The plan focuses on the purposes of the Mojave National Preserve, its significant attributes, what activities are appropriate within specified constraints, resource protection strategies, and its mission in relation to the overall mission of the NPS (NPS 2002).

CALIFORNIA DESERT CONSERVATION AREA PLAN

The 25 million-acre California Desert Conservation Area (CDCA) contains over 12 million acres of public lands spread within the area known as the California Desert, which includes the following three deserts: the Mojave, the Sonoran, and a small portion of the Great Basin (BLM 1999). Approximately 10 million acres of the CDCA public lands are administered by the BLM.

Lands within the Project Area were designated Class C (Controlled Use) and Class L (Limited Use) under the CDCA Plan (BLM 1999). The classifications were based on the sensitivity of resources and the type of uses for each geographic area.

Lands designated Class C and Class L are suitable for recreation that generally involves low to moderate user densities. Allowed recreation opportunities include backpacking, primitive camping, hiking, rockhounding, nature study, and similar low-intensity uses. Motorized vehicle touring on approved routes of travel is also allowed in Class C areas.

The CDCA Plan includes 12 plan elements, such as a Motorized Vehicle Access Element, which establishes the travel management framework for the CDCA, including some activity-level decisions for popular locations, and a Livestock Grazing Element, which defines the geographic boundaries of livestock allotments, the types of forage use, and the upper limits on the stocking levels in each of the allotments.

4.15.2.2 State

SENATE BILL 743

Senate Bill (SB) 743 was signed into law in September 2013 and codified under California Public Resources Code 21099. It required changes to the State CEQA Guidelines specifically related to the analysis of transportation impacts. Prior to SB 743, transportation analyses under CEQA focused on factors such as roadway delay and capacity at specific locations. However, SB 743 introduced significant changes by eliminating the use of auto delay, level of service (LOS), and similar measures of vehicular capacity or traffic congestion as the basis for determining significant impacts. Instead, SB 743 identified vehicle miles traveled (VMT) as the most appropriate metric for evaluating a project's transportation impacts under CEQA. This means that since the bill took effect, automobile delay measured by LOS and similar metrics no longer qualifies as a significant environmental effect under CEQA. However, LOS can still be used as a measure for local agency planning purposes.

In December 2018, the California Governor's Office of Planning and Research (OPR; now Office of Land Use and Climate Innovation [LCI]) and the State Natural Resources Agency submitted updated State CEQA Guidelines to the Office of Administrative Law for final approval to implement SB 743. The Office of Administrative Law approved these updated guidelines making VMT the primary metric for analyzing transportation impacts. As of July 1, 2020, compliance with SB 743 and the use of SB 743-compliant CEQA analysis became mandatory for land use and transportation projects.

Office of Land Use and Climate Innovation's VMT Screening Criteria

To be screened out of a detailed VMT analysis, a project or project component would need to satisfy at least one of the VMT screening criteria. A summary of LCI's screening criteria and determinations are listed below:

- **Small Project Size:** Projects generating less than 110 trips per day may be considered to have an insignificant impact to VMT. This threshold is not VMT based but relates to the CEQA categorical exemption for existing facilities and additions to existing structures up to 10,000 square feet.
- **Projects within Transit Priority Areas (TPAs):** Projects, including residential, retail, and office projects, as well as mixed-use projects within a 0.5 mile of an existing major transit stop or along a high-quality transit corridor, are generally presumed to have a minor impact to VMT. This presumption is not valid if project-specific or location-specific information indicates significant VMT levels. An existing major transit stop is defined as a site with a rail transit station, a ferry terminal served by bus or rail transit, or the intersection of multiple major bus routes with frequent service during peak commute periods.

- **Local-Serving Retail:** Projects categorized as local-serving retail are presumed to have an insignificant impact to VMT.
- **Redevelopment Projects Resulting in Net VMT Reduction:** Redevelopment projects that would decrease VMT, meaning the proposed land use generates less VMT than the existing use, may be considered to have an insignificant impact to VMT.
- **Affordable Housing:** LCI's technical advisory provides special considerations for affordable housing. Projects that consist of 100% affordable housing in infill locations are presumed to have a minor impact to VMT. Infill locations generally offer better access to transit and more opportunities for walking and cycling. The definition of infill locations is determined based on local conditions.

As described below, the County issued an update to its Transportation Impact Study Guidelines (County TISG) on July 9, 2019 (County of San Bernardino 2019), to provide recommendations related to VMT assessment (both thresholds of significance and methodology for identifying VMT-related impacts) and to refine its existing County TISG to reflect methodologies for identifying impacts.

CALIFORNIA VEHICLE CODE

The California Vehicle Code (CVC) includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials. The following sections would apply to the proposed Project:

- CVC Sections 13369, 15275, and 15278 address the licensing of drivers and classifications of licenses required to operate particular types of vehicles.
- CVC Section 32100.5 addresses the transportation of hazardous materials that pose an inhalation hazard.
- CVC and 13 California Code of Regulations (CCR) 1160, et seq. provides the California Highway Patrol (CHP) with authority to adopt regulations for the transportation of hazardous materials in California. The CHP can issue permits and specify the route for hazardous material delivery.
- California Streets and Highway Code (S&HC) Sections 660, 670, 1450, 1460 et seq., 1470, and 1480 regulate ROW encroachment and granting of permits for encroachments on State and County roads.
- CVC Section 35780 et seq. and S&HC Sections 117 and 660 through 711 require permits to transport oversized loads on County roads. CVC Section 35780 requires approval for a permit to transport oversized or excessive loads over State highways. S&HC Sections 117 and 660 through 711 require permits for any construction, maintenance, or repair involving encroachment on State highway ROWs.
- Caltrans weight and load limitations for state highways apply to all state and local roadways. The weight and load limitations are specified in CVC Sections 35550 through 35559.

The following provisions from the CVC apply to all roadways and are also applicable to the proposed Project.

- Division 15, *Size, Weight, and Load*; Chapter 5, *Weight*; Article 1, *Axle Limits*; Section 35550:
    (a) The gross weight imposed upon the highway by the wheels on any axle of a vehicle shall not exceed 20,000 pounds and the gross weight upon any one wheel, or wheels, supporting one end of an axle, and resting upon the roadway, shall not exceed 10,500 pounds.

(c) The maximum wheel load is the lesser of the following:
    (1) The load limit established by the tire manufacturer, or
    (2) A load of 620 pounds per lateral inch of tire width, as determined by the manufacturer's rated tire width.

- Division 15, *Size, Weight, and Load*; Chapter 5, *Weight*; Article 1, *Axle Limits*; Section 35551.5:
    (b) Vehicles with Trailers or Semi-trailers: The gross weight imposed upon the highway by the wheels on any one axle of a vehicle shall not exceed 18,000 pounds and the gross weight upon any one wheel, or wheels, supporting one end of an axle and resting upon the roadway, shall not exceed 9,500 pounds, except that the gross weight imposed upon the highway by the wheels on any front steering axle of a motor vehicle shall not exceed 12,500 pounds.

4.15.2.3 Local

SAN BERNARDINO ASSOCIATED GOVERNMENTS CONGESTION MANAGEMENT PROGRAM

The passage of Proposition 111 in 1990 established a process for each metropolitan county in California to prepare a Congestion Management Plan (CMP). The CMP ties appropriation of new gas tax revenues to congestion reduction efforts and is managed at the countywide level. The CMP primarily uses an LOS performance metric, which is inconsistent with more recent State efforts to transition to VMT-based performance metrics.

The San Bernardino Associated Governments (SANBAG) prepared the San Bernardino County CMP, in consultation with the County and cities in the county, in an effort to align land use, transportation, and air quality management efforts and promote reasonable growth management programs that effectively use statewide transportation funds, while ensuring that new development pays its fair share of needed transportation improvements (SANBAG 2016). In San Bernardino County, SANBAG is responsible for planning and managing vehicular congestion and coordinating regional transportation policies. The CMP includes goals that are supportive of maintaining and enhancing the multimodal transportation system and also includes, by association, the goals of the Southern California Association of Governments' (SCAG) latest Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

Through the use of traffic impact analysis reports and Comprehensive Transportation Plan model forecasts, the CMP evaluates proposed land use decisions to ensure adequate transportation network improvements that are developed to accommodate future growth in population. If a facility is found to fall below the LOS standard under either existing or future conditions, a deficiency plan must be prepared, adopted, and implemented by local jurisdictions that contribute to such situations.

Annual monitoring activities are a method of accountability for those local jurisdictions required to mitigate a network facility with substandard LOS. While this interjurisdictional approach provides political and technical consistency for future development in the county, the CMP is only a mechanism to be used to guide efforts in a more efficient manner. It is not to be considered a replacement to the RTP/SCS.

SAN BERNARDINO COUNTYWIDE TRANSPORTATION PLAN

The San Bernardino County Transportation Authority (SBCTA) developed the County's Countywide Transportation Plan (CTP), which was released in September 2015. The County's CTP has a horizon year of 2040 and serves as the County's input into the SCAG RTP/SCS. The purpose of the County's CTP is to lay out a strategy for long-term investment in and management of the County's transportation system.

Key issues addressed by the County's CTP include transportation funding, congestion relief, economic competitiveness, system preservation and operations, transit system interconnectivity, air quality, sustainability, and greenhouse gas (GHG) emission reductions. The County's CTP analyzes a Year 2040 baseline scenario with traditional revenue sources and an aggressive scenario that assumes added revenue sources defined in SCAG's RTP/SCS. The County's CTP has developed a set of strategies to address issues such as air quality, goods movement, sustainability, and active transportation.

SAN BERNARDINO COUNTY ROAD PLANNING AND DESIGN STANDARDS

San Bernardino County roadway design and improvement projects within unincorporated areas are governed by the *San Bernardino County Road Planning and Design Standards*, administered by the County Department of Public Works, Transportation Division (County of San Bernardino 1993). These standards apply to public and private development projects involving the construction, modification, or dedication of roadways and related transportation facilities and are intended to ensure safe, efficient, and orderly circulation consistent with the County General Plan and Master Plan of Highways.

The Road Planning and Design Standards establish minimum engineering and safety criteria for roadway classification, alignment, ROW width, lane configuration, pavement design, and design speed. Roadways are classified by function, including major highways, arterials, collectors, and local streets, with additional standards addressing desert, hillside, and mountain roadway conditions. Intersection geometry, sight distance, access control, signage, striping, and traffic control devices are required to conform to County standards and applicable State requirements.

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS 2020–2045 REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

The SCAG, of which the County is a part, includes an Intergovernmental Review Program that is responsible for performing consistency review of regionally significant local plans, projects, and programs. Regionally significant projects are required to be consistent with SCAG's adopted regional plans and policies, such as *Connect SoCal: A Plan for Navigating to a Brighter Future* (Connect SoCal 2024 RTP/SCS).

SCAG adopted the Connect SoCal 2024 RTP/SCS on September 3, 2020. The Connect SoCal 2024 RTP/SCS is a long-range visioning plan that balances future mobility and sustainable growth with land use and transportation strategies to reach the region's GHG reduction goals. The Connect SoCal 2024 RTP/SCS includes the following specific goals and strategies that are applicable to the proposed Project to integrate land use and transportation, such that the region can grow smartly and sustainably:

- Encourage regional economic prosperity and global competitiveness
- Reduce GHG emissions and improve air quality
- Adapt to a changing climate and support an integrated regional development pattern and transportation network

SAN BERNARDINO COUNTY TRANSPORTATION IMPACT STUDY GUIDELINES

The County TISG, dated July 9, 2019 (County of San Bernardino 2019), provides a guide in assessing a proposed development project's potential transportation impacts. As stated within the County TISG, a Transportation Impact Study is required if one or more of the following criteria is met:

- A project generates 100 or more trips without consideration of pass-by trips during any peak hour.

- A project is located within 300 feet of
    - The intersection of two streets designated as Collector or higher in the County's General Plan or the Department's Master Plan or
    - An impacted intersection as determined by the Traffic Division.
- A project creates safety or operational concerns.
- A project has the potential to generate VMT that could result in a transportation impact as noted in the significance criteria presented within the County TISG.
- A project generates less than 100 trips without consideration of pass-by trips during any peak hour; a study may be required if there are special concerns.

As it relates to VMT, according to the County TISG, land use projects that meet certain screening criteria are assumed to result in a less-than-significant transportation impact under CEQA and do not require a detailed quantitative VMT assessment. Consistent with LCI guidance, the County identifies the following project types as appropriate for screening. Projects need only meet one of the listed criteria to be screened from a VMT analysis:

- **Local Community Projects.** The following list of projects would be screened out:
    - K–12 schools
    - Local-serving retail less than 50,000 square feet
    - Local parks
    - Day care centers
    - Local-serving gas stations
    - Local-serving banks
    - Student housing projects
    - Local-serving community colleges that are consistent with the assumptions noted in the RTP/SCS
- **Trip Generation Threshold**. Projects generating less than 110 daily vehicle trips, which generally corresponds to the following "typical" development potentials:
    - 11 single-family housing units
    - 16 multi-family, condominiums, or townhouse units
    - 10,000 square feet of office
    - 15,000 square feet of light industrial
    - 63,000 square feet of warehouse
    - 79,000 square feet of high cube transload and short-term storage warehouse
    - 12 hotel rooms
- **Transit Priority Area (TPA).** Projects located within a TPA as determined in the most recent SCAG RTP/SCS.
- **Low-VMT Area.** Projects located within a low-VMT-generating area as determined by the analyst based on the County's VMT efficient area maps available online at SBCTA VMT Screening Tool.

Projects that do not meet the screening criteria above should be considered to have a significant impact if the Project VMT per person/employee is greater than 4% below the existing baseline VMT per person for the unincorporated county.

SAN BERNARDINO COUNTYWIDE PLAN

The CWP (County of San Bernardino 2024a), adopted by the Board of Supervisors in 2020, updates and expands the County's General Plan by addressing the physical, social, and economic issues facing the unincorporated portions of the county. The CWP consists of the County Policy Plan, the County Business Plan, and a communities plan. Relevant goals and policies from the Transportation and Mobility and Natural Resources Elements of the County Policy Plan are summarized in Table 4.15-2 (County of San Bernardino 2024b).

Table 4.15-2. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Transportation and Mobility Element	
Goal TM-1	**Roadway Capacity.** Unincorporated areas served by roads with capacity that is adequate for residents, businesses, tourists, and emergency services
Policy TM-1.1	**Roadway level of service (LOS).** We require our roadways to be built to achieve the following minimum level of service standards during peak commute periods (typically 7:00-9:00 AM and 4:00-6:00 PM on a weekday): • LOS D in the Valley Region • LOS D in the Mountain Region • LOS C in the North and East Desert Regions
Policy TM-1.2	**Interjurisdictional roadway consistency**. We promote consistent cross-sections along roads traversing incorporated and unincorporated areas.
Policy TM-1.3	**Freeways and highways**. We coordinate with Caltrans and regional transportation agencies and support the use of state, federal, and other agency funds to improve freeways and highways.
Policy TM-1.4	**Unpaved roadways**. The County does not accept new unpaved roads into the County Maintained Road System, and we require all-weather treatment for all new unpaved roads.
Policy TM-1.5	**Upgrading unpaved roads**. We support the paving of unpaved roads when funding is contributed through a local area funding and financing mechanism.
Policy TM-1.6	**Paved roads**. For any new development for which paved roads are required, we require the developer to construct the roads and we require the establishment of a special funding and financing mechanism to pay for roadway operation, maintenance, and set- aside reserves.
Policy TM-1.7	**Fair share contributions**. We require new development to pay its fair share contribution toward off-site transportation improvements.
Policy TM-1.8	**Emergency access**. When considering new roadway improvement proposals for the CIP or RTP, we consider the provision of adequate emergency access routes along with capacity expansion in unincorporated areas. Among access route improvements, we prioritize those that contribute some funding through a local area funding and financing mechanism.
Policy TM-1.9	**New transportation options**. We support the use of transportation network companies, autonomous vehicles, micro transit, and other emerging transportation options that reduce congestion, minimize land area needed for roadways, create more pedestrian- and bicycle-friendly streets, reduce VMT, or reduce dependence on privately-owned vehicles.
Goal TM-2	**Road Design Standards.** Roads designed and built to standards in the unincorporated areas that reflect the rural, suburban, and urban context as well as the regional (valley, mountain, and desert) context.
Policy TM-2.1	**Context sensitive approach**. We maintain and periodically update required roadway cross sections that prioritize multi-modal systems inside mobility focus areas (based on community context), and vehicular capacity on roadways outside of mobility focus areas (based on regional context).
Policy TM-2.2	**Roadway improvements**. We require roadway improvements that reinforce the character of the area, such as curbs and gutters, sidewalks, landscaping, street lighting, and pedestrian and bicycle facilities. We require fewer improvements in rural areas and more improvements in urbanized areas, consistent with the Development Code. Additional standards may be required in municipal spheres of influence.
Policy TM-2.3	**Concurrent improvements**. We require new development to mitigate project transportation impacts no later than prior to occupancy of the development to ensure transportation improvements are delivered concurrent with future development.

Goal/Policy	Goal/Policy Description
Policy TM-2.4	**Atypical intersection controls**. We allow the use of atypical intersection concepts such as roundabouts when they improve traffic flow and safety compared to conventional intersection controls.
Policy TM-2.5	**Context-based features**. When making road improvements, we provide feasible, context- based transportation features such as: • Chain installation and inspection areas in the Mountain Region • Slow-vehicle turnouts on roadways with steep grades • Limited on-street parking areas to serve snowplow or emergency services • Passing lanes in rural areas • Vista areas along scenic routes
Policy TM-2.6	**Access control**. We promote shared/central access points for direct access to roads in unincorporated areas to minimize vehicle conflict points and improve safety, especially access points for commercial uses on adjacent properties.
Natural Resources Element	
Goal NR-3	**Open Space, Parks, and Recreation.** A system of well-planned and maintained parks, trails, and open space that provides recreation opportunities for residents, attracts visitors from across the region and around the country, and preserves the natural environment.
Policy NR-3.1	**Open space preservation.** We regulate land use and coordinate with public and nongovernmental agencies to preserve open space areas that protect natural resources, function as a buffer against natural hazards or between land uses, serve as a recreation or tourist destination, or are central to the identity of an unincorporated community.
Policy NR-3.4	**Land exchange**. We coordinate with state and federal agencies to exchange publicly owned lands in order to provide additional areas for open space, recreation, and resource protection. We also request the right of first refusal on publicly owned lands made available for purchase to the public.
Policy NR-3.9	**Local parks, trails, and recreation**. We support the provision of local and community parks, trails, and recreational programs and facilities in unincorporated areas when a locally-approved funding and financing mechanism is established to pay for acquisition, construction, maintenance, and operations. We encourage unincorporated communities to apply for funding and cooperate with them in their funding applications for local trails that are identified in a non-motorized transportation plan that is accepted or adopted by the County. We also encourage, where feasible, local trails to be separated from vehicular traffic to improve the safety of trail users.

4.15.3 Thresholds of Significance

4.15.3.1 Transportation

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to transportation if the project would:

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

d) Result in inadequate emergency access.

Each of these thresholds is discussed under Section 4.15.5, *Project-Specific Impacts and Mitigation Measures*, specifically under Section 4.15.5.1, *Transportation*, below.

4.15.3.2 Recreation

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. A project would result in significant adverse impacts related to recreation if the project would:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Each of these thresholds is discussed under Section 4.15.5, *Project-Specific Impacts and Mitigation Measures*, specifically under Section 4.15.5.2, *Recreation*, below.

4.15.4 Impact Assessment Methodology

This section evaluates transportation and recreation impacts consistent with CEQA Guidelines Section 15064.3(b) and Appendix G, using both qualitative and quantitative information where appropriate to determine whether the proposed Project would result in a significant environmental impact. The following impact assessment is based, in part, on the VMT Screening Evaluation prepared for the proposed Project, which evaluates vehicle trips generated during Project operation (Urban Crossroads 2025; see EIR Appendix 9).

Although construction-related traffic is temporary, CEQA requires consideration of temporary increases in VMT where such increases could be substantial. Accordingly, construction and operational traffic effects are evaluated separately.

4.15.4.1 Applicant-Proposed Measures

The Applicant has identified and committed to implementing the following applicant-proposed measures (APMs) as part of the proposed Project to avoid or substantially lessen potentially significant impacts to transportation and recreation, to the extent feasible. The APMs were originally included as Applicant Proposed Environmental Protection Measures in the Plan of Development:

AMP-TRA-1 Signs will be posted to alert the public of construction activities, minimizing dangers to the public along the County and NDOT ROWs for the Water Line Project. All signs will meet BLM standards and approval, and/or County and NDOT standards, as necessary. Approved traffic control measures will be implemented, as necessary.

AMP-TRA-2 The applicant will prepare a Construction Traffic Management Plan (CTMP) for project construction to minimize the adverse effects of project construction traffic. The CTMP may be prepared in consultation with San Bernardino County Public Works Department or Caltrans prior to construction activities and identify the following:

- A breakdown of the number, type, capacity, and dimensions of the construction vehicles that would service the Project Area
- An estimate of the average daily or weekly number of vehicles per vehicle type during each major phase of the work

- Routing of passenger/worker vehicles, delivery vehicles, and excavation and construction vehicles
    - Review of site access as well as recommendations of signage and markings as needed so accessibility to the Shell Oil gas station is not affected
    - Enforcement of routing
    - Delivery hour restrictions, if applicable
    - Traffic control methods and when each is required
    - A contact for complaints and how complaints are to be addressed

4.15.5 Project-Specific Impacts and Mitigation Measures

4.15.5.1 Transportation

a) Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

IMPACT TR-1: THE PROJECT WOULD NOT CONFLICT WITH ANY REGULATIONS ADDRESSING THE CIRCULATION SYSTEM. *(LESS THAN SIGNIFICANT)*

According to the County's TISG, a traffic impact analysis should examine if a project is inconsistent with adopted policies, plans, or programs regarding active transportation or public transit facilities, or otherwise decrease the performance or safety of such facilities. The criteria that would need to be met to require a Traffic Impact Study are as follows (County of San Bernardino 2019):

- If a project generates 100 or more trips without consideration of pass-by trips during any peak hour.
- If a project is located within 300 feet of
    - The intersection of two streets designated as Collector or higher in the County's General Plan or the Department's Master Plan or
    - An impacted intersection as determined by the Traffic Division.
- If this project creates safety or operational concerns.
- The project has the potential to generate VMT that could result in a transportation impact as noted in the significance criteria presented later in this memorandum.
- If a project generates less than 100 trips without consideration of pass-by trips during any peak hour, a study may be required if there are special concerns.

Based on the above criteria, and as further detailed in the VMT Screening Evaluation, Project operation is expected to generate fewer than 110 new net daily vehicle trips (Urban Crossroads 2025; see EIR Appendix 9). Furthermore, the Project Area is not within 300 feet of an intersection of two collector streets or higher, or any impacted intersections as determined by the Traffic Division. Additionally, there are no public transit services, paved sidewalks, or dedicated bicycle lanes within the Project Area. As described below under Impact TR-2, the proposed Project would not generate VMT that would result in a significant impact. Therefore, the proposed Project does not meet any of the screening criteria requiring that a Traffic Impact Study be completed and would be consistent with the County's TISG as well as LCI's VMT Screening Criteria under SB 743.

Further, as demonstrated in Table 4.15-3, the proposed Project would not conflict with any goals related to transportation in the County Policy Plan (County of San Bernardino 2024a).

Table 4.15-3. Project Consistency with Transportation Goals in the County Policy Plan

Goal/Policy	Project Consistency Analysis
Goal TM-1: Unincorporated areas served by roads with capacity that is adequate for residents, businesses, tourists, and emergency services.	**No conflict**. The roadway network in the Project vicinity is characterized by free-flowing traffic conditions, with limited existing traffic. Project construction and operation vehicles would be considered nominal trips and would not be expected to impact the existing road network near the Project Area. Vehicle trips generated during construction would be temporary in nature, and operational trips would not result in a significant increase in vehicle traffic in the vicinity of the Project Area. As such, the proposed Project would not conflict with the County's goal to provide roads with adequate capacity.
Goal TM-2: Roads designed and built to standards in the unincorporated areas that reflect the rural, suburban, and urban context as well as the regional (valley, mountain, and desert) context.	**No conflict**. The Project Area is not within a mobility focus area, and no major public transit stops are within the Project vicinity. The proposed Project also includes improvement and ongoing maintenance of Walking Box Ranch Road, which provides access to the Project Area. The proposed improvements would be consistent with the County's design standards for the desert region. As such, the proposed Project would not conflict with this goal.
Goal TM-3: A pattern of development and transportation system that minimizes vehicle miles traveled.	**No conflict**. The proposed Project would result in less than 110 new daily vehicle trips, and would not result in a significant impact related to VMT. See discussion under Impact TR-2. As such, the proposed Project would not conflict with this goal.
Goal TM-4: On- and off-street improvements that provide functional alternatives to private car usage and promote active transportation in mobility focus areas.	**No conflict.** The Project Area is not within a mobility focus area. As previously described, the proposed Project would not impact the local transportation network, bicycle facilities, or pedestrian facilities that serve unincorporated areas. Further, the proposed Project would include the implementation of vanpooling to minimize private car usage by construction workers. As such, the proposed Project would not conflict with this goal.

As demonstrated in Table 4.15-3, the proposed Project would not conflict with any programs, plans, ordinances, or policies related to transportation. Additionally, the proposed Project would be required to comply with all sections of the CVC. As such, impacts during Project construction and operation would be *less than significant*, and mitigation is not necessary.

Impact TR-1
The Project would not conflict with any regulations addressing the circulation system.
Mitigation Measures
Mitigation is not necessary. Impact TR-1 would be less than significant.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

IMPACT TR-2: THE PROJECT WOULD NOT CONFLICT WITH STATE CEQA GUIDELINES SECTION 15064.3(B). *(LESS THAN SIGNIFICANT)*

Impacts due to construction activities would be temporary and would not result in any meaningful long-term or permanent change in VMT; therefore, the evaluation of VMT is focused on Project operations. CEQA Guidelines Section 15064.3(b) establishes VMT as the appropriate metric for evaluating transportation impacts. The County TISG allows projects generating fewer than 110 daily vehicle trips to be screened from a detailed VMT analysis, provided substantial evidence supports the conclusion that VMT impacts would be less than significant.

Table 4.15-4 shows the trip generation comparison between the existing mining operations and proposed Project and identifies the resulting net change in trips. As shown, the proposed Project is anticipated to generate a net increase of 42 trips per day as compared to the existing mining operations. As such, the proposed Project is anticipated to generate less than 110 new daily trips during operation and would meet the trip generation threshold screening criteria.

Table 4.15-4. Project Trip Generation Comparison – Increase from 1998 Plan

Source	AM Peak Hour			PM Peak Hour			Daily Totals
	In	Out	Total	In	Out	Total	
Existing Trip Generation							
Passenger Cars	0	1	**1**	2	2	**4**	**83**
2-axle Trucks	1	0	**1**	0	1	**1**	**6**
3 and 4+-axle Trucks	0	0	**0**	0	0	**0**	**11**
Total	**1**	**1**	**2**	**2**	**3**	**5**	**100**
Proposed Trip Generation							
Passenger Cars	0	1	**1**	2	2	**4**	**60**
2-axle Trucks	2	0	**2**	0	2	**2**	**10**
3 and 4+-axle Trucks	0	0	**0**	0	0	**0**	**72**
Total	**2**	**1**	**3**	**2**	**4**	**6**	**142**
Net Change							
Passenger Cars	0	0	**0**	0	0	**0**	**-23**
2-axle Trucks	1	0	**1**	0	1	**1**	**4**
3 and 4+-axle Trucks	0	0	**0**	0	0	**0**	**61**
Total	**1**	**0**	**1**	**0**	**1**	**1**	**42**

Source: Urban Crossroads (2025).

Table 4.15-5 details the remaining County TISG screening criteria, including the trip generation threshold, and whether the proposed Project would meet the criteria.

Table 4.15-5. Summary of VMT Screening Determination

Screening	Screening Criteria	Project Evaluation	Criterion Met?
Local Community Projects	The following list of projects would be screened out: • K-12 schools • Local-serving retail less than 50,000 square feet • Local parks • Day care centers • Local-serving gas stations • Local-serving banks • Student housing projects • Local-serving community colleges that are consistent with the assumptions noted in the RTP/SCS	The proposed Project is a mining facility and is not considered a local community project. Therefore, the proposed Project is not screened out under this criterion.	No
Trip Generation Threshold	Projects generating less than 110 daily vehicle trips such as: • 11 single-family housing units • 16 multi-family, condominiums, or townhouse units • 10,000 square feet of office • 15,000 square feet of light industrial • 63,000 square feet of warehouse • 79,000 square feet of high cube transload and short-term storage warehouse • 12 hotel rooms	The proposed Project would use vanpooling options to bring employees to and from the Project Site, which would substantially reduce the daily employee trip rate. As such, the proposed Project would generate less than 110 new daily vehicle trips (see Table 4.15-4). Therefore, the proposed Project would screen out of a detailed VMT analysis.	Yes
Transit Priority Area	Projects located within a TPA as determined by the most recent SCAG RTP/SCS	The proposed Project is not within a TPA.	No
Low-VMT Area	Projects located within a low-VMT-generating area as determined by the analyst based on the County's VMT efficient area maps online (SBCTA 2026).	The proposed Project would likely generate more daily total VMT since the land is currently open space and is not screened out under this criterion.	No

As discussed above, the County TISG states that projects generating less than 110 daily vehicles trips are presumed to have a less-than-significant impact to VMT. Although the disturbance area of CMM would almost double on-site, the increased activity is not anticipated to have a doubling effect on the existing trip generation. The proposed Project includes an employee transportation program that prioritizes high-occupancy vanpool and bus transportation from established regional pickup locations, which would substantially reduce single-occupant vehicle trips. Even with conservative assumptions that exclude vanpool trip reductions, the proposed Project would generate fewer than 110 net new daily vehicle trips. Given the continuation of existing mining operations, the absence of new land uses, and the lack of induced growth potential, the proposed Project's operational VMT increase would be minimal in a regional context and would not exceed applicable County thresholds. It is likely that many of the workers may come from both San Bernardino County and Clark County; as such, vanpooling locations would be set up in the cities of Henderson, Bullhead City/Laughlin, and Las Vegas, Nevada, and would bring in up to 175 employees to the Project Area daily via high-capacity busses and vans. As such, a detailed quantitative VMT assessment is not required as the proposed Project would screen out based on the trip generation threshold. The proposed Project is considered to have a less-than-significant VMT impact and would not conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b). Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact TR-2
The Project would not conflict with State CEQA Guidelines Section 15064.3(b).
Mitigation Measures
Mitigation is not necessary. Impact TR-2 would be less than significant.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

IMPACT TR-3: THE PROJECT WOULD NOT INCREASE HAZARDS DUE TO A DESIGN FEATURE OR INCOMPATIBLE USE. *(LESS THAN SIGNIFICANT)*

Primary access to the Mine Area is provided via the existing Walking Box Ranch Road that runs from Nevada State Route 164 south to the existing CMM facility. Walking Box Ranch Road is approximately 18 miles in length and oriented north–south. Following the Walking Box Ranch Road south approximately 4.95 miles from the California/Nevada state line, the road intersects a corner section of the Mojave National Preserve and crosses less than 1,000 feet through the Mojave National Preserve. To avoid potential impacts to the Mojave National Preserve, the road will be modified around the eastern corner section, avoiding the Mojave National Preserve entirely (Figure 4.15-3).

Additionally, a section of New York Mountain Road within the Project Area would be realigned to follow the western perimeter of the expanded heap leach pad and would intersect Hart Mine Road just northwest of the CMM north nursery. This road alignment would ensure regional public roads remain open and outside restricted areas of CMM (Figure 4.15-4). Further, as shown on Figure 4.15-4, the main access gate would be set back approximately 2,000 feet from the Project Area boundary to avoid potential queuing issues along Walking Box Ranch Road while heavy-duty trucks are accessing CMM. The proposed Project does not include any other improvements to the local transportation system. A site plan and Google Earth review indicates an absence of visual obstructions and no significant topography changes at and around the primary access point for the mining facility. Additionally, the site plan indicates that there would not be any landscaping or other structural additions that would obstruct sight distance. Heavy vehicles heading to the Project Site would have adequate spacing given wide access at the Project access point.

The proposed Project would not introduce curves, slopes, walls, or other barriers that would create potential conflicts between vehicles or between vehicles and stationary objects. Access road design would comply with County private road standards and allow passage of construction vehicles, including oversized trucks. However, truck trips associated with the construction activities would temporarily change the mix of vehicle types on area roads traffic safety hazards could occur due to:

1. conflicts where construction vehicles access a public ROW from the Project Area;
2. conflicts where road width is narrowed; or
3. increased truck traffic in general (and their slower speeds and wider turning radii) during construction.

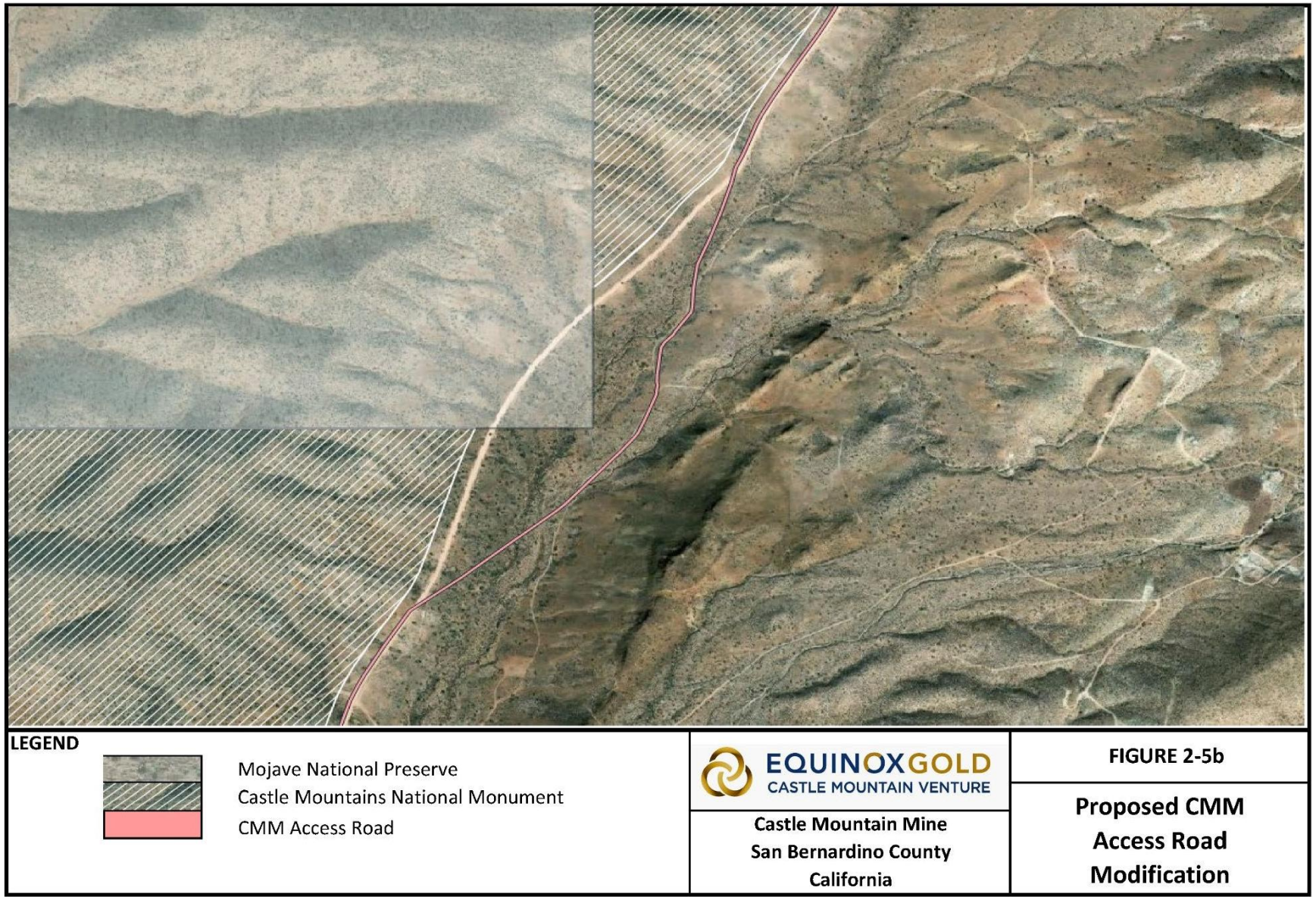


Figure 4.15-3. Walking Box Ranch Road Realignment



Figure 4.15-4. New York Mountain Road Realignment

In order to minimize adverse effects of Project construction traffic, the Project Applicant would implement APM-TRA-1, which requires signage to be posted alerting the public of potential construction-related hazards along roadways, as well as the implementation of standard traffic control measures. Additionally, AMP-TRA-2 requires the preparation of a Construction Traffic Management Plan (CTMP) for County review and approval prior to commencement of construction activities. Traffic controls would be implemented during grading and construction of the proposed Project's main access point from Rasor Road, and when large deliveries in wide-load vehicles or a high volume of deliveries occur. Traffic control may include escort vehicles for wide loads, signage, and/or flaggers. Traffic control should be consistent with the requirements of the *Manual of Uniform Traffic Control Devices* (Federal Highway Administration 2023). All roadways should always be open to emergency personnel.

Improvements to Walking Box Ranch Road and development of the expanded mining facilities would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections). Implementation of AMP-TRA-1 and AMP-TRA-2, which require the postings of signs alerting the public of construction activities along roads, as well as the preparation and enforcement of a CTMP, would reduce the potential for construction-related traffic hazards to a less-than-significant level. Thus, the proposed Project would not substantially increase hazards due to a geometric design feature or incompatible uses. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact TR-3
The Project would not increase hazards due to a design feature or incompatible use.
Mitigation Measures
Mitigation is not necessary. Impact TR-3 would be less than significant.

d) Would the project result in inadequate emergency access?

IMPACT TR-4: THE PROJECT WOULD NOT RESULT IN INADEQUATE EMERGENCY ACCESS. *(LESS THAN SIGNIFICANT)*

Project construction activities would not significantly interfere with or require a new risk management, emergency response, or evacuation plan for the Project Area due to the short-term nature of construction (approximately 18 months). Primary access to the Project Area would be through a gated entrance from Walking Box Ranch Road. Access to construction activities associated with the proposed utility improvements would be accessed via the adjacent ROWs (Nipton Road and Walking Box Ranch Road in California and Nevada State Route 164 in Nevada), which run parallel to the proposed utility lines. Project construction would not be expected to require any temporary complete lane closures that could restrict the movements of emergency vehicles, although partial temporary lane closures may be required. Partial street closures would continue to maintain two-way vehicular traffic along affected roadways.

As the proposed Project may require partial road closures, the preparation of a CTMP would be required (see APM-TRA-2). The CTMP will be prepared and submitted for County review prior to commencement of construction activities and will include construction traffic control measures to ensure that emergency access is maintained during Project construction. The CTMP will include implementation of safety measures such as directing construction traffic with a flag person (as needed to maintain safety adjacent to existing roadways), placing temporary traffic control signage along access routes to indicate the presence of heavy vehicles and construction traffic, using escort vehicles for wide loads, and ensuring

access for emergency vehicles to the Project Area. Therefore, the proposed Project would not result in inadequate emergency access during construction.

The proposed Project would not develop new public roads or introduce new hazards to roads leading to the Project Area or other sites in the immediate vicinity. During Project operation, maintenance activities would occur as needed at the Project Area and along the utility ROWs but are not expected to require any temporary travel lane closures. As described above, vehicular access to the Project Area would continue to be provided via Walking Box Ranch Road. According to the proposed Project's Emergency Response Plan, emergency access would be provided via Walking Box Ranch Road, as well as via Hart Mine Road or New York Mountain Road in the event that Walking Box Ranch Road is inaccessible. All interior roads would be maintained consistently with the County Fire Code. Therefore, the proposed Project would not result in inadequate emergency access during operation. See Section 4.9, *Hazards and Hazardous Materials*, for a discussion of the transport and handling of hazards and hazardous materials and Section 4.16, *Wildfire*, for a discussion of evacuation plans and potential routes and capacity in the case of a wildfire emergency.

Emergency access would be maintained during both construction and operation through Walking Box Ranch Road, with secondary access available via Hart Mine Road and New York Mountain Road. These routes provide redundancy consistent with County Fire Code requirements and regional wildfire evacuation planning. As such, the proposed Project would not result in inadequate emergency access during construction or operation. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact TR-4
The Project would not result in inadequate emergency access.
Mitigation Measures
Mitigation is not necessary. Impact TR-4 would be less than significant.

4.15.5.2 Recreation

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

IMPACT RC-1: THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL PHYSICAL DETERIORATION OF EXISTING PARKS OR RECREATION FACILITIES DURING EITHER PROJECT CONSTRUCTION OR OPERATION. *(LESS THAN SIGNIFICANT)*

The proposed Project includes the second expansion of CMM, which would not include the development of any residential uses. Construction activities would require approximately 500 construction workers during the 18-month construction period, and the proposed Project would require approximately 400 permanent workers during Project operation. Based on the growth projections for population and jobs in San Bernardino County, the proposed Project is expected to use workers from the local employment force and would not require a substantial number of workers to relocate to the Project Area (see Section 4.13, *Population and Housing*). As discussed in Impact PH-1, the proposed Project would not induce

population growth, either directly or indirectly, and therefore would not introduce new residents or increase park use, which would result in their physical deterioration.

The closest local recreational facility is the Searchlight Town Park in Searchlight, Nevada. The facility is approximately 15 miles from the Project Area. Other recreational facilities that could be affected by the construction and operational workforce include federal recreational areas such as the Walking Box Ranch, Hart Townsite, Castle Mountains National Monument, Mojave National Preserve, and Fort Piute. There is no indication that any of these opportunities or facilities are at or nearing their capacities for use. The *Mojave National Preserve General Management Plan* does not provide a quantitative standard for the Mojave National Preserve's capacity (NPS 2002). However, the Mojave National Preserve received just 0.125 visits per acre in April of 2023, the highest month of recorded visits since 2020 (see Table 4.15-1). Although construction and operational workers may incrementally increase use of nearby recreational resources, available visitation data demonstrate that regional recreational facilities operate well below capacity, and no substantial physical deterioration would occur.

As shown in Figure 4.15-2, there are numerous recreational open space areas in the vicinity of the Project Area. Increased use of Walking Box Ranch Road during Project construction and operation may deter attendance to nearby recreational areas such as the Castle Mountains National Monument or the Hart Townsite by the use of Walking Box Ranch Road, incrementally. However, for the same reasons described above, the possibility of a minor displacement of use within the open space area would not affect the area's capacity for use and therefore would not cause or accelerate the substantial physical deterioration of the open area.

Given the proposed Project would not result in a new or permanent population that would substantially increase the use of recreational facilities, implementation of the proposed Project would not result in an associated increase in the use of nearby existing recreational facilities such that substantial physical deterioration of any existing recreational facilities would occur or be accelerated. Therefore, impacts would be *less than significant*, and mitigation is not necessary.

Impact RC-1
The Project would not result in substantial physical deterioration of existing parks or recreation facilities during either Project construction or operation.
Mitigation Measures
Mitigation is not necessary. Impact RC-1 would be less than significant.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

IMPACT RC-2: THE PROJECT WOULD NOT INCLUDE NEW RECREATIONAL FACILITIES THAT WOULD HAVE AN ADVERSE PHYSICAL EFFECT ON THE ENVIRONMENT. *(NO IMPACT)*

The proposed Project involves the second expansion of CMM, including a request for water and power utilities to be installed within the existing ROW to support the expansion. The proposed Project would not introduce new recreational facilities, nor would it require the expansion of existing recreational facilities. Therefore, *no impacts* would occur, and mitigation is not necessary.

Impact RC-2
The Project would not include new recreational facilities that would have an adverse physical effect on the environment.
Mitigation Measures
Mitigation is not necessary. No impacts would occur.

4.15.6 Cumulative Impacts

4.15.6.1 Transportation

IMPACT TR-5: THE PROJECT WOULD NOT CONTRIBUTE TO ANY CUMULATIVE IMPACTS RELATED TO TRAFFIC OR TRANSPORTATION. *(LESS THAN SIGNIFICANT)*

Chapter 3, *Environmental Setting*, of this EIR lists the projects with the potential to be considered in a cumulative context with the proposed Project's incremental contribution. These projects are summarized in Table 3-1, *Cumulative Development Scenario Project List* (see Chapter 3). Each cumulative project considered in this analysis of consistency with programs, plans, policies, and ordinances would be separately reviewed and approved by the County, including a review of consistency with applicable policies. Similar to the proposed Project, cumulative projects, especially those that are close geographically and would share the same set of federal, state, regional, and local roadways such as the Brightline West – Las Vegas to Victory Valley High Speed Rail project, would likely implement a similar CTMP (see AMP-TRA-2) with construction traffic measures to ensure traffic safety is maintained throughout construction activities to the maximum extent feasible. Coordination of these plans will ensure construction activities of concurrent cumulative projects and associated hauling activities (if any) are managed in collaboration with one another and the proposed Project. As the proposed Project would not be inconsistent and would not conflict with the programs, plans, policies, and ordinances that are analyzed above, the proposed Project in combination with the cumulative projects would not create inconsistencies nor result in cumulative impacts with respect to the identified programs, plans, policies, and ordinances.

The roadway network in the Project vicinity is characterized by free-flowing traffic conditions, with limited existing traffic. Other projects in the cumulative area primarily consist of transmission line, renewable energy generation, and transportation projects. These types of projects, similar to the proposed Project, would be unlikely to result in significant impacts related to VMT. Trips generated during construction would be temporary, and these types of projects usually require minimal trips during construction, primarily for maintenance, which would not result in significant VMT impacts. Because the Project's incremental contribution to regional VMT would be minimal, and cumulative projects would likely result in similar minimal impacts to regional VMT, the proposed Project would not result in a cumulatively considerable transportation impact.

With regard to geometric hazards, the proposed Project would not result in a significant impact due to a design feature. Each cumulative project would be reviewed by the County to ensure compliance with applicable County requirements relative to the provision of safe access for vehicles, pedestrians, and bicyclists. Furthermore, since modifications to access and circulation plans are largely confined to a Project Area and immediate surrounding area, a combination of impacts with other cumulative projects that could potentially lead to cumulative impacts is not expected. Therefore, there would not be a significant cumulative impact regarding geometric hazards, nor would the proposed Project's potential contribution to cumulative impacts associated with hazardous design conditions be considerable.

With regard to emergency access, the proposed Project would not result in a significant impact. The Project Area and the surrounding area are developed with existing roadway networks, and with existing routes for emergency vehicles and evacuation. Similar to the proposed Project, cumulative projects would likely implement a similar CTMP (see AMP-TRA-2) to include construction traffic measures to ensure adequate emergency access is maintained in and around the cumulative project areas throughout construction activities. Coordination of these plans will ensure construction activities of concurrent cumulative projects and associated hauling activities (if any) are managed in collaboration with one another and the proposed Project.

As such, the proposed Project would not contribute to existing cumulative impacts related to transportation. Therefore, impacts of the proposed Project, in addition to other past, present, and future projects, would be considered *less than significant* and less than cumulatively considerable.

Impact TR-5 (Cumulative Impacts)
The Project would not contribute to any cumulative impacts related to traffic or transportation.
Mitigation Measures
Mitigation is not necessary. Impact TR-5 would be less than significant.

4.15.6.2 Recreation

IMPACT RC-3: THE PROJECT WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE IMPACT TO RECREATIONAL FACILITIES. *(LESS THAN SIGNIFICANT)*

Chapter 3, *Environmental Setting*, of this EIR lists the projects with the potential to be considered in a cumulative context with the proposed Project's incremental contribution. The list of cumulative projects includes several existing and proposed transportation, transmission, and recreation improvement projects. These projects may contribute to temporary population growth in the area, which would minimally increase demand for other public services, including libraries and healthcare facilities, in the area.

As previously discussed, Project construction could temporarily increase the local population by up to 500 workers per day during the peak construction period, and there would be approximately 400 full-time employees on-site during Project operation. The majority of these workers are expected to reside locally or regionally, commuting to the Project Area from either San Bernardino County or Clark County. Therefore, it is unlikely that any workers would relocate to the area with their families and that demand on other recreational facilities in the area would increase.

The construction phase of the proposed Project may overlap with construction of other projects in the area. However, the cumulative projects, like the proposed Project, would not directly increase demand on recreational facilities, as they do not involve permanent or temporary housing components that would lead to direct increases in population. As such, the demands generated by the cumulative projects for recreational areas would be short-term and intermittent and would not require the construction or expansion of facilities. As such, the proposed Project and other development in the cumulative study area would not result in substantial permanent increases in population. Therefore, the impacts of the proposed Project, in addition to other past, present, and future projects, would be considered *less than significant* and less than cumulatively considerable.

Impact RC-3 (Cumulative Impacts)
The Project would not result in a cumulatively considerable impact to recreational facilities.
Mitigation Measures
Mitigation is not necessary. Impact RC-3 would be less than significant.

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4.16 WILDFIRE

This section of the EIR analyzes potential impacts to wildfire resulting from the implementation of the proposed Project. The analysis is based on a review of existing resources, technical data, and applicable laws, regulations, and guidelines, as well as technical reports prepared for the proposed Project. This analysis evaluates wildfire risk consistent with Appendix G of the CEQA Guidelines and considers both existing wildfire hazard conditions and Project-specific characteristics, including design features incorporated to reduce wildfire risk.

4.16.1 Existing Conditions

4.16.1.1 Wildfire Fundamentals

As defined in 24 California Code of Regulations (CCR) Chapter 49, Section 4902, as well as in California Public Resources Code (PRC) Sections 4103 and 4104, wildfire is described as any uncontrolled fire spreading through vegetative fuels threatening to destroy life, property, or resources. Wildfire behavior, and its ability to impact the surrounding environment, is primarily influenced by the condition and interaction between topography, weather, and vegetation (fuel) continuity and loading. Wildfire risk is dynamic and may vary over time due to climatic variability, vegetation regrowth following disturbance, and land management practices. Because of its hilly topography, desert climate, and continuous drying of fine fuels, the Mojave Desert can be susceptible to wildfire. High grass growth years combined with continuous drying and foehn winds can exacerbate conditions. An assessment of existing vegetation and fuel conditions within and adjacent to the Project Area is essential for evaluating wildfire risk resulting from implementation of the proposed Project. According to the California Department of Forestry and Fire Protection (CAL FIRE), the Project Area is within a Local Responsibility Area (LRA) and is designated as a moderate Fire Hazard Severity Zone (FHSZ). While a moderate FHSZ designation does not indicate an absence of wildfire risk, it reflects a lower probability of extreme wildfire behavior compared to areas designated as high or very high FHSZs.

4.16.1.2 Topography

Topography comprises the natural and artificial physical features of a landscape and is generally described through a combination of topographic features (e.g., canyons, chutes or saddles, rivers, valleys) and topographic characteristics such as the slope, aspect, or elevation of the land. The topography of an area, along with weather conditions and available fuel sources, largely influences fire behavior, including the rate, intensity, and direction in which a fire spreads (National Park Service [NPS] 2025). Natural features such as rivers, drainages, or rock outcrops may function as natural fire breaks, offering barriers to impede fire progression, whereas canyons and chutes or saddles in a ridgeline may channel air currents that accelerate the temperature and burn rate of a fire. Steep slopes generally facilitate rapid upward movement of fire due to the drying and heating of upslope fuels, while flat or gently sloping terrain may limit the spread and intensity of the fire. In addition to these topographic features, elevation, and the direction a slope faces, also known as the aspect, contribute to additional factors that influence the spread of wildfire, including the humidity or aridity of an area. In the northern hemisphere, north-facing slopes receive less direct exposure to the sun, which results in cooler temperatures and higher humidity in comparison to south-facing slopes with higher temperatures and lower humidity. Higher elevation terrain is generally cooler and drier than terrain of lower elevations.

The Project Area spans a shallow, north–south-oriented drainage with elevation rising to the north. To the east, the landscape is defined by rolling hills and sub-drainages with a predominant southwest aspect. The east side of the drainage has seen significant mining development, including multiple pits, roads, trenches, berms, and stockpiled soil. The west side of the drainage features a low-angle slope with a southeast

aspect. Beyond the Project Area, the topography becomes more complex and hillier to the east, marked by natural fire control features such as cliffs and rocky outcrops. In contrast, the terrain to the west and south consists of a uniform, low-angle slope intersected by shallow, braided perennial drainages. Elevation ranges from 4,100 to 5,100 feet.

4.16.1.3 Climate

The Mojave Desert experiences cool, wet winters and hot, dry summers, with most precipitation falling between November and March. Brief periods of rainfall can trigger a rapid green-up, causing grasses and other annual plants to grow quickly. However, these grass fuels dry out just as rapidly in the desert's arid conditions, becoming highly flammable and increasing the risk of wildfire. Southern California also experiences Santa Ana foehn winds, which are funneled from the Great Basin across Nevada and parts of Utah toward the California coast. These hot, dry winds primarily occur during the fall and winter months and enhance fire risk and severity by accelerating the combustion process, rate of fire spread, and potentially creating additional spot fires through ember transport.

4.16.1.4 Vegetation

Vegetation is a key determinant of shaping wildfire risk, spread, and intensity as it serves as a primary fuel source for wildfires. As one of the three integral components of the fire behavior triangle, fuel and its characteristics strongly influence fire behavior. Vegetative fuels comprise both living and decomposing plant material and impact the way a fire burns depending on available biomass and composition. Fuel properties such as density, moisture content, and chemical composition determine its flammability and combustion potential. Individual fuel sources located closely together, such as a cluster of shrubs and grasses, will readily ignite other nearby fuels, provided there is sufficient atmospheric oxygen. Vegetation containing a higher moisture content (e.g., live trees) slows the burning process, while vegetation with lower moisture that can evaporate quickly, such as dried grasses or fine leaves, accelerates the burning process. Additionally, vegetation containing high concentrations of resins, oils, or other volatile compounds may also promote combustion.

The Project Area is primarily Mojave Mid-Elevation Mixed Desert Scrub, composed of blackbrush (*Coleogyne ramosissima*) scrub with scattered Joshua trees (*Yucca brevifolia*). Blackbrush is fire-intolerant and may be slow to reestablish following fire, and grasses may dominate immediately following fire. Invasion of nonnative annual grasses following fire is likely under current conditions. Grass species include red brome (*Bromus rubens*) and common Mediterranean grass (*Schismus barbatus*) observed within the utility ROW and Project Area. With these grasses observed adjacent to roadways and disturbed areas, the likelihood of fire establishment is increased, and over time, fire frequency, fire extent, and vegetation type conversion are also likely to increase. Vegetation types were surveyed during an on-site botanical assessment of the Project Area, and the adjacent lands have similar vegetation types.

4.16.1.5 Fire History

The 2023 York Fire burned from July 28 to August 19, 2023, encompassing approximately 92,539 acres across multiple ownerships, including the BLM, NPS, State, and private land (Holbeck 2023; EIR Appendix 11). During the 2023 York Fire, the area north of the proposed Phase II heap leach pad to the North Nursery was burned, which resulted in the loss of most vegetation in the area. Following the fire, the BLM requested assistance from the Burned Area Emergency Response (BAER) program to prepare a post-wildfire response plan, including emergency stabilization treatment recommendations.

4.16.1.6 Emergency Response Fire Facilities

The Project Area is on both private land and federally owned land managed by the BLM. Fire response for the Project Area and adjacent areas is provided through mutual cooperative agreements between federal, State, and local agencies as outlined in the California Desert Interagency Fire Program (CDIFP) Fire Management Plan (FMP). According to the CDIFP FMP, one NPS and one BLM fire engine are stationed at the Hole-in-the-Wall Interagency Fire Center in the Mojave National Preserve (BLM and NPS 2024). Of the preparedness resources mentioned in the FMP, the Hole-in-the-Wall Interagency Fire Center would be the nearest fire station to the Project Area under the CDIFP, located approximately 20 miles southwest of the Project Area. Additionally, the nearest San Bernardino County Fire Protection District (SBCoFD) fire stations to the Project Area are Fire Station No. 32, located at 1113 East Broadway Avenue in Needles, approximately 81 miles southeast of the Project Area, and Fire Station 53, located at 72734 Baker Boulevard in Baker, approximately 81 miles west of the Project Area. The nearest air tanker resources are at the San Bernardino immediate-use air tanker bases and Victorville Airport extra effort base.

4.16.1.7 Evacuation Routes

The *San Bernardino County Emergency Operations Plan* (EOP) details emergency management operations, including preparedness, response, recovery, and mitigation processes (County of San Bernardino 2019). The EOP provides the framework for San Bernardino County's (County) emergency organization, which is composed of the County, cities, towns, special districts, schools, and private sector organizations, in addition to federal and State agencies. The EOP was developed in accordance with federal and State guidelines for emergency plans, including the Standardized Emergency Management System and National Incident Management System standards.

The primary evacuation route for the Project Area is the Hart Mine Road. The secondary evacuation route for the Project Area is New York Mountain Road. Both evacuation routes lead to Ivanpah Road, with egress options to the north toward the former town of Barnwell and to the south toward the former town of Lanfair. All three roads are gravel/dirt and can support the movement of heavy vehicles.

4.16.2 Regulatory Setting

4.16.2.1 Federal

CALIFORNIA DESERT CONSERVATION AREA PLAN

The California Desert Conservation Area (CDCA) Plan encompasses approximately 25 million acres in Southern California and was designated by Congress in 1976 under the Federal Land Policy and Management Act of 1976 (FLPMA). Of the total acreage, the BLM administers approximately 12 million acres. As directed by Congress, the BLM was required to prepare a comprehensive, long-range plan for the management of use, development, and protection of public lands within the CDCA. The resulting CDCA Plan (BLM 1999) is founded on principles of multiple use, sustained yield, and the maintenance of environmental quality and provides overarching regional guidance for the management of BLM-administered lands within the CDCA, providing long-term objectives for the protection and use of the California desert. Under the CDCA Plan guidelines for fire management, fire suppression measures are required in accordance with specific wilderness fire management plans to be followed by the authorized officer, and may include use of motorized vehicles, aircraft, and fire-retardant chemicals (BLM 1999).

FEDERAL WILDLAND FIRE MANAGEMENT POLICY

The Federal Wildland Fire Management Policy (FWFMP) serves as a framework to guide federal agencies involved in wildfire management and establishes fire management policy across the various federal jurisdictions, including the BLM, NPS, and U.S. Fish and Wildlife Service (USFWS). The FWFMP establishes policies, including fire management and ecosystem sustainability, response to and use of wildland fire, rehabilitation and restoration, preparedness, suppression, and prevention, along with other management activities, all with firefighter and public safety as a central priority. The FWFMP encourages interagency cooperation and coordination, basing wildfire response on approved local fire management and land management plans.

CDIFP FIRE MANAGEMENT PLAN

The CDIFP, under the Reciprocal Fire Protection Act of 1955 (42 United States Code 1856(a)), was established to manage wildfire across jurisdictional boundaries throughout the California desert area, including Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego Counties. The CDIFP FMP is a strategic plan to manage wildfire, prescribed fire, and prescribed fire fuel treatments, based on national interagency wildland fire policy and existing planning documents. The CDIFP FMP planning area comprises the California Desert District and Death Valley National Park, Joshua Tree National Park, Castle Mountains National Monument, and Mojave National Preserve.

NATIONAL FIRE PLAN

The National Fire Plan (NFP) was developed in 2000, after the Secretaries of Agriculture and the Interior were directed to develop a response to wildland fires, reduce fire impacts on rural communities, and strengthen preparedness and firefighting capacity. The NFP was founded on cooperation and collaboration with federal agencies, states, counties, local and Tribal governments, contractors, and other service providers and addresses efforts, including firefighting, rehabilitation and restoration, hazards fuel reduction, forest health management, and rural and community assistance.

NATIONAL FIRE PROTECTION ASSOCIATION CODES, STANDARDS, PRACTICES, AND GUIDES

The National Fire Protection Association (NFPA) develops fire, electrical, and building safety codes and standards through an open, consensus-based process approved by the American National Standards Institute. The development process involves input from the public, industry, and stakeholders, as well as a technical review to achieve consensus on fire hazards and safety concerns. While nationally accepted as good practices in fire protection, NFPA standards serve as recommended guidelines rather than laws or codes, unless specifically adopted or referenced by local fire agencies or the California Fire Code (CFC). Applicable standards would include, but are not limited to, the Standard for Wildland Fire Protection (NFPA 1140) and Standard for Portable Fire Extinguishers (NFPA 10).

INTERNATIONAL FIRE CODE

Implemented by the International Code Council (ICC), the International Fire Code (IFC) addresses hazardous conditions and various threats to lives and property, including fire, explosions, and the management of hazardous materials. The IFC uses a permit system based on a hazard classification system that determines appropriate measures to protect lives and property. While not a federal regulation, the IFC is implemented by the ICC to promote awareness of the importance of fire prevention and protection systems. The IFC undergoes review and is updated every three years. The County has adopted the 2021 edition of the IFC.

4.16.2.2 State

CAL FIRE 2024 STRATEGIC FIRE PLAN

The 2024 Strategic Fire Plan (2024 Fire Plan) for California is a joint initiative between the California State Board of Forestry and Fire Protection and CAL FIRE. The 2024 Fire Plan serves as the latest rendering in a series of statewide fire management plans that have been periodically adopted since the 1930s. The 2024 Fire Plan emphasizes two main objectives: (1) the implementation of fire prevention and suppression strategies to safeguard lives, property, and ecosystem services, and (2) the application of natural resource management practices aimed to maintain forests statewide as a carbon sink, which are integral to meeting California's climate change goals and providing critical habitat for adaptation and mitigation efforts. Progress toward the objective outlined in the 2024 Fire Plan is monitored through annual updates provided by CAL FIRE to the California State Board of Forestry and Fire Protection (CAL FIRE 2024).

CALIFORNIA PUBLIC UTILITIES COMMISSION GENERAL ORDER NO. 95

California Public Utilities Commission General Order No. 95 establishes uniform requirements for overhead electrical line construction in California to ensure adequate service and secure safety to individuals involved in the construction, operations, maintenance, or use of overhead electrical lines and to the public. These standards apply to overhead electrical supply as well as communication lines.

CALIFORNIA GOVERNMENT CODE SECTIONS 51175–51189

California Government Code Sections 51175–51189 recognize the threat of wildfires and underscore the necessity for coordinated action among federal, state, and local agencies to develop and implement preventive measures. Pursuant to these statutes, CAL FIRE is directed to map areas in the state as moderate, high, and very high FHSZs based on factors such as weather, fuels, and terrain. The resulting zone designations are communicated to local agencies, which are then required to designate the zones in an LRA by ordinance within 120 days of notification. LRAs are designated by local agencies upon the recommendation of CAL FIRE where a local agency is responsible for fire protection. Properties designated within a very high FHSZ are required to maintain a defensible space of 100 feet from each side of a structure.

CALIFORNIA PUBLIC RESOURCES CODE

The proposed Project would be subject to the following sections of the PRC:

- **PRC Section 4291** requires the management of fuels to maintain a defensible space of at least 100 feet from buildings adjacent to or nearby flammable landscapes to reduce fire risk. Exemptions may apply to buildings or structures constructed with nonflammable materials.
- **PRC Sections 4292–4296** establish vegetation clearance requirements for electrical transmission and distribution lines located on mountainous land, or forest-covered land, brush-covered land, or grass-covered land.
- **PRC Section 4741** authorizes CAL FIRE to assist local governments, including cities, counties, and special districts with wildland fire prevention and fuels management. Under Section 4741, CAL FIRE serves an advisory role providing guidance and expertise to local agencies.

CALIFORNIA CODE OF REGULATIONS

The following sections of the CCR, relating to fire safety, accessibility, water supply, and development in fire-prone areas, would be applicable to the proposed Project.

Title 14 – Natural Resources

CCR Title 14 establishes standards for defensible space and managing waste. It also provides alternatives, including the use of noncombustible materials and modifying structure design when standard clearance distances cannot be fulfilled.

Title 19 – Public Safety

CCR Title 19 establishes the standards for fire prevention as well as the protection of life and property from fire and explosions. Title 19 includes public safety regulations covering alarms, emergency planning, evacuation procedures, and fire department access and is regularly reviewed by the Office of the State Fire Marshal Code Development and Analysis Program. It also details the Standardized Emergency Management System (SEMS), which ensures coordinated emergency responses across agencies.

Title 24 – California Building Standards Code

CCR Title 24, the California Building Standards Code, establishes fire safety and construction standards for buildings and structures. Part 9 of the California Building Code is the CFC, which includes standards for design and construction of buildings to ensure protection from fire hazards.

2025 CALIFORNIA FIRE CODE

The 2025 CFC outlines regulations consistent with nationally recognized practices for safeguarding life and property against fire and explosion, hazardous conditions in the use or occupancy of buildings, and adverse conditions related to the storage, handling, and use of hazardous materials. The CFC bolsters safety for emergency responders and building occupants by regulating all aspects of building construction, use, and maintenance, including the use of fire-resistance-rated materials, fire protection systems, and emergency access routes.

4.16.2.3 Local

SAN BERNARDINO COUNTYWIDE PLAN

The *San Bernardino Countywide Plan* (CWP) contains the long-term goals and policies that will guide County decisions, investments, and improvements toward achieving the Countywide Vision. It serves as the County's General Plan for the unincorporated areas and includes policy direction for regional services the County administers in both incorporated and unincorporated areas. Relevant goals and policies from the Hazards and Personal and Property Protection Elements of the County Policy Plan are summarized in Table 4.7-1 (County of San Bernardino 2024).

Table 4.16-1. Applicable Goals and Policies of the San Bernardino Countywide Plan

Goal/Policy	Goal/Policy Description
Hazards Element	
Policy HZ-1.2	**New development in environmental hazard areas.** The County requires all new development to be located outside of the environmental hazard areas listed below. For any lot or parcel that does not have sufficient buildable area outside of such hazard areas, the County requires adequate mitigation, including designs that allow occupants to shelter in place and to have sufficient time to evacuate during times of extreme weather and natural disasters.
Policy HZ 1.9	**Hazard areas maintained as open space.** The County minimizes risk associated with flood, geologic, and fire hazard zones or areas by encouraging such areas to be preserved and maintained as open space.
Policy HZ-1.13	**Fire protection planning.** The County requires that all new development in County-designated Fire Safety Overlay and/or CAL FIRE-designated Very High Fire Hazard Severity Zones meet the requirements of the California Fire Code and the California Building Code as amended by the County Fire Protection District, including Title 14 of the California Code of Regulations fire safety requirements for any new development within State Responsibility Areas, as well as provide and maintain a Fire Protection Plan or Defensible Space/Fuel Modification Plan and other pre-planning measures in accordance with the County Code of Ordinances.
Policy HZ-1.14	**Long-term fire hazard reduction and abatement.** The County requires proactive vegetation management/hazard abatement to reduce fire hazards on existing private properties, along roadsides of evacuation routes out of wildfire prone areas, and other private/public land where applicable, and the County requires new development to enter into a long-term maintenance agreement for vegetation management in defensible space, fuel modification, and roadside fuel reduction in the Fire Safety Overlay and/or Very High Fire Hazard Severity Zones.
Policy HZ-1.15	**Evacuation route adequacy.** The County coordinates with CAL FIRE, California's Office of Emergency Services, and other local fire districts to identify strategies that ensure the maintenance and reliability of evacuation routes potentially compromised by wildfire, including emergency evacuation and supply transportation routes.
Personal and Property Protection Element	
Policy PP-3.1	**Fire and emergency medical services.** The County maintains a sufficient number and distribution of fire stations, up-to-date equipment, and fully-trained staff to respond effectively to emergencies.
Policy PP-3.4	**Fire prevention services.** The County proactively mitigates or reduces the negative effects of fire, hazardous materials release, and structural collapse by implementing the California Fire Code, adopted with County amendments.
Policy PP-3.5	**Firefighting water supply and facilities.** The County coordinates with water providers to maintain adequate water supply, pressure, and facilities to protect people and property from urban fires and wildfires.
Policy PP-3.8	**Fire-adapted communities.** The County informs and prepares our residents and businesses to collaboratively plan and take action to more safely coexist with the risk of wildfires.
Policy PP-3.11	**Post-burn risk.** In areas burned by wildfire, the County requires new and reconstructed development to adhere to current development standards, and may require additional study to evaluate increased flooding, debris flow, and mudslide risks.
Policy PP-4.1	**Emergency management plans.** The County maintains, updates, and adopts the Emergency Operations Plan, Continuity of Operations Plan, and the Multi-Jurisdictional Hazard Mitigation Plan. Plan updates are coordinated with wildfire hazard planning efforts of outside agencies, such as CAL FIRE Strategic Fire Plan, Community Wildfire Protection Plans, U.S. Forest Service, military institutions, California Fire Safe Council and other non- profit stakeholder groups, and other applicable local, state, and federal agencies.

SAN BERNARDINO COUNTY EMERGENCY OPERATIONS PLAN

Section 8.2, *Emergency Evacuation*, of the EOP (County of San Bernardino 2019) outlines proper planning considerations for the County during emergency evacuation and transportation, such as in the event of a wildfire. Section 18.6, *Hazard Profile – Wildfire*, provides a hazard profile specifically for wildfires, outlining past wildfire occurrences in the county, conditions contributing to fire hazards, and fire severity zones.

SAN BERNARDINO COUNTY FIRE PROTECTION DISTRICT

The SBCoFD is an all-hazard emergency services provider serving 19,200 of the 20,160 square miles encompassing San Bernardino County (SBCoFD 2026). The SBCoFD's Office of Emergency Services also serves as the Operational Area Lead Agency, coordinating emergency services across the county and developing nationally and State-recognized emergency plans and procedures. The Project Area is in Divisions 4 and 5 of the SBCoFD service area.

4.16.3 Thresholds of Significance

The following thresholds of significance are based on the Environmental Checklist contained in Appendix G of the State CEQA Guidelines. The Project would result in significant adverse impacts related to wildfire if the Project were in a State Responsibility Area (SRA), within a very high FHSZ, and would:

a) substantially impair an adopted emergency response plan or emergency evacuation plan;

b) due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;

c) require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or

d) expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes;

Project analysis under each threshold is discussed in section 4.16.5, *Project Specific Impacts and Mitigation Measures*, below.

4.16.4 Impact Assessment Methodology

An impact analysis was completed and relevant design features from the Plan of Development (POD) and Mine Plan (MP) are described under Section 4.16.5, *Project-Specific Impacts and Mitigation Measures*. The impact analysis considered both spatial and temporal scales:

- **Spatial:** The approved Project Area, which covers all construction and disturbed ground. A 100-foot-perimeter buffer is added to capture near-edge effects, such as altered fuel continuity, increased dryness, and initial invasive plant encroachment, documented to occur within a few dozen meters of new disturbance. Effects beyond this distance are expected to be negligible, thus no 0.5-mile indirect effect zone is applied.
- **Temporal:** The construction period (anticipated to last 2–3 years), the operational phase (approximately 20 years), and the reclamation period (approximately 10 years), which reflect both short- and long-term fire risk tied to site activity and infrastructure presence.

The impact analysis used the following data sources for determining potential impact-causing elements:

- LANDIFRE 2024 Scott and Burgan 40 Fuel Models
- LANDFIRE 2024 Existing Vegetation Type
- LANDFIRE 2024 Canopy Height and Vegetation Height
- CAL FIRE and BLM Historic Fire-Start Database (2015–2024)

- Spatial data, including topography, slope, elevation, and aspect
- Remote Automated Weather Station Data
- Plan of Development
- Mine Plan

According to CAL FIRE, the Project Area is within an LRA and is designated as a moderate FHSZ. While a moderate FHSZ designation does not indicate an absence of wildfire risk, it reflects a lower probability of extreme wildfire behavior compared to areas designated as high or very high FHSZs. Therefore, because the Project Area is not in a State Responsibility Area (SRA), within a very high FHSZ, all the thresholds of significance identified under Wildfire within the Environmental Checklist will result in a no-impact determination.

The FHSZ map is intended to demonstrate the probability of hazards associated with the existing physical setting of a location. The FHSZ map does not demonstrate fire damage risk associated with the development of any specific proposed project, as it does not account for the use of project-specific design features or implementation of mitigation measures associated with the development of a project. Therefore, with the implementation of Project-specific design features, a moderate hazard will result in no impact to evacuation, fire behavior, and wildfire risk to people and property.

Accordingly, the analysis below evaluates whether Project construction, operation, or reclamation would introduce conditions that would substantially increase wildfire hazards beyond existing baseline conditions or impair emergency response or evacuation capacity.

4.16.5 Project-Specific Impacts and Mitigation Measures

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

IMPACT WF-1: THE PROJECT WOULD NOT SUBSTANTIALLY IMPAIR AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN DURING EITHER CONSTRUCTION, OPERATION, OR RECLAMATION. *(NO IMPACT)*

The impact analysis determined the following potential impact-causing elements:

- Temporary or narrow haul-road segments, steep switchbacks (>8% grade), heavy-equipment traffic, and dust that reduce visibility and delay engine ingress.
- New roads, fencing, gates, or infrastructure that may inhibit or mislead evacuations.
- Locked gates and limited turnaround radius on legacy roads in rugged terrain.

These conditions are typical of mining transportation infrastructure in the vicinity of the project and adjacent BLM lands. Emergency response personnel would expect these conditions during a wildfire event, and mine personnel would be familiar with emergency evacuation procedures and routes. To improve mine operability and potential evacuation response, the POD includes several design features to improve road conditions, passage, and use.

The impact analysis identified the following design features:

- The 18-mile Castle Mountain Mine access road will be graded quarterly and kept drivable (POD 1.1.2).
- No vehicle or equipment maintenance will be performed on roads or rights-of-way (POD 1.1.2).
- Non-routine road maintenance includes activities that generally only occur once every few years and may include replacing an existing culvert that spans one of the many ephemeral drainage crossings (POD 1.1.2).
- Application of dust repellent (POD 1.1.2).
- All personnel will be advised of their responsibilities under applicable federal, State, and County fire-prevention laws and reliability standards (POD 7.3).

Although mining-related infrastructure includes unpaved roads, grades, and heavy equipment traffic typical of the region, emergency responders operating within the California Desert are accustomed to such conditions. The Project incorporates design features to maintain road functionality and visibility during emergency conditions, including grading, dust control, and access management.

Peak workforce conditions, including contractor presence during construction, would be subject to mandatory site orientation, emergency training, and evacuation procedures to ensure that all personnel can safely evacuate during wildfire events.

Therefore, the proposed Project would not substantially impair emergency response or evacuation plans described in Section 4.16.2, *Regulatory Setting*, and *no impact* would occur.

Impact WF-1
The Project would not substantially impair an adopted emergency response plan or emergency evacuation plan during either construction, operation, or reclamation.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

b) Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

IMPACT WF-2: THE PROJECT WOULD NOT EXACERBATE WILDFIRE RISKS AND THEREBY EXPOSE PROJECT OCCUPANTS TO POLLUTANT CONCENTRATIONS FROM A WILDFIRE OR THE UNCONTROLLED SPREAD OF A WILDFIRE. *(NO IMPACT)*

The impact analysis determined the following potential impact-causing elements:

- Construction, operation, and reclamation activities may facilitate the introduction and spread of invasive species (e.g., red brome), increasing fine fuel continuity and wildfire hazard.
- Stockpiling slash and topsoil berms that can dry and cure would increase fuel concentration and amount of fuel available for burning.

The impact analysis identified the following design features:

- Topsoil will be placed in separate furrows during trench excavation and returned following backfill to preserve soil integrity (POD 5.2.1; MP 5.4.2).
- Salvaged vegetation used as vertical mulch to suppress invasives and aid native germination (POD 6.2).
- Certified weed-free native seed mixes tailored to vegetation types (POD 6.2; MP 5.4.2).

Ground disturbance will likely contribute to invasive nonnative grass proliferation and spread, particularly adjacent to roads and within and adjacent to staging areas and areas where mining operations and reclamation activities are proposed. Red brome (*Bromus rubens*) and common Mediterranean grass (*Schismus barbatus*) are present within the project area and likely to expand throughout the life of the project. Red brome (*Bromus rubens*) in particular is known to impact the fire regime by increasing fire frequency, rate of spread, and size. Red brome (*Bromus rubens*) is more susceptible to burning than Mojave Desert native plant species because they cure faster and create a more continuous fuel bed than native species. Flames generated by red brome (*Bromus rubens*) can ignite small shrubs but are generally insufficient to ignite larger shrubs. The project area is dominated by blackbrush (*Coleogyne ramosissima*) with scattered Joshua trees (*Yucca brevifolia*), which are mid to large shrubs that have a lower likelihood of ignition from fire burning in established nonnative grass stands. POD design features would potentially reduce impacts to invasive nonnative grass proliferation in the project area and reduce impacts on fire establishment and spread. Therefore, there would be *no impact*.

Impact WF-2
The Project would not exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

c) Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

IMPACT WF-3: THE PROJECT WOULD NOT EXACERBATE FIRE RISK OR RESULT IN TEMPORARY OR ONGOING IMPACTS TO THE ENVIRONMENT AS A RESULT OF INSTALLATION OF ASSOCIATED INFRASTRUCTURE (SUCH AS ROADS, FUEL BREAKS, EMERGENCY WATER SOURCES, POWER LINES, OR OTHER UTILITIES). *(NO IMPACT)*

The impact analysis determined the following potential impact-causing elements:

- Increased construction, operation, and reclamation activities that may increase the risk of wildfire ignitions for any reason.
- The risk of wildfire ignitions may be increased by:
    - Diesel/gas engines, welding, blasting, power tools.

- Vehicle traffic on unpaved haul roads.
- Fixed electrical installations (pumps, lighting).
- Increased human presence (smoking).

The impact analysis identified the following design features:

- All federal, State, and County laws, ordinances, rules, and regulations, which pertain to prevention, pre-suppression, and suppression of fires, will be strictly adhered to, including fire safety requirements and reliability standards established by the Electric Reliability Organization (POD 7.3).
- All personnel will be advised of their responsibilities under the applicable fire laws and regulations. It will be the responsibility of CMV to notify the BLM Las Vegas Interagency Communication Center at (702) 631-2350, if a Project-related fire occurs within or adjacent to the construction area in Nevada, and to 911 if a Project-related fire occurs in California (POD 7.3).
- Fire extinguishers will be available in the construction area. Water from a water truck that may be used for construction and dust control will be available for firefighting, and CMV will take aggressive action to prevent and suppress fires on and adjacent to the construction area, and will utilize its workers and equipment on the Project for fighting fires within the construction area (POD 7.3).

Despite the increased risk of fire ignitions during construction, mine operation, and reclamation, the POD design features aimed to prevent and suppress wildfires on and adjacent to construction areas would greatly improve fire response times. By having fire response equipment and resources onsite, fire ignitions within or adjacent to the construction site have a lower likelihood of establishment and spread than relying on local and federal wildfire fire response resources. Establish containment features for wildfire management, further improving the likelihood of successfully managing fire starts. Therefore, there would be *no impact*.

Impact WF-3
The Project would not exacerbate fire risk or result in temporary or ongoing impacts to the environment as a result of installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities).
Mitigation Measures
Mitigation is not necessary. No impact would occur.

d) Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

IMPACT WF-4: THE PROJECT WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO SIGNIFICANT RISKS, INCLUDING DOWNSLOPE OR DOWNSTREAM FLOODING OR LANDSLIDES, AS A RESULT OF RUNOFF, POST-FIRE SLOPE INSTABILITY, OR DRAINAGE CHANGES. *(NO IMPACT)*

The impact analysis determined no potential impact-causing elements. Project construction, including grading, filling, building construction, and mine development, would result in the conversion of burnable fuel model types to non-burnable, thereby decreasing the likelihood of wildfire resulting in soil hydrophobicity or the burning of soil-stabilizing vegetation within the Project Area. Therefore, there would be *no impact.*

Impact WF-4
The Project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

4.16.6 Cumulative Impacts

IMPACT WF-5: THE PROJECT WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE IMPACT RELATED TO WILDFIRE. *(NO IMPACT)*

Since the Project would not result in impacts related to wildfire, it would not contribute to or be combined with other cumulative projects to produce related cumulatively considerable impacts. Therefore, *no cumulative impacts* related to wildfire would occur.

Impact WF-5 (Cumulative Impacts)
The Project would not result in a cumulatively considerable impact related to wildfire.
Mitigation Measures
Mitigation is not necessary. No impact would occur.

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4.17 MANDATORY FINDINGS OF SIGNIFICANCE

This section provides consideration of the proposed Project and the Mandatory Findings of Significance in response to the Environmental Checklist questions included in State CEQA Guidelines Appendix G, Section XXI, and State CEQA Guidelines Section 15065. The information provided in this section is based on the data and analyses conducted for this EIR (see Chapter 4, *Environmental Impact Analysis*, Sections 4.1 through 4.16, for a more detailed discussion of project impacts related to each resource topic).

4.17.1 Environmental Evaluation

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

IMPACT MF-1: THE PROJECT WOULD HAVE THE POTENTIAL TO SUBSTANTIALLY DEGRADE THE QUALITY OF THE ENVIRONMENT, SUBSTANTIALLY REDUCE THE HABITAT OF A FISH OR WILDLIFE SPECIES, CAUSE A FISH OR WILDLIFE POPULATION TO DROP BELOW SELF-SUSTAINING LEVELS, THREATEN OR ELIMINATE A PLANT OR ANIMAL COMMUNITY, SUBSTANTIALLY REDUCE THE NUMBER OR RESTRICT THE RANGE OF A RARE OR ENDANGERED PLANT OR ANIMAL, AND ELIMINATE IMPORTANT EXAMPLES OF THE MAJOR PERIODS OF CALIFORNIA HISTORY OR PREHISTORY. *(LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED)*

As discussed in Section 4.4, *Biological Resources*, potential adverse effects, including permanent direct and permanent indirect impacts, to special status plant and wildlife species could result from Project construction, operation, and maintenance, as well as future reclamation activities. Seven special status plant species were determined to occur within the study area—Parish's club-cholla, viviparous foxtail cactus, rosy two-toned beardtongue, Mojave milkweed, black grama, thorny milkwort, and Clark Mountain buckwheat—and 26 special status plant species are likely to occur. Twenty-one special status wildlife species, including three reptiles, 12 mammals, and six avian species, were determined to occur within the study area—desert horned lizard, desert iguana, desert tortoise, Bendire's thrasher, common nighthawk, golden eagle, loggerhead shrike, phainopepla, pinyon jay, American badger, desert kit fox, California myotis, canyon bat, pallid bat, Townsend's big-eared bat, Mexican free-tailed bat, big brown bat, Yuma myotis, fringed myotis, small-footed myotis, and desert bighorn sheep. Additionally, direct impacts include the permanent and temporary removal of sensitive natural communities, including Joshua Tree Woodland and Desert Wash System, as a total of 567.78 acres of California Department of Fish and Wildlife (CDFW) sensitive vegetation will be permanently removed by implementation of the proposed Project. In addition, 80.70 acres of CDFW sensitive vegetation will be temporarily impacted by implementation of the proposed Project. The proposed Project may also result in 23.07 acres of permanent impacts and 1.48 acres of temporary impacts to CDFW-regulated streambed and 18.54 acres of

permanent impacts and 1.07 acres of temporary impacts to State Water Resources Control Board (State Water Board)-regulated streambed. Of the impacts to CDFW resources, 4.53 acres of permanent impacts and 0.41 acre of temporary impacts are associated with CDFW-associated riparian habitat and the remaining are associated with CDFW streambed. Data suggests that bighorn sheep groups travel through and adjacent to the proposed Project expansion areas, particularly near/within the proposed utility rights-of-way (ROWs). Thus, the proposed Project may substantially impact migratory corridors for resident and/or migratory desert bighorn sheep and could impede the use of bighorn sheep nursery sites. These impacts can be reduced to less-than-significant levels by implementing Mitigation Measures MM-BI-1.1 through MM-BI-1.31, MM-BI-2.1 through MM-BI-2.5, and MM-BI-3.1, as detailed in Chapter 4, *Environmental Impact Analysis*. With implementation of these measures, the proposed Project would not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal.

As discussed in Section 4.5, *Cultural and Tribal Cultural Resources*, two earthen levees that are associated with a larger Nipton townsite (P-36-024864/CA-SBR-2486H), which is a historic built environment resource that qualifies as a historical resource under CEQA, will be directly impacted by the proposed Project. As a result of this analysis, it was determined that development of the proposed Project could impact significant historical resources and that mitigation measures are necessary to reduce or avoid impacts to less-than-significant levels. Upon implementation of Mitigation Measure MM-CR-1.1, the proposed Project would not cause a substantial adverse change in the significance of historical resources pursuant to State CEQA Guidelines Section 15064.5. Nine archaeological resources have been identified within the Project Area that are eligible or assumed eligible for listing in the California Register of Historical Resources (CRHR). Ground-disturbing activities also have the potential to encounter subsurface archaeological resources that have not been previously identified in the Project Area. If archaeological resources are discovered during ground-disturbing activities that meet the eligibility requirements for listing in the CRHR and retain their integrity, they would be historical resources under CEQA. As a result of this analysis, it was determined that ground disturbance for the proposed Project could impact significant archaeological resources and that mitigation measures are necessary to reduce or avoid impacts to less-than-significant levels. Upon implementation of Mitigation Measure MM-CR-1.1, the proposed Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5. One archaeological resource—the Hart Townsite (P-36-003060/CA-SBR-3060/H)—contains a historic-era cemetery. If the portion of the site (Locus 18) containing the cemetery cannot be avoided, the proposed Project could result in impacts to human remains in a dedicated cemetery. Additionally, there is a possibility that human remains, including those interred outside of dedicated cemeteries, may be encountered unexpectedly during ground-disturbing activities. Implementation of Mitigation Measures MM-CR-1.1 and MM-CR-3.1 would reduce these impacts to less-than-significant levels. With implementation of these mitigation measures, the proposed Project would not eliminate important examples of the major periods of California history or prehistory.

Table 4.17-1 provides a summary of impacts and significance after mitigation for biological resources and cultural and tribal cultural resources.

Table 4.17-1. Summary of Impacts and Significance after Implementation of Mitigation Measures for Biological Resources and Cultural and Tribal Cultural Resources

Impact Threshold with Potentially Significant Impact		Impact Statement	Mitigation Measure Identification	Significance After Mitigation
Section 4.4 Biological Resources				
a)	Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	The proposed Project could result in significant effects, including permanent direct and indirect impacts to special status plant and wildlife species during Project construction, operation, maintenance, and future reclamation activities. Seven special status plant species were determined to occur within the study area, 26 special status plant species are likely to occur, and 21 special status wildlife species, including three reptiles, 12 mammals, and six avian species, were determined to occur within the study area. Impacts during Project construction, operation, maintenance, and future reclamation activities could be significant. (CEQA Checklist Appendix G Threshold IV.a)	MM-BI-1.1 through MM-BI-1.31	Less than Significant with Mitigation
b)	Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	The proposed Project could directly and indirectly impact sensitive natural communities during construction, operation, maintenance, and future reclamation activities. A total of 567.78 acres of CDFW sensitive vegetation will be permanently removed by implementation of the proposed Project. In addition, 80.70 acres of CDFW sensitive vegetation will be temporarily impacted by implementation of the proposed Project. Impacts during Project construction, operation, maintenance, and future reclamation activities could be significant. (CEQA Checklist Appendix G Threshold IV.b)	MM-BI-2.1 through MM-BI-2.5	Less than Significant with Mitigation
c)	Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means?	Project construction, operation, maintenance, and future reclamation activities may result in impacts to wetland habitat. The proposed Project may result in permanent and temporary impacts to CDFW-regulated streambed and permanent and temporary impacts to State Water Board-regulated streambed. Impacts during Project construction, operation, maintenance, and future reclamation activities could be significant. (CEQA Checklist Appendix G Threshold IV.c)	MM-BI-3.1	Less than Significant with Mitigation
d)	Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	The proposed Project could substantially impact migratory corridors for resident and/or migratory desert bighorn sheep, and could impede the use of bighorn sheep nursery sites. Impacts during Project construction, operation, maintenance, and future reclamation activities could be significant. (CEQA Checklist Appendix G Threshold IV.d)	MM-BI-1.4, MM-BI-1.5, MM-BI-1.6, MM-BI-1.17, MM-BI-1.19, MM-BI-1.22, MM-BI-1.23, and MM-BI-1.24	Less than Significant with Mitigation

Impact Threshold with Potentially Significant Impact	Impact Statement	Mitigation Measure Identification	Significance After Mitigation
Section 4.5 Cultural and Tribal Cultural Resources			
a) Would the project cause a substantial adverse change in the significance of a Historical Resource Pursuant to Section 15064.5 of the State CEQA Guidelines?	Project construction could cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the State CEQA Guidelines. Specifically, a portion of two earthen levees (P-36-024864/CA-SBR-2486H) will be directly impacted during construction and operation of the proposed Project. This impact could be significant. (CEQA Checklist Appendix G Threshold V.a)	MM-CR-1.1	Less than Significant with Mitigation
b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	Project construction and operation could cause a substantial adverse change in the significance of an archaeological resource pursuant to the State CEQA Guidelines. Specifically, nine archaeological resources have been identified within the Project Area that are eligible or assumed eligible for listing in the CRHR. Ground disturbance for the proposed Project could impact significant archaeological resources. (CEQA Checklist Appendix G Threshold V.b)	MM-CR-1.1	Less than Significant with Mitigation
c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	Project construction and operation could disturb human remains, including those interred outside of dedicated cemeteries. One archaeological resource—the Hart Townsite (P-36-003060/ CA-SBR-3060/H)—contains a historic-era cemetery. If the portion of the site containing the cemetery cannot be avoided, the proposed Project could result in impacts to human remains in a dedicated cemetery. Additionally, there is a possibility that human remains, including those interred outside of dedicated cemeteries, may be encountered unexpectedly during ground-disturbing activities. (CEQA Checklist Appendix G Threshold V.c)	MM-CR-1.1 and MM-CR-3.1	Less than Significant with Mitigation

Impact MF-1
The Project would have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, and eliminate important examples of the major periods of California history or prehistory. (CEQA Checklist Appendix G Threshold XXI.a).
Mitigation Measures
Implementation of Mitigation Measures MM-BI-1.1 through MM-BI-1.31, MM-BI-2.1 through MM-BI-2.5, MM-BI-3.1, MM-CR-1.1, and MM-CR-3.1 shall be required.
Impacts Following Mitigation
With implementation of the identified mitigation measures, impacts to biological resources and cultural and tribal cultural resources would be less than significant.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

IMPACT MF-2: THE PROJECT WOULD RESULT IN CUMULATIVELY CONSIDERABLE IMPACTS RELATED TO AIR QUALITY FROM PROJECT CONSTRUCTION AND OPERATION EMISSIONS. *(CUMULATIVE CONSIDERABLE)*

Chapter 3, *Environmental Setting*, details the existing and reasonably foreseeable future development projects located in proximity to the Project Area. The related projects generally consist of transportation, utilities, recreation, transmission, water development, mining, solar, broadband, access, communications, and commercial projects. Additionally, the cumulative effects of the proposed Project have been analyzed for each environmental topic area included in this EIR and can be found following the impact analysis sections in Chapter 4, *Environmental Impact Analysis*. The proposed Project would result in cumulatively considerable impact related to air quality construction and operation emissions (Section 4.3.6, *Cumulative Impacts*). Although implementing the proposed mitigation measures would reduce Project impacts, they would not mitigate them to less than cumulatively considerable contributions to potential cumulative impacts. Therefore, the proposed Project's impacts related to air quality construction and operation emissions would remain *cumulatively considerable*.

Impact MF-2
The Project would result in cumulatively considerable impacts related to air quality from Project construction and operation emissions. (CEQA Checklist Appendix G Threshold XXI.b)
Mitigation Measures
Implementation of Mitigation Measures MM-AQ-1 and MM-AQ-2 shall be required.
Impacts Following Mitigation
Although implementation of Mitigation Measures MM-AQ-1 and MM-AQ-2 would reduce Project impacts related to the identified cumulative impacts (air quality construction and operation emissions), the impacts would not be mitigated to less-than-significant levels. Therefore, the proposed Project's impacts related to air quality construction and operation emissions would be cumulatively considerable.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

IMPACT MF-3: THE PROJECT COULD RESULT IN SIGNIFICANT ADVERSE EFFECTS ON HUMAN BEINGS DURING PROJECT CONSTRUCTION AND OPERATION. *(LESS THAN SIGNIFICANT)*

The potential for the proposed Project to result in adverse direct or indirect impacts on human beings was examined for each environmental topic area included in Chapter 4, *Environmental Impact Analysis*. For the proposed Project, environmental categories associated with indirect or direct effects on human beings would include air quality; greenhouse gas emissions; and public services, utilities, and service systems, which are addressed in Section 4.3, *Air Quality*; Section 4.8, *Greenhouse Gas Emissions*; and Section 4.14, *Public Services, Utilities, and Service Systems*. As described in each of these sections, the proposed Project would result in potentially significant impacts in each of these environmental topics during construction and/or operation of the proposed Project; however, the proposed Project would include the implementation of mitigation measures to reduce impacts to less-than-significant levels. As such, after implementation of the identified mitigation measures, the proposed Project's environmental effects on human beings would be *less than significant*.

Mandatory Findings Impact 3
The Project could result in significant adverse effects on human beings during Project construction and operation. (CEQA Checklist Appendix G Threshold XXI.c)
Mitigation Measures
Implementation of Mitigation Measures MM-AQ-1, MM-AQ-2, and MM-GHG-1.1 shall be required.
Impacts Following Mitigation
With implementation of the Project mitigation measures listed above, the proposed Project would not result in significant adverse effects on human beings.

CHAPTER 5. ALTERNATIVES ANALYSIS

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires an environmental impact report (EIR) to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives." (State CEQA Guidelines Section 15126.6(a)). This chapter discusses a range of alternatives to the proposed Castle Mountain Mine Phase II Expansion Project (Project), including alternative locations, alternative designs, and a No Project Alternative. The State CEQA Guidelines provide direction for the discussion of alternatives to a proposed project. This section requires:

- A setting forth of alternatives that ". . . shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR needs to examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project." (Section 15126.6(f))
- Discussion of the "No Project" alternative, and "... If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Section 15126.6(e)(2))
- Discussion and analysis of alternative locations "...that would avoid or substantially lessen any of the significant effects of the project;" only these need to be considered for inclusion in the EIR. (Section 15126.6(f)(2)(A))
- "Prior to approval of the proposed subsequent project, the lead agency shall incorporate all feasible mitigation measures or feasible alternatives appropriate to the project as set forth in the EIR and provide notice in the manner required by Section 15087." (Section 15177(d))

Given the CEQA mandates listed above, this section: (1) describes the range of reasonable alternatives to the proposed Project; (2) examines and evaluates resource issue areas where significant adverse environmental effects have been identified and compares the impacts of the alternatives to those of the proposed Project; and (3) identifies the Environmentally Superior Alternative.

5.2 ALTERNATIVES SELECTION

In accordance with the State CEQA Guidelines, appropriate alternatives for EIR analysis are those that meet most of the basic project objectives and avoid or substantially lessen any of the significant environmental effects of a project. Consequently, this section reviews the objectives that were identified for the proposed Project and identifies the significant environmental impacts of the proposed Project.

5.2.1 Project Objectives

The primary objectives of the proposed Project include the following:

1. **Continue Mining Operations:** Continue gold (and silver) mining and processing activities within the previously approved Castle Mountain Mine Project Area.
2. **Expand Mineral Resource Recovery:** Extract additional economically recoverable mineral resources identified through prior exploration programs within and adjacent to previously approved mining areas.

3. **Modify and Expand Existing Mining Facilities:** Modify, upgrade, and expand existing mining and processing facilities, including ore processing, material handling, heap leach operations, and support infrastructure, to accommodate increased operational capacity.
4. **Increase Operational Capacity Within the Approved Mine Area:** Increase the rate and scale of mining and processing activities within the approved mine area to support efficient resource extraction.
5. **Provide and Upgrade Utility Infrastructure:** Develop, reestablish, or upgrade utility infrastructure—including electrical and water supply systems—necessary to support ongoing mining and processing operations by spreading responsible water extraction across multiple basins to reduce basin-specific effects, including installation of a buried water pipeline from the Nipton, California, area, following approximately 32 miles of existing roads to the mine.
6. **Extend the Operational Life of the Mine:** Extend the duration of mining, processing, and reclamation activities beyond previously approved timelines by 30 years (to approximately 2060) to allow for continued recovery of identified mineral resources.
7. **Minimize Environmental Impacts to the Extent Feasible:** Design and operate the Project to avoid, minimize, and, where feasible, reduce environmental impacts in a manner consistent with applicable land use plans and regulatory requirements. This includes reducing air emissions associated with the current diesel-fueled on-site power generation by coordinating with BLM to reinstall the former 69-kilovolt (kV) overhead powerline from the Walking Box Ranch area to the mine.
8. **Promote Efficient Use of Previously Disturbed Areas:** Prioritize the use and expansion of previously disturbed mining areas to the extent feasible, consistent with land use and resource conservation policies.
9. **Ensure Consistency with Applicable Plans and Regulations:** Design and operate the Project in a manner consistent with applicable federal, state, and local laws, regulations, and land use plans, including the San Bernardino Countywide Plan.
10. **Support Regional Economic Activity:** Provide employment opportunities and contribute to the regional economy through continued mining operations, including the addition of approximately 400 new jobs to the local workforce, thereby offering stable employment for area residents and helping to reduce local unemployment.

5.2.2 Significant Impacts Resulting from the Proposed Project

Alternatives to be considered under CEQA are those that would avoid or substantially lessen one or more of the significant environmental effects identified during evaluation of a project. For the proposed Project, all of the environmental impacts described in Chapter 4, *Environmental Impact Analysis*, were judged to be less than significant or less than significant with the incorporation of identified mitigation, except Air Quality. This environmental impact was found to be significant and unavoidable after implementation of the feasible mitigation measures. A summary of impacts identified for the proposed Project by the environmental resource area is provided in Table 5-1.

Table 5-1. Summary of Impacts Resulting from the Proposed Project

Environmental Resource	Significant and Unavoidable Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impacts
Aesthetics			X	
Agriculture and Forestry Resources				X
Air Quality	X			
Biological Resources		X		
Cultural and Tribal Cultural Resources		X		
Energy			X	
Geology, Soils, and Mineral Resources			X	
Greenhouse Gas Emissions		X		
Hazards and Hazardous Materials			X	
Hydrology and Water Quality			X	
Land Use and Planning				X
Noise and Vibration			X	
Population and Housing			X	
Public Services, Utilities, and Service Systems		X		
Transportation and Recreation			X	
Wildfire				X

As mentioned, the proposed Project would result in significant and unavoidable impacts related to Air Quality. Each identified significant and unavoidable impact, and the reason for the significance determination, is provided in Table 5-2.

Table 5-2. Significant and Unavoidable Impacts Resulting from the Proposed Project

Resource Area	Impact	Reason for Significance Determination
Air Quality	**AQ Impact 2:** Despite the implementation of APMs AQ-1, AQ-2, AQ-3, DF-1, AND DF-6, the Project could result in a cumulatively considerable net increase of criteria pollutants that would exceed applicable MDAQMD thresholds during construction and operation.	**Significant and unavoidable**. As discussed in Section 4.3, *Air Quality*, of this EIR, even with the incorporation of dust control practices, estimated unmitigated construction emissions for nitrogen oxides (NO_X), particulate matter 10 microns or less in diameter (PM_{10}), and particulate matter 2.5 microns or less in diameter ($PM_{2.5}$) would exceed the applicable Mojave Desert Air Quality Management District (MDAQMD) daily significance thresholds. Construction emissions would also exceed the applicable MDAQMD annual distinct thresholds for NO_X, PM_{10}, and $PM_{2.5}$. The proposed Project could violate applicable air quality significance thresholds and could contribute substantially to an existing or projected air quality violation. As such, the proposed Project would have a potentially significant impact with respect to an increase in criteria pollutant emissions during construction. Additionally, as further discussed in Section 4.3 of this EIR, estimated daily unmitigated operational emissions for NO_X, CO, PM_{10}, and $PM_{2.5}$ exceed applicable MDAQMD significance thresholds. Annual unmitigated operational emissions would exceed applicable MDAQMD significance thresholds for VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$ as well. Therefore, based on the above criteria, the proposed Project would have a potentially significant impact related to increased air pollutant emissions during operation.

Resource Area	Impact	Reason for Significance Determination
Air Quality	**AQ-5 Impact:** The Project would contribute to cumulative impacts related to air quality.	**Significant and unavoidable**. Individual projects that generate operational or construction emissions that exceed MDAQMD's recommended thresholds for project-specific impacts could also cause a cumulatively considerable increase in emissions for those pollutants for which the Mojave Desert Air Basin (MDAB) is in nonattainment, and, therefore, would be considered to have a significant, adverse air quality impact. As discussed above in Impact AQ-2, the proposed Project would exceed MDAQMD's recommended daily and annual thresholds for NO_X and PM_{10}, which are pollutants in nonattainment in the region of the Project Area. As previously noted, despite implementation of Mitigation Measure MM-AQ-2.1, the proposed Project construction-source and operational-source air pollutant emissions would still exceed applicable MDAQMD regional thresholds. As such, Project construction and operational-source emissions are considered significant and unavoidable and would be cumulatively considerable.

5.3 ALTERNATIVES IMPACTS ANALYSIS PROCESS

In defining the feasibility of alternatives, State CEQA Guidelines Section 15126.6(f)(1) states:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent).

If an alternative was found to be infeasible, as defined above, then it was dropped from further consideration in this analysis.

In addition, State CEQA Guidelines Section 15126.6 states that alternatives should ". . . attain most of the basic objectives of the project . . ." As further explained by the California Supreme Court:

> [A]n EIR should not exclude an alternative from detailed consideration merely because it "would impede to some degree the attainment of the project objectives." But an EIR need not study in detail an alternative that is infeasible or that the lead agency has reasonably determined cannot achieve the project's underlying fundamental purpose . . .
>
> Although a lead agency may not give a project's purpose an artificially narrow definition, a lead agency may structure its EIR alternative analysis around a reasonable definition of underlying purpose and need not study alternatives that cannot achieve that basic goal. (In re *Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings*, 43 Cal.4th 1143, 1165–1166 [2008])

The alternatives analysis began with screening and evaluating a list of preliminary alternatives based on sensitive environmental resources and public comments to determine which alternatives would be selected for further analysis in the EIR.

Each alternative was initially assessed as to whether it met the requirements of a viable alternative under CEQA by considering whether it 1) would be feasible, 2) would avoid or substantially lessen any of the significant effects of the proposed Project, and 3) could feasibly attain most of the basic objectives of the proposed Project. The alternatives that met these three requirements were carried forward for a more detailed review and are discussed in Section 5.5, *Alternatives Impacts Analysis*.

5.4 ALTERNATIVES CONSIDERED BUT REJECTED

State CEQA Guidelines Section 15126.6(c) requires that an EIR disclose potential alternatives that were considered and eliminated, along with a brief explanation of the reason for elimination. Factors used to eliminate alternatives from detailed consideration include: (1) failure to meet most of the basic project objectives, (2) infeasibility, and/or (3) inability to avoid significant environmental impacts. The alternatives discussed in the following sections were considered but eliminated from further analysis.

5.4.1 100% Diesel Generator Power

Under this alternative, the mine would be powered exclusively by diesel generators, eliminating the need to construct and operate the liquified natural gas (LNG) micro-turbines and a new powerline. Although the initial capital cost of a diesel generation system is approximately 20% lower than that of an LNG system, these savings would be offset within the first year of operation due to substantially higher diesel fuel costs. On an ongoing basis, diesel fuel costs are estimated to be two and a half times or more than those associated with LNG. The resulting increase in operating costs is estimated to range from approximately $9 million to $14 million per year, which over the life of the proposed Project would likely exceed $200 million (CMV 2026d).

In addition to higher operating costs, diesel generation systems require more frequent major maintenance. Diesel generators typically require significant overhauls every 4.5 to 5 years, whereas LNG generators generally require major overhauls approximately every 10 years. This shorter maintenance cycle would increase long-term operational costs and reduce overall system efficiency.

Technical feasibility also presents challenges. Emissions from diesel generation would likely exceed applicable regulatory thresholds, which would require the use of Best Available Control Technology (BACT). For engines of the size needed to support the proposed Project's power demand, BACT would require Tier 4 Final-rated engines. Engines meeting these specifications are not always readily available at the required scale, creating uncertainty regarding procurement and implementation (CMV 2026d).

Additionally, based on an air emissions inventory conducted by Ramboll (2026), this alternative would result in increased annual emissions of nitrogen oxides (NO_X), carbon monoxide (CO), particulate matter (PM), particulate matter 10 microns or less in diameter (PM_{10}), particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and carbon dioxide equivalent (CO_2e) compared to the 10 megawatts (MW) of LNG micro-turbine power under the proposed Project.

Based on these economic and technical constraints, the 100% diesel-generation alternative was determined to be infeasible and was not carried forward for further detailed evaluation.

5.4.2 Diesel for Supplemental Power Generation

Under this alternative, approximately 10 MW of diesel generators would be installed to supplement operational power needs in conjunction with construction of the proposed 69-kV powerline to the mine site. On-site power generation from LNG or solar would not be developed. The intent of this alternative would be to reduce reliance on LNG availability and decrease the required size of on-site LNG storage; however, this configuration presents economic and technical limitations. As discussed in the 100% Diesel-Generator Power alternative, diesel generation results in substantially higher operating costs than LNG-based generation due to significantly higher fuel costs, with diesel estimated to cost two and a half times or more than LNG on a per-energy basis and increasing annual operating costs by approximately $9 million to $14 million, which over the life of the proposed Project would likely exceed $200 million

(CMV 2026d). In addition, diesel generators require major overhauls approximately every 4.5 to five years compared to approximately every 10 years for LNG generators, increasing long-term maintenance costs and operational downtime.

Additionally, based on an air emissions inventory conducted by Ramboll (2026), this alternative would result in increased annual emissions of NO_X, CO, PM, PM_{10}, $PM_{2.5}$, CO_2, CH_4, N_2O, and CO_2e compared to the 10 MW of LNG microturbine power under the proposed Project.

Because this alternative would introduce higher operating costs and similar technical constraints associated with 100% diesel-powered generation, it was determined to be impractical and was not carried forward for further detailed evaluation.

5.4.3 100% Solar Power

Under this alternative, all mine power would be supplied by on-site solar generation with battery energy storage (BESS), eliminating the need for LNG micro-turbines and the proposed new overhead powerline from the mine site to Walking Box Ranch. Although this alternative may reduce resource impacts (visual, biological, and air quality) that are generally associated with the construction and operation of linear transmission infrastructure, technical evaluations indicate it is not feasible given land availability and performance constraints. The maximum solar development achievable within already disturbed mine lands would consist of approximately 53.5 MWac (alternating current) of photovoltaic generation paired with a 31.5-MW, 252-megawatt-hour (MWh) lithium-ion BESS, which together could meet only approximately 77.6% of total energy demand and 73.5% of operating hours for the mine's constant 15-MW load under typical conditions (CMV 2021). As a result, the system would be unable to support continuous, year-round mining operations without additional backup generation.

Meeting the full mine load exclusively with solar power would require an estimated 500 to 1,000 acres of developable land, which exceeds the undeveloped land available within the Mine Plan of Operations (MPO) boundary that is not already proposed for development. Expansion into adjacent National Monument lands is not permitted under National Park Service authority, and importing solar power from outside the Avi Kwa Ame National Monument would require new transmission infrastructure, resulting in impacts similar to those associated with the proposed 69-kV overhead powerline.

Further constraining the viability of this alternative is the York Fire, a 93,078-acre wildfire that ignited on July 28, 2023, within the New York Mountains of the Mojave National Preserve and Castle Mountains National Monument in eastern San Bernardino County, California, and extended 9,127 acres into Clark County, Nevada (California Department of Forestry and Fire Protection [CAL FIRE]/U.S. Forest Service [USFS] York Fire incident report and BLM 2023c). The Burned Area Emergency Response (BAER) Plan for the York Fire (BLM 2023c) established short- and long-term rehabilitation goals, including implementation of chemical treatments to control invasive species, closure of the area to public access (through signage, barricades, and law enforcement patrols) for resource protection, and continued post-fire monitoring to promote the successful recovery of native vegetation over time. The implementation of this plan would restrict new surface disturbance and infrastructure development within the burned area during the recovery period, thereby limiting the availability of suitable lands where additional solar arrays or associated facilities could be constructed to support this alternative (BLM 2023c).

In addition, this alternative would involve substantial capital, operations, and relocation costs associated with battery overbuild, augmentation, and the need to relocate solar facilities as mining activities expand, while introducing new ground disturbance and increasing annual air emissions (CMV 2021). Given these land constraints, performance limitations, high costs, and inability to reliably meet operational requirements, the 100% Solar Power alternative was dismissed from further consideration (CMV 2021).

5.4.4 Solar for Intermittent Power Generation

Under this alternative, solar generation would be used as an intermittent energy source, eliminating the need for the currently proposed overhead transmission line from the mine site to Walking Box Ranch, while retaining on-site LNG micro-turbines to meet the mine's constant 15-MW load. The alternative was evaluated to reduce visual and biological impacts associated with linear transmission infrastructure while maintaining operational reliability. The solar component would be comparable in scale to the 100% Solar Power Alternative; however, this option would also include power supplied by a natural gas generating facility consisting of five Jenbacher J624 reciprocating engines configured with N+1 redundancy and supported by a new natural gas pipeline connection to the mine site (CMV 2021). Although technically capable of meeting load requirements, this configuration introduces substantial additional infrastructure, including solar facilities, a gas-fired power plant, and a new fuel supply pipeline.

This alternative is constrained by the limited availability of developable land within the MPO boundary to support large-scale solar generation and would require substantial ground disturbance in previously undisturbed areas or areas not currently proposed for development (CMV 2021). Furthermore, the combination of intermittent solar and gas generation also increases capital, operations, and maintenance costs relative to a single-technology approach, including costs associated with solar module relocation as mining expands, dedicated staffing for engine maintenance, emissions control equipment, and fuel supply infrastructure. Although the alternative would reduce reliance on a transmission line, emissions could increase relative to a 100% solar option due to continuous operation of natural gas engines while providing limited environmental benefit compared to a strictly LNG-only alternative. Given its impractical land requirements, increased disturbance footprint, jurisdictional restrictions within and adjacent to the York Fire burn perimeter (as referenced in the 100% Solar Power Alternative), higher costs, and considerable increased surface disturbance when compared to the proposed Project, this alternative does not pass the reasonable person test and was dismissed from further consideration (CMV 2021).

5.4.5 100% Liquified Natural Gas Microturbines

Under this alternative, all mine power would be generated by LNG micro-turbines, eliminating the need for a powerline and thereby minimizing visual and biological impacts along the ROW; however, LNG capacity is not sufficient to support this level of demand, making the alternative technologically unfeasible. Additionally, based on an air emissions inventory conducted by Ramboll (2026), this alternative would result in nearly double the annual emissions of $NO_{X,}$, sulfur oxides (SO_X), CO, PM, PM_{10}, $PM_{2.5}$, CO_2, CH_4, N_2O, and CO_2e compared to the 10 MW of LNG microturbine power under the proposed Project.

5.4.6 Nuclear Micro-Reactor

Under this alternative, a nuclear micro-reactor would supply all mine power, eliminating the need for the proposed LNG micro-turbines. This option was considered but determined to be infeasible due to technological readiness, regulatory requirements, and economic constraints. Small modular reactors (SMRs) and micro-reactors are not yet commercially available for near-term deployment and remain in various stages of design, testing, licensing, and demonstration. Many systems are considered first-of-a-kind technologies, and widespread commercial operation is not anticipated until approximately 2027 to 2030 or later (CMV 2021).

In addition, deployment of a nuclear power system would require a complex and lengthy licensing and permitting process through the U.S. Nuclear Regulatory Commission, which can take many years before construction and operation could occur. Nuclear generation would also require long-term management

and on-site storage of spent nuclear fuel, further increasing operational complexity. Capital costs for SMRs and micro-reactors are highly uncertain and are expected to be substantially higher than conventional power generation technologies. First-of-a-kind SMR projects have been estimated in the multi-billion-dollar range, and micro-reactors, although smaller, are typically more expensive on a per-megawatt basis. Given the lack of commercial availability, extended regulatory timelines, significant capital costs, and operational complexities associated with nuclear fuel handling and waste management, this alternative was determined to be neither technically nor economically feasible and was dismissed from further consideration (CMV 2021).

5.4.7 Reduce Mining Throughput Rates by 5% to 10%

Under this alternative, mining throughput rates would be reduced by 5% to 10%, decreasing annual water and utility needs and potentially extending the operational life of the mine and reclamation periods. The underground water pipeline and 69-kV overhead powerline would still be constructed for the proposed Project. This alternative would result in lower annual resource demands, such as reduced water consumption, fewer transportation trips, and lower workforce requirements per year; however, it would extend the total number of years during which these services are needed. This alternative was found to be unreasonable due to economic feasibility and reasonableness, specifically reducing the internal rate of return and net present value below industry standards (CMV 2025b). This alternative would also extend operational years, which could increase costs and prolong impacts before reclamation can begin, without providing sufficient improvements to resource protection.

5.4.8 Reduce Mining Throughput Rates Enough to Avoid New Off-Site Utilities

Under this alternative, mining throughput would be reduced to a level intended to eliminate the need for new off-site utilities, including the underground water pipeline and 69-kV overhead powerline, thereby avoiding associated ROW disturbance and related visual and biological impacts. To evaluate feasibility, a representative reduced mining rate was analyzed based on a 30% reduction from the proposed 2022 Plan mining rate of approximately 52,000 tons per day to approximately 35,000 tons per day. Even at this substantially reduced rate, the proposed Project would still require extended operations to mine the same total ore volume, resulting in an estimated mine life increase of approximately 7 years. Financial analysis indicates that this reduced throughput would lower the Project Internal Rate of Return (IRR) to approximately 13.8%, below the minimum industry financing threshold of 17%, and reduce Net Present Value (NPV) by more than 4%, materially affecting the viability of the proposed Project as an investable operation (CMV 2025b).

Further reductions in mining rate sufficient to fully eliminate off-site utilities, requiring near exclusive reliance on on-site power generation and pit dewatering for water supply, were not advanced for detailed analysis because such reductions would further degrade project economics beyond levels already demonstrated to be infeasible. Although lower annual production could reduce short-term demands for power, water, and emissions, and eliminate the need for the utilities, extending the mine life would likely increase long-term water losses through evaporation and dust control, as well as cumulative energy use and emissions over the life of the proposed Project. In addition, designing a mine plan around persistently low throughput would reduce operational flexibility and increase the likelihood of future plan amendments as economic conditions change. Given the demonstrated economic infeasibility at reduced mining rates, the extended mine life and associated long-term environmental tradeoffs, and the uncertainty that further reductions would reasonably sustain a viable mining operation, this alternative does not meet the standard of a reasonable or feasible alternative and was dismissed from further consideration.

5.4.9 Change the Order in Which the Pits Are Mined

Under this alternative, the order in which the pits are mined would be changed to avoid the surface expression of a pit lake in the south pit, which would be backfilled to address water resource concerns; however, it was determined that this alternative is not within BLM's or the County's authority to direct the mining order, and the concern for a pit lake is addressed in the alternatives that are analyzed in detail. As such, this alternative is not considered further due to lack of agency authority.

5.4.10 Underground Mining

Under this alternative, mining would be conducted using underground methods rather than the proposed open-pit mining approach, with the intent of reducing surface disturbance. Although underground mining can reduce land surface impacts in some settings, it is only economically feasible where ore grades are sufficiently high to offset the substantially greater development and operational costs. The 2022 Plan ore resource and reserve grades for the proposed Project range from approximately 0.52 to 0.62 grams per tonne of gold, whereas underground mining typically requires average gold grades of approximately four to 10 grams per tonne (CMV 2025d). Given the substantial disparity between known project grades and those required for economically viable underground mining, this alternative is not economically feasible and was dismissed from further consideration.

5.4.11 Joint Trench for Underground Water Pipeline and Electrical Transmission Powerline

Under this alternative, the 69-kV electrical transmission line would be installed underground within the same trench as the Ivanpah water pipeline to reduce overall surface disturbance and visual impacts associated with the overhead powerline. Underground transmission lines generate significant heat and require heavily insulated, sealed cables and specialized accessories, which substantially increases construction costs and presents technical challenges related to heat dissipation and potential voltage loss over the approximately 16.5-mile alignment (CMV 2025d). Additionally, co-locating the overhead line and pipeline within a shared trench would require a substantially wider trench to maintain adequate separation between the utilities for safety and thermal management, resulting in greater ground disturbance than the alternatives analyzed in detail.

These engineering requirements, combined with the need for specialized materials and installation methods, would make the joint trench configuration substantially more expensive than the proposed overhead transmission line. Given the substantial economic cost and technical constraints associated with underground installation of the transmission line within the pipeline trench, this alternative was considered infeasible and was dismissed from further consideration.

5.4.12 Burying the Electrical Transmission Powerline or the Water Pipeline within the Existing Road Footprint

Under this alternative, the overhead electric line or pipeline would be buried underground within the footprint of an existing road. Although this approach could reduce aboveground infrastructure and potential impacts to visual resources, trenching within an active roadway would pose substantial public safety risks during construction, including open trenches, lane closures, and an increased potential for vehicle and pedestrian accidents.

Trenching within the roadway would require substantially greater ground disturbance than the proposed Project and alternatives analyzed in detail and could destabilize the roadway, potentially necessitating

reconstruction following installation. Construction would likely require partial or full roadway closures to maintain safe working conditions, which could disrupt access and circulation for both mine operations and members of the public who use the roadway. In addition, future maintenance or repair activities would require repeated excavation within the roadway, resulting in recurring disturbance, traffic disruptions, and associated safety concerns. Maintaining safe and reliable access during construction could also require development or designation of an alternate access route, introducing additional disturbance, cost, and environmental impacts that would not occur under the proposed Project.

Because installation of utilities within an active roadway would introduce substantial technical challenges, increased construction and long-term operational costs, and additional safety and access concerns, this alternative was determined to be technically and economically infeasible and would not meet the criteria for a reasonable alternative. Therefore, it was dismissed from further consideration.

5.4.13 Buried 69-kV Electrical Transmission Powerline

Under this alternative, the proposed 69-kV electrical transmission line would be buried underground instead of constructed as a wood pole-supported overhead line to reduce visual impacts. A buried transmission line was previously evaluated and dismissed as technically and economically infeasible in the 1991 Bureau of Land Management Environmental Assessment (BLM 1991). A 2025 cost and technical assessment estimated construction and material costs of approximately $127 million for a buried line compared to approximately $9 million for the proposed overhead line, representing an approximately 14-fold increase in cost (CMV 2025b).

In addition, an underground transmission powerline presents several technical challenges. Buried high-voltage lines generate significant heat and require heavily insulated and sealed cables, specialized conduit systems, and additional infrastructure to manage heat dissipation and maintain system reliability. Over the approximately 16.5-mile alignment, underground installation could also result in increased electrical resistance and potential voltage loss, requiring additional engineering controls and equipment.

Given the substantial increase in construction costs and the technical constraints associated with underground transmission over this distance, this alternative was determined to be economically and technically infeasible and was dismissed from further consideration.

5.4.14 Bury Electrical Transmission Powerline Underground at Walking Box Ranch

Under this alternative, the overhead powerline would be eliminated to reduce visual and biological impacts within the Walking Box Ranch; however, the alternative was dismissed from further analysis because underground installation would introduce substantial technical and economic constraints compared to the proposed Project and alternatives analyzed in detail. Similar to the three previously dismissed alternatives, installing a 69-kV transmission line underground would require specialized cable systems and more complex installation methods than an overhead configuration. These requirements would substantially increase construction costs and engineering complexity over the length of the alignment. Underground installation would also require trenching and additional infrastructure to dissipate heat and maintain safe operating conditions, further increasing construction effort and long-term operational costs. In addition, accessing underground transmission infrastructure for inspection, maintenance, or repairs would require excavation and could extend outage durations compared to an overhead line, reducing operational flexibility and reliability. Although this alternative would reduce the visibility of a new overhead line within the ranch, visual effects would still occur due to the presence of existing powerlines on the property and the visibility of new transmission infrastructure outside the Walking Box Ranch. Given the substantial increase in construction cost, engineering complexity, and

long-term operational constraints, this alternative was determined to be technically and economically infeasible and was dismissed from further consideration.

5.4.15 Co-Location of Overhead Electrical Transmission Powerline South of Walking Box Ranch from Substation

This alternative would co-locate the proposed overhead electrical line on existing powerline structures south of the Walking Box Ranch substation to reduce new infrastructure and potential visual disturbance. Engineering evaluations indicate, however, that the existing facilities were not designed to accommodate the proposed Project's required 69-kV transmission system or the approximately 15-MW continuous load. To meet electrical performance and reliability requirements over the approximately 16.5 mile distance from the substation, a double-circuit configuration would be required. Co-location would therefore necessitate substantial modifications to the existing line, including structural upgrades, additional conductors and hardware, and widespread pole replacements to meet loading, clearance, and safety standards, resulting in increased construction complexity and cost . In addition, the proposed Project's location near the California–Nevada state line would require coordination between NV Energy and Southern California Edison, further increasing technical and regulatory complexity and uncertainty in utility upgrade scopes and cost estimates.

Construction and long-term maintenance on an active, energized powerline structures would elevate worker safety risks, reduce operational flexibility, and increase the potential for service disruptions. Given the proposed Project's remote location and distance from the nearest substation, outage response times are expected to be longer than system averages, making system reliability a critical concern. Given the technical challenges, increased safety and reliability risks, and the higher and uncertain costs, this alternative was dismissed from further consideration.

5.5 ALTERNATIVES IMPACTS ANALYSIS

Criteria used to develop preliminary Project alternatives included: (1) whether the alternative would avoid or substantially lessen significant impacts to air quality, biological resources, cultural and tribal cultural resources, geology, soils and mineral resources, and GHG emissions; (2) whether the alternative would generally meet the Project objectives and underlying fundamental purpose; and (3) whether implementation of the alternative would be feasible. Specific preliminary Project alternatives are described in further detail below.

5.5.1 Proposed Project

The proposed Project involves the expansion of mining operations at CMM through amendments to the existing Mine Plan of Operations and the approval of new ROWs for supporting infrastructure. Implementation of the proposed Project would expand open-pit mining operations, increase ore-processing capacity, and extend the operational life of the mine to approximately the year 2060. The proposed Project would result in approximately 1,814 acres of new disturbance associated with the expansion of mine facilities and utility infrastructure. When combined with previously authorized disturbance areas, the overall disturbance would total approximately 3,288 acres of the 4,285-acre Project Area. The proposed Project would substantially increase the quantity and rate of ore and overburden mined over the life of the proposed Project.

The proposed Project would also include several infrastructure improvements necessary to support expanded mining operations. These improvements include construction of a new underground water

pipeline extending approximately 31.5 miles to convey groundwater from the Ivanpah Valley Groundwater Basin to the mine, installation of additional groundwater wells to support increased water demand, and construction of a new 69-kV overhead powerline to supply electricity to CMM. The proposed Project would also transition from diesel generators to LNG microturbines for on-site power generation, improving efficiency and reducing reliance on diesel fuel. While these improvements would enhance operational reliability and support increased mining throughput, the proposed Project would also result in increased land disturbance, expanded mining activity, and associated environmental effects during both construction and operations.

As discussed in Chapter 4, *Environmental Impact Analysis*, most environmental effects associated with the proposed Project would be less than significant or less than significant with mitigation incorporated. However, the proposed Project would result in significant and unavoidable impacts related to air quality. Construction and operational activities associated with expanded mining operations would generate emissions of criteria pollutants that would exceed Mojave Desert Air Quality Management District (MDAQMD) significance thresholds even after implementation of feasible mitigation measures. Accordingly, the alternatives evaluated in this chapter were developed to determine whether feasible alternatives could avoid or substantially lessen these significant impacts while still meeting most of the Project objectives.

5.5.2 Alternative 1: No Project Alternative

Section 15126.6(e) of the State CEQA Guidelines requires analysis of the No Project Alternative. In accordance with the State CEQA Guidelines, the No Project Alternative for a development project on an identifiable property consists of the circumstances under which the project does not proceed as provided by Section 15126.6(e)(3)(B). Section 15126.6(e)(3)(B) provides that, "In certain instances, the no project alternative means the existing environmental setting is maintained." As stated in Section 15126.6(e)(2), "The 'no project' analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

Under Alternative 1 (No Project Alternative), the BLM would not issue any ROW authorizations or authorize the MPO; however, CMV would continue mining only within the areas and to the extent currently authorized under existing permits and approvals (Appendix G) associated with the 1998 EIS/ROD (Figure 5-1) (BLM 1998a). Additionally, under the No Project Alternative, the proposed Project would be denied, and as a result, the objectives and goals of the Project Applicant, including expansion of operations, increased resource development, and associated economic benefits, would not be achieved.

Mining operations would proceed under the currently authorized BLM MPO CACA-031137 (BLM 2020b) 013 (13 (County of San Bernardino 1997). Mining would be limited to federal land or private land with vested mineral rights, up to 1,298 acres and 80 million tons per year (tpy), using open-pit mining and heap leach processing methods (Appendix J). Current operations remain subject to federal and State regulation, including compliance with BLM's financial guarantee requirements under 43 CFR 3809.5 and the reclamation and financial assurance requirements under the California SMARA of 1975, administered by the County.

If the Project Applicant wishes to revise the currently authorized MPO to include activities beyond those already permitted or outside the existing boundaries, submission of a revised MPO to both BLM and the County for review and approval would be required.

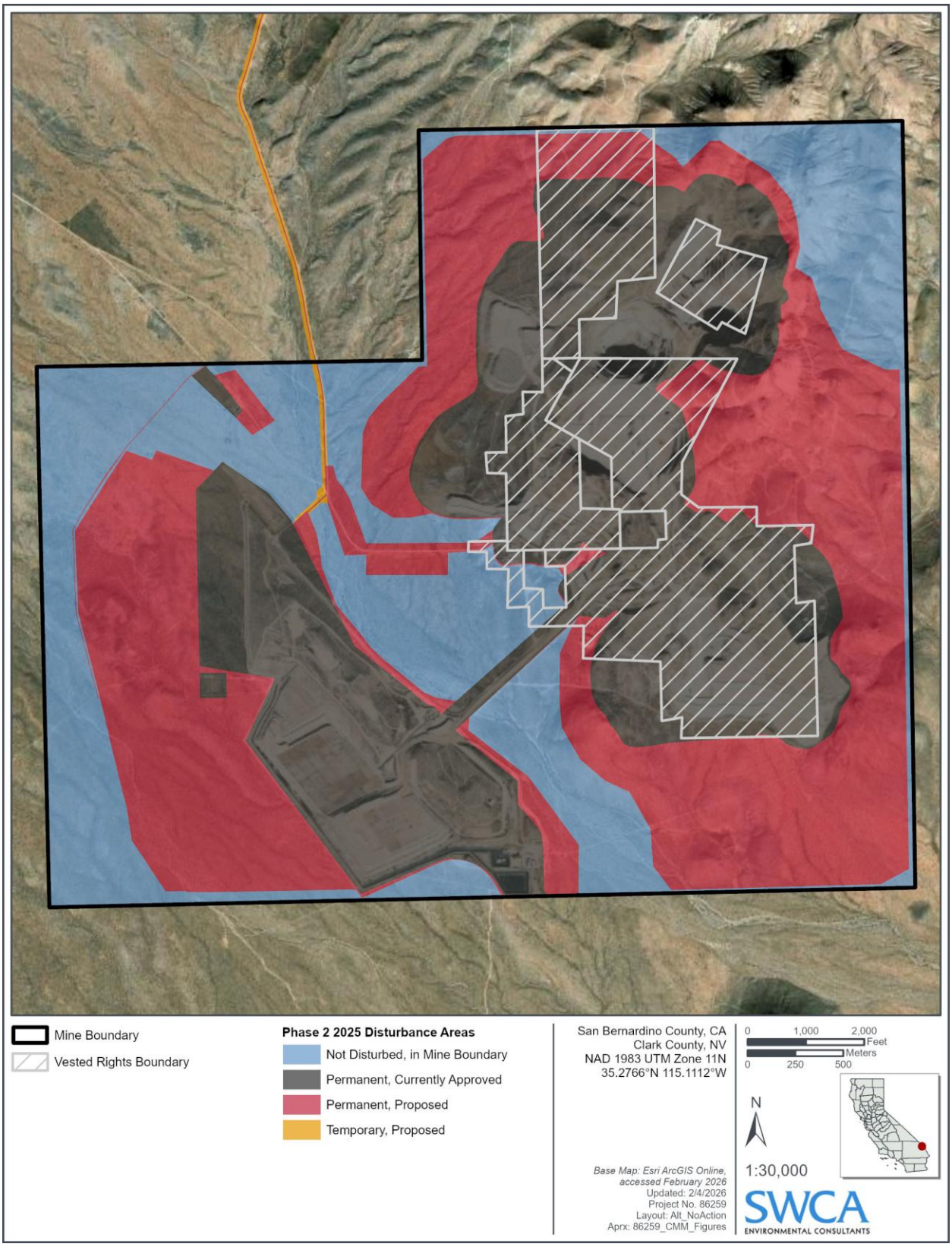


Figure 5-1. Alternative 1: No Project Alternative

5.5.2.1 Relationship to Project Objectives

Alternative 1 (No Project Alternative) would not achieve any of the 10 Project objectives. Table 5-3 presents this alternative's ability to attain the Project objectives outlined in Section 5.2.1, *Project Objectives*, and in Chapter 2, *Project Description*.

Table 5-3. Attainment of Objectives for Alternative 1: No Project Alternative

Objective	Does the Alternative Attain the Objective?
Continue Mining Operations: Continue gold (and silver) mining and processing activities within the previously approved Castle Mountain Mine Project Area.	**No.** Under the No Project Alternative, CMM would not continue gold and silver mining and processing activities following cessation of operations and completion of interim reclamation within the previously approved CMM Project Area.
Expand Mineral Resource Recovery: Extract additional economically recoverable mineral resources identified through prior exploration programs within and adjacent to previously approved mining areas.	**No.** Under the No Project Alternative, CMM would not extract additional mineral resources within and adjacent to the previously approved CMM Project Area.
Modify and Expand Existing Mining Facilities: Modify, upgrade, and expand existing mining and processing facilities, including ore processing, material handling, heap leach operations, and support infrastructure, to accommodate increased operational capacity.	**No.** Under the No Project Alternative, no modifications, upgrades, or expansion of existing mining and processing facilities would take place.
Increase Operational Capacity Within the Approved Mine Area: Increase the rate and scale of mining and processing activities within the approved mine area to support efficient resource extraction.	**No.** Under the No Project Alternative, the scale and rate of mining and processing activities would not increase.
Provide and Upgrade Utility Infrastructure: Develop, reestablish, or upgrade utility infrastructure—including electrical and water supply systems—necessary to support ongoing mining and processing operations by spreading responsible water extraction across multiple basins to reduce basin-specific effects, including installation of a buried water pipeline from the Nipton, California, area, following approximately 32 miles of existing roads to the mine.	**No.** Under the No Project Alternative, no changes to the existing utility infrastructure would occur.
Extend the Operational Life of the Mine: Extend the duration of mining, processing, and reclamation activities beyond previously approved timelines by 30 years (to approximately 2060) to allow for continued recovery of identified mineral resources.	**No.** Under the No Project Alternative, the mine would be required to cease activities pursuant to the existing approvals. Under currently authorized operations, mining, processing, and reclamation activities at CMM are projected to conclude by 2035.
Minimize Environmental Impacts to the Extent Feasible: Design and operate the Project to avoid, minimize, and, where feasible, reduce environmental impacts in a manner consistent with applicable land use plans and regulatory requirements. This includes reducing air emissions associated with the current diesel-fueled on-site power generation by coordinating with BLM to reinstall the former 69-kilovolt (kV) overhead powerline from the Walking Box Ranch area to the mine.	**No.** Under the No Project Alternative, the proposed Project would not be implemented; therefore, there would be no project designed and operated to avoid environmental impacts. CMM would not reinstall the former 69-kV overhead powerline, which would result in reduced air emissions associated with the current diesel-fueled on-site power generation.
Promote Efficient Use of Previously Disturbed Areas: Prioritize the use and expansion of previously disturbed mining areas to the extent feasible, consistent with land use and resource conservation policies.	**No.** Under the No Project Alternative, the previously disturbed mining areas at CMM would not be expanded.
Ensure Consistency with Applicable Plans and Regulations: Design and operate the Project in a manner consistent with applicable federal, state, and local laws, regulations, and land use plans, including the San Bernardino Countywide Plan.	**No.** Under the No Project Alternative, the proposed Project would not be implemented; as such, no new mining design or operation approvals consistent with applicable plans or regulations would be required.

Objective	Does the Alternative Attain the Objective?
Support Regional Economic Activity: Provide employment opportunities and contribute to the regional economy through continued mining operations, including the addition of approximately 400 new jobs to the local workforce, thereby offering stable employment for area residents and helping to reduce local unemployment.	**No.** Under the No Project Alternative, 400 new jobs would not be added to the local workforce, which would provide stable employment for area residents and help reduce local unemployment. Employment and economic benefits would be limited to the current, existing rates.

5.5.2.2 Comparison of Alternative 1 with Significant Effects of the Project

Alternative 1 (No Project Alternative) represents the environmental conditions that would reasonably be expected to occur if the proposed Project were not approved, consistent with State CEQA Guidelines Section 15126.6(e). Under this alternative, the proposed Project would not be implemented, and no new ROW grants, utility infrastructure, or expansion-related facilities would be authorized. Mining activities would continue only to the extent allowed under existing approvals, including the currently authorized MPO and CUP.

Compared to the proposed Project, the No Project Alternative would avoid all construction activities associated with the Phase II expansion, including large-scale earthmoving, infrastructure installation, and development of new power and water supply facilities. As a result, the No Project Alternative would eliminate construction-related emissions of criteria air pollutants and GHGs associated with expansion activities. Operational emissions would also be reduced relative to the proposed Project because mining would be limited to currently permitted areas and production levels.

The No Project Alternative would avoid the proposed Project's only significant and unavoidable impact (air quality), as well as any potential impacts that may arise with additional construction and expanded operations. Criteria pollutant emissions under the No Project Alternative would remain at or below existing baseline levels, and this alternative would not contribute to a cumulatively considerable increase in regional air pollutant concentrations.

With respect to other environmental resource areas, the No Project Alternative would generally result in similar or reduced impacts compared to the proposed Project. Biological resources, cultural and tribal cultural resources, hydrology and water quality, noise, transportation, wildfire risk, and land use consistency would remain at existing conditions or continue to be regulated under existing permits and mitigation requirements. No new or expanded impacts would occur beyond those previously evaluated and approved.

Overall, the No Project Alternative would result in fewer environmental impacts than the proposed Project and would avoid the proposed Project's significant and unavoidable air quality impact. However, it would also forego the environmental, operational, and economic benefits associated with the proposed Project.

5.5.2.3 Feasibility and Ability to Attain Project Objectives

Alternative 1 (No Project Alternative) is inherently feasible, as it would involve continuation of existing conditions and currently authorized mining operations without implementation of the proposed Project. However, State CEQA Guidelines Section 15126.6(e) clarifies that while the No Project Alternative serves as an environmental baseline and comparison point, it does not need to meet Project objectives.

Under the No Project Alternative, the majority of the proposed Project's basic objectives would not be achieved. Specifically, this alternative would not maximize the recovery of economically viable mineral resources within the approved Project boundary, as mining would remain constrained by existing

approvals and infrastructure limitations. It would also fail to establish a reliable and efficient long-term power supply system or expand groundwater infrastructure necessary to support Phase II mining operations and enhance operational resiliency.

In addition, the No Project Alternative would not fully meet objectives related to long-term employment and economic benefits. While some employment would continue under existing operations, the approximately 400 new jobs anticipated under the proposed Project would not be realized, and associated regional economic benefits would be foregone.

Although the No Project Alternative would avoid the proposed Project's significant air quality impacts and is environmentally superior from a purely impact-avoidance standpoint, it does not attain most of the proposed Project's basic objectives. Accordingly, while it is identified as the Environmentally Superior Alternative under CEQA, it does not represent a feasible alternative that would meet the proposed Project's underlying purpose.

5.5.3 Alternative 2: Backfilling to Avoid Surface Expression of South Pit Lake

Alternative 2 (Backfilling to Avoid Surface Expression of South Pit Lake) evaluates partial backfilling of the South Extension Pit following completion of ore extraction, with the objective of reducing or eliminating the formation of a residual surface pit lake, as depicted in Figure 5-2 as the Backfill Harvest Area. Under the 2025 Plan, substantial backfilling is already proposed for the northern pits (Jumbo South Lesley Anne [JSLA], Jumbo, and Oro Belle). Because the South Extension Pit would be the final pit mined, concurrent backfilling during active mining is not technically feasible, as ore extraction and waste placement cannot occur safely or efficiently within the same pit at the same time (Appendix J). Backfilling of the South Extension Pit would therefore occur as a discrete activity after mining concludes.

Under this alternative, backfilling would commence at approximately Operation Year 18, when mining in the South Extension Pit is completed. The pit floor would be raised from an approximate pre-backfill elevation of 3,120 feet above mean sea level (amsl) to approximately 3,480 feet amsl. Achieving this elevation would require the placement of approximately 17 million tons of non-ore waste rock. The backfill material would consist of waste rock previously generated during mining and temporarily stored or placed in the JSLA pit area, which is already designated for backfilling under the approved mine plan. No off-site material or new waste sources would be required.

Backfilling would be accomplished using existing mine equipment, primarily 250-ton haul trucks, and would extend the overall mining schedule by approximately two years. The extended schedule reflects the time required to excavate, haul, and place the additional waste rock while maintaining safe operating conditions. From a technical feasibility standpoint, the alternative relies on standard, proven mining and reclamation practices that are already employed elsewhere at the mine site. No new technologies, equipment types, or design standards would be required, and no changes to pit geometry beyond the proposed backfill elevation would occur.

Hydrologic modeling indicates that partially backfilling the South Extension Pit to an elevation of approximately 3,480 feet amsl would prevent the formation of a measurably significant pit lake, substantially reducing long-term evaporative water loss compared to the no-backfill condition. Under baseline conditions, a non-backfilled pit is anticipated to form a pit lake that would gradually equilibrate with regional groundwater levels over approximately 100 years. Partial backfilling would reduce the available pit volume and limit ephemeral water feature exposure, resulting in estimated evaporative losses of approximately zero to100 acre-feet per year (AFY), compared to approximately 672 AFY without backfilling (Appendix J).

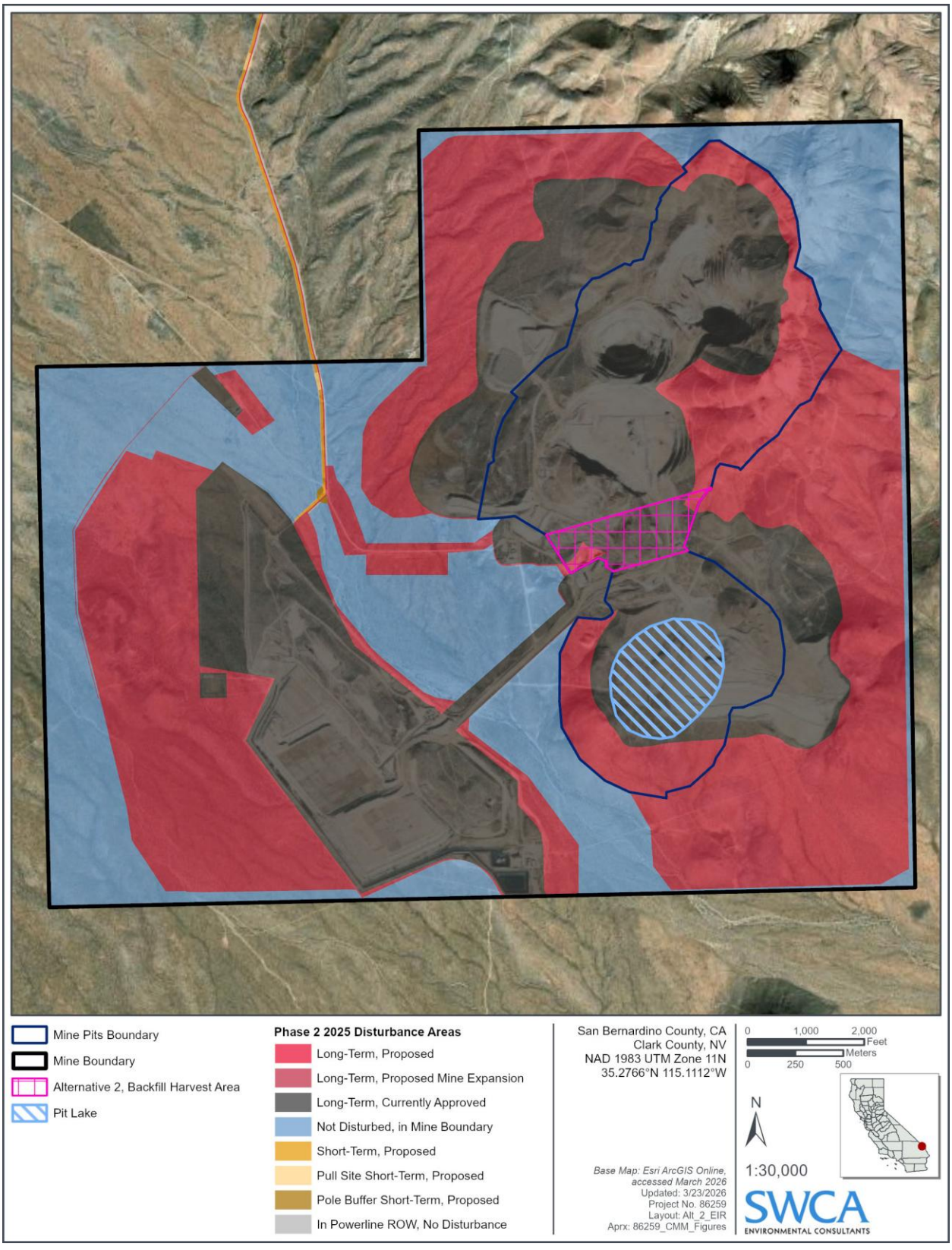


Figure 5-2. Alternative 2: Backfilling to Avoid Surface Expression of South Pit Lake

This alternative would provide long-term water resource benefits by reducing evaporative losses associated with pit lake formation. A critical finding of the hydrologic simulation is that the stabilized lake level of the natural formation of the pit lake that would occur without backfilling will remain below the regional groundwater table, which ensures the pit lake acts as a permanent hydraulic sink, preventing the migration of lake water (containing trace metals such as arsenic, lead, and copper) into the surrounding regional aquifer.

Implementation of this alternative would result in increased haulage activity, fuel consumption, and associated air emissions due to the additional material movement and extended operating period. Energy use would increase proportionally with the additional two years of operations; however, no new power infrastructure or energy sources would be required.

From an economic feasibility perspective, partial backfilling of the South Extension Pit would increase total mining costs by approximately $20 million, primarily due to additional haulage, equipment operation, labor, and the extended schedule. Despite these increased costs, the alternative is considered economically feasible because it does not require new infrastructure and does not reduce ore recovery.

All other components of mining operations—including pit expansion limits, mining rates, groundwater extraction, the underground water pipeline, the 69-kV overhead transmission line, processing facilities, the CMM Access Road, and reclamation activities—would remain substantially consistent with the proposed Project. Under this alternative, the primary distinguishing features include an approximate two-year extension of the operational period, increased handling and placement of waste rock, and a corresponding short-term increase in construction- and operation-related emissions. However, this alternative would provide long-term environmental benefits by reducing the potential for pit lake formation and associated evaporative losses. In addition, by limiting or eliminating the formation of a surface pit lake, this alternative would reduce the potential for migration of lake water containing trace metals (e.g., arsenic, lead, and copper) into the surrounding regional aquifer, thereby providing a long-term reduction in potential impacts to groundwater quality.

5.5.3.1 Relationship to Project Objectives

Alternative 2 (Backfilling to Avoid Surface Expression of South Pit Lake) would meet eight Project objectives and partially meet two Project objectives. Table 5-4 presents this alternative's ability to attain the Project objectives outlined in Section 5.2.1, *Project Objectives*, and in Chapter 2, *Project Description*.

Table 5-4. Attainment of Objectives for Alternative 2: Backfilling to Avoid Surface Expression of South Pit Lake

Objective	Does the Alternative Attain the Objective?
Continue Mining Operations: Continue gold (and silver) mining and processing activities within the previously approved Castle Mountain Mine Project Area.	**Yes.** Under this alternative, CMM would continue gold and silver mining and processing activities following cessation of operations and completion of interim reclamation within the previously approved CMM Project Area.
Expand Mineral Resource Recovery: Extract additional economically recoverable mineral resources identified through prior exploration programs within and adjacent to previously approved mining areas.	**Yes.** Under this alternative, CMM would extract additional mineral resources within and adjacent to the previously approved CMM Project Area.
Modify and Expand Existing Mining Facilities: Modify, upgrade, and expand existing mining and processing facilities, including ore processing, material handling, heap leach operations, and support infrastructure, to accommodate increased operational capacity.	**Yes.** Under this alternative, CMM would modify, upgrade, and expand ancillary facilities within the existing mine, including ore processing, material handling, heap leach operations, and support infrastructure.

Objective	Does the Alternative Attain the Objective?
Increase Operational Capacity Within the Approved Mine Area: Increase the rate and scale of mining and processing activities within the approved mine area to support efficient resource extraction.	**Yes.** Under this alternative, the scale and rate of mining and processing activities would increase.
Provide and Upgrade Utility Infrastructure: Develop, reestablish, or upgrade utility infrastructure—including electrical and water supply systems—necessary to support ongoing mining and processing operations by spreading responsible water extraction across multiple basins to reduce basin-specific effects, including installation of a buried water pipeline from the Nipton, California, area, following approximately 32 miles of existing roads to the mine.	**Yes.** Under this alternative, CMM would develop, reestablish, and upgrade utility infrastructure—including electrical and water supply systems.
Extend the Operational Life of the Mine: Extend the duration of mining, processing, and reclamation activities beyond previously approved timelines by 30 years (to approximately 2060 to allow for continued recovery of identified mineral resources.	**Yes.** Under this alternative, CMM would extend the duration of mining and processing activities beyond previously approved timelines to the year 2060.
Minimize Environmental Impacts to the Extent Feasible: Design and operate the Project to avoid, minimize, and, where feasible, reduce environmental impacts in a manner consistent with applicable land use plans and regulatory requirements. This includes reducing air emissions associated with the current diesel-fueled on-site power generation by coordinating with BLM to reinstall the former 69-kilovolt (kV) overhead powerline from the Walking Box Ranch area to the mine.	**Partially.** Under this alternative, the CMM expansion would result in increased haulage activity, fuel consumption, and associated air emissions due to the additional material movement and extended operating period compared to the proposed Project. In addition, by limiting or eliminating the formation of a surface pit lake, this alternative would reduce the potential for migration of lake water containing trace metals (e.g., arsenic, lead, copper) into the surrounding regional aquifer. Although this alternative would include reinstalling the former 69-kV overhead powerline from the Walking Box Ranch area to the mine, this alternative would result in a net increase of air emissions compared to the proposed Project. Therefore, this objective is not attained as air emissions would increase.
Promote Efficient Use of Previously Disturbed Areas: Prioritize the use and expansion of previously disturbed mining areas to the extent feasible, consistent with land use and resource conservation policies.	**Yes.** Under this alternative, the previously disturbed mining areas at CMM would be expanded.
Ensure Consistency with Applicable Plans and Regulations: Design and operate the Project in a manner consistent with applicable federal, state, and local laws, regulations, and land use plans, including the San Bernardino Countywide Plan.	**Partially.** Under this alternative, the proposed Project would be consistent with applicable federal, State, and local laws, regulations, and land use plans; however, the additional two years of operation, increased waste-rock movement, and higher short-term emissions would not be consistent with applicable federal, State, and local laws with goals aimed at reducing air emissions.
Support Regional Economic Activity: Provide employment opportunities and contribute to the regional economy through continued mining operations, including the addition of approximately 400 new jobs to the local workforce, thereby offering stable employment for area residents and helping to reduce local unemployment.	**Yes.** Under this alternative, 400 new jobs would be added to the local workforce, which would provide stable employment for area residents and help reduce local unemployment.

5.5.3.2 Comparison of Alternative 2 with Significant Effects of the Project

Alternative 2 (Backfilling to Avoid Surface Expression of South Pit Lake) was evaluated to determine whether it would feasibly attain most of the basic objectives of the proposed Project while avoiding or substantially lessening the significant environmental impacts identified for the proposed Project, as required by State CEQA Guidelines Section 15126.6. As documented in Chapter 4, *Environmental Impact Analysis*, the proposed Project would result in similar significant and unavoidable air quality impacts due to construction- and operation-related emissions that would exceed applicable MDAQMD thresholds, even with implementation of feasible mitigation measures.

Under this alternative, certain components of the proposed Project would be modified to reduce overall development intensity and/or alter operational characteristics. These changes would result in increased fuel consumption by the haul trucks and an additional two years of operational life of the mine.

The emissions inventory for Alternative 2 is presented as Attachment B in the *CMM 2022 Plan Amendment Air Quality, Climate, and Energy Alternatives Analysis* (AQ Alternatives Analysis) (Ramboll 2026). Supplemental operations would be limited to haul truck operation, material handling, off-road equipment (loader, dozer, and water truck), and employee vehicle and fuel delivery truck trips. Any additional emissions resulting from ancillary support operations, such as administrative buildings and trailers, are assumed to be minimal and were not quantified. No changes to construction emissions would be anticipated from new or modified activity in Alternative 2, thus construction emission estimates were not quantified. The extended schedule would result in continued air emissions over a longer time frame, which would result in an increase in total cumulative operational emissions. Consequently, this alternative would continue to result in significant air quality impacts and would not avoid or substantially lessen the proposed Project's significant and unavoidable air quality effects.

With respect to other environmental resource areas, this alternative would result in impacts that are generally similar to the proposed Project. Impacts related to cultural and tribal cultural resources, hydrology and water quality, noise, wildfire risk, and land use consistency would remain less than significant or less than significant with mitigation, consistent with the conclusions presented in Chapter 4. This alternative would provide a beneficial long-term effect to groundwater quality by reducing the potential for pit lake formation and associated migration of lake water containing trace metals (e.g., arsenic, lead, copper) into the surrounding regional aquifer.

Overall, while this alternative would have similar environmental impacts compared to the proposed Project, it would not reduce the proposed Project's most severe environmental impact to air quality to a less-than-significant level. Therefore, this alternative would not represent a substantially environmentally superior alternative.

5.5.3.3 Feasibility and Ability to Attain Project Objectives

The feasibility of Alternative 2 (Backfilling to Avoid Surface Expression of South Pit Lake) was evaluated in accordance with State CEQA Guidelines Section 15126.6(f)(1), which allows consideration of site suitability, economic viability, availability of infrastructure, regulatory constraints, and the ability of this alternative to reasonably attain most of the basic objectives of the proposed Project.

This alternative would be technically feasible and could be implemented within the existing Project Area without requiring additional land acquisition or fundamental changes to regulatory approvals. However, this alternative would also limit the proposed Project's ability to fully achieve its core objective related to minimizing impacts to the region's natural resources through sensitive site planning, given that this alternative would require additional haulage using 250-ton haul trucks.

In addition, this alternative would not eliminate the need for major construction activities, mobile equipment operation, or long-term power generation. Accordingly, this alternative would not avoid the proposed Project's significant and unavoidable air quality impacts, which remain the primary driver for the alternatives analysis.

Given these considerations, this alternative would only partially attain the Project objectives and would not meaningfully reduce the proposed Project's most severe environmental impacts. While it represents a reasonable alternative for comparative purposes under CEQA, it does not meet the standard of an environmentally superior alternative that both attains most Project objectives and substantially lessens significant environmental effects.

5.5.4 Alternative 3: Small Solar Facility for Supplementation

Alternative 3 (Small Solar Facility for Supplementation) proposes the installation of a small on-site solar power facility to supplement intermittent energy needs for mine operations (Figure 5-3). The solar power facility would produce, on average, approximately five to 10 MW. The area north of the proposed Project heap leach pad, extending to the north nursery, was undisturbed until the 2023 York Fire (Inciweb 2023). As a result of the fire, most vegetation in this area was lost, potentially making it more suitable for a permanent solar array, with minimal additional impact to sensitive species. Use of this previously burned area would help address land-use constraints identified in earlier solar evaluations. However, implementation of the small solar facility would result in an increased disturbance footprint, jurisdictional restrictions within and adjacent to the York Fire burn perimeter, higher costs, and limited incremental environmental benefits. In addition, this alternative would involve substantial capital, operations, and relocation costs associated with battery overbuild and augmentation, while introducing new ground disturbance and potential impacts to biological and cultural resources (CMV 2021).

Under this alternative, a small solar facility would supplement power needs, improving reliability and reducing operational utility demand. Solar generation would modestly reduce electrical demand from the utility grid and on-site LNG microturbines during daylight hours, resulting in decreased overall energy consumption from conventional sources. Solar generation would primarily support daytime operations but would not be sufficient for equipment start-ups or to meet overnight power requirements; LNG microturbines and the utility powerline would remain the primary sources of power. Integration of solar generation would require only minor modifications to the on-site electrical grid, making the alternative technically feasible (CMV 2025b).

From an economic standpoint, this alternative would increase total Project costs by approximately $42 million, primarily due to construction and integration of the solar facility; however, based on updated 2025 analyses, the alternative is considered economically feasible (CMV 2025b).

Most other aspects of the mining operation—including pit expansion, mining rate, mine life, groundwater use, underground water pipeline, 69-kV overhead powerline, facility locations, CMM Access Road, and reclamation—would remain unchanged from the proposed Project, aside from minor adjustments associated with solar installation and additional land use within the Approved Mine Project Area.

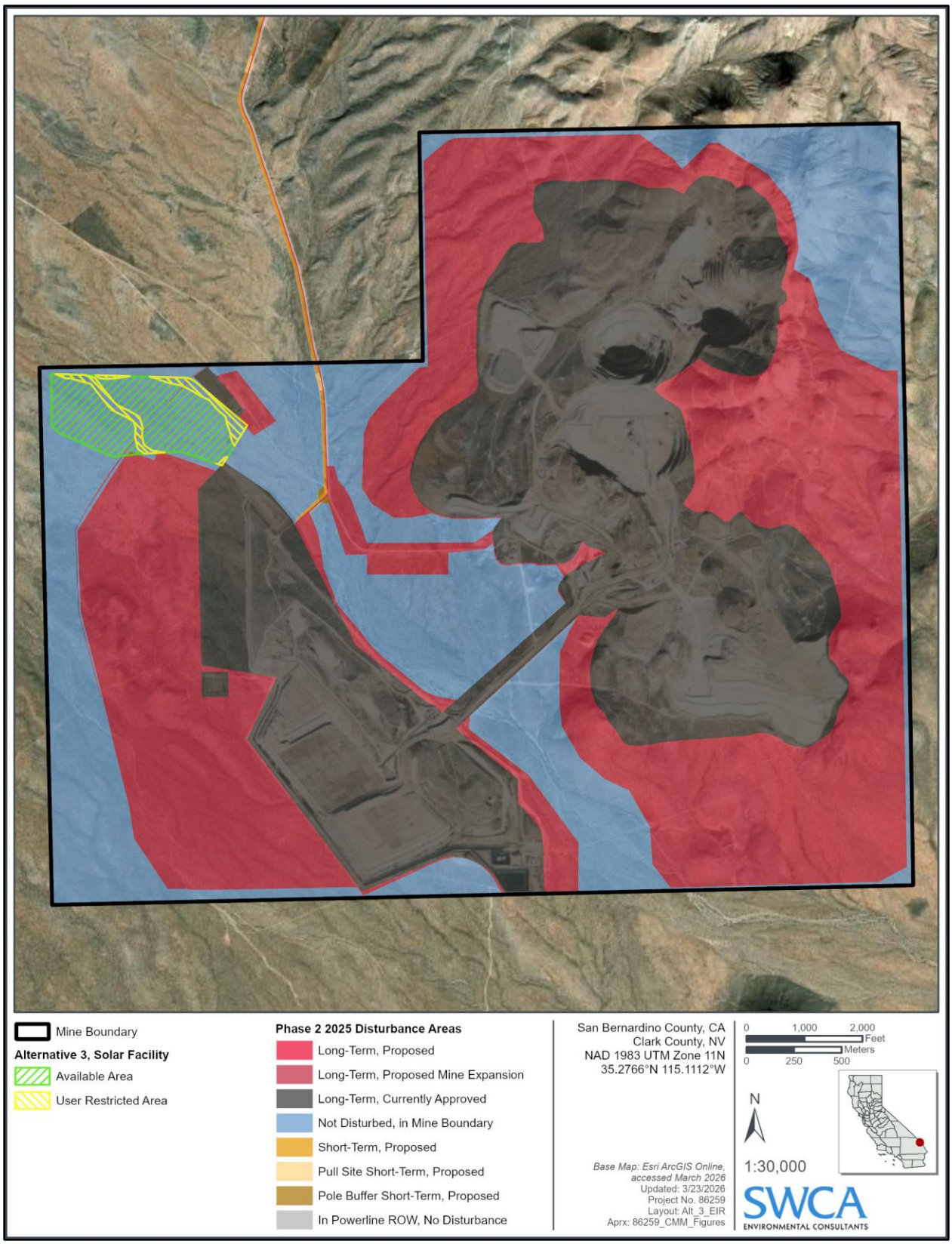


Figure 5-3. Alternative 3: Small Solar Facility for Supplementation

5.5.4.1 Relationship to Project Objectives

Alternative 3 (Small Solar Facility for Supplementation) would meet eight Project objectives and partially meet two Project objectives. Table 5-5 presents this alternative's ability to attain the Project objectives outlined in Section 5.2.1, *Project Objectives*, and in Chapter 2, *Project Description*.

Table 5-5. Attainment of Objectives for Alternative 3: Small Solar Facility for Supplementation

Objective	Does the Alternative Attain the Objective?
Continue Mining Operations: Continue gold (and silver) mining and processing activities within the previously approved Castle Mountain Mine Project Area.	**Yes.** Under this alternative, CMM would continue gold and silver mining and processing activities following cessation of operations and completion of interim reclamation within the previously approved CMM Project Area.
Expand Mineral Resource Recovery: Extract additional economically recoverable mineral resources identified through prior exploration programs within and adjacent to previously approved mining areas.	**Yes.** Under this alternative, CMM would extract additional mineral resources within the previously approved CMM Project Area.
Modify and Expand Existing Mining Facilities: Modify, upgrade, and expand existing mining and processing facilities, including ore processing, material handling, heap leach operations, and support infrastructure, to accommodate increased operational capacity.	**Yes.** Under this alternative, CMM would modify, upgrade, and expand ancillary facilities within the existing mine, including ore processing, material handling, heap leach operations, and support infrastructure.
Increase Operational Capacity Within the Approved Mine Area: Increase the rate and scale of mining and processing activities within the approved mine area to support efficient resource extraction.	**Yes.** Under this alternative, the scale and rate of mining and processing activities would increase.
Provide and Upgrade Utility Infrastructure: Develop, reestablish, or upgrade utility infrastructure—including electrical and water supply systems—necessary to support ongoing mining and processing operations by spreading responsible water extraction across multiple basins to reduce basin-specific effects, including installation of a buried water pipeline from the Nipton, California, area, following approximately 32 miles of existing roads to the mine.	**Yes.** Under this alternative, CMM would develop, reestablish, and upgrade utility infrastructure—including electrical and water supply systems. However, solar generation would only primarily support daytime operations but would not be sufficient for equipment start-ups or to meet overnight power requirements; LNG microturbines and the utility powerline would remain the primary sources of power. Integration of solar generation would require minor modifications to the on-site electrical grid.
Extend the Operational Life of the Mine: Extend the duration of mining, processing, and reclamation activities beyond previously approved timelines by 30 years (to approximately 2060) to allow for continued recovery of identified mineral resources.	**Yes.** Under this alternative, CMM would extend the duration of mining and processing activities beyond previously approved timelines to year 2060.
Minimize Environmental Impacts to the Extent Feasible: Design and operate the Project to avoid, minimize, and, where feasible, reduce environmental impacts in a manner consistent with applicable land use plans and regulatory requirements. This includes reducing air emissions associated with the current diesel-fueled on-site power generation by coordinating with BLM to reinstall the former 69-kilovolt (kV) overhead powerline from the Walking Box Ranch area to the mine.	**Partially.** Under this alternative, the CMM expansion would result in installation of a small on-site solar power facility to supplement intermittent energy needs for mine operations within a previously burned area. This area is currently not proposed to be disturbed under the proposed Project. As such, minor additional material movement and minimal additional impact to sensitive species would occur compared to the proposed Project with an increase in potential impacts to biological and cultural resources. This alternative would include reinstalling the former 69-kV overhead powerline from the Walking Box Ranch area to the mine.
Promote Efficient Use of Previously Disturbed Areas: Prioritize the use and expansion of previously disturbed mining areas to the extent feasible, consistent with land use and resource conservation policies.	**Yes.** Under this alternative, CMM would extend the duration of mining and processing activities beyond previously approved timelines to the year 2060.

Objective	Does the Alternative Attain the Objective?
Ensure Consistency with Applicable Plans and Regulations: Design and operate the Project in a manner consistent with applicable federal, state, and local laws, regulations, and land use plans, including the San Bernardino Countywide Plan.	**Partially.** Under this alternative, the proposed Project would be consistent with applicable federal, State, and local laws, regulations, and land use plans; however, implementation of the small solar facility would result in an increased disturbance footprint, jurisdictional restrictions within and adjacent to the York Fire burn perimeter, and the introduction of new ground disturbance and potential impacts to biological and cultural resources. The additional ground disturbance would not be consistent with applicable federal, State, and local laws, with goals aimed at reducing impacts to biological and cultural resources.
Support Regional Economic Activity: Provide employment opportunities and contribute to the regional economy through continued mining operations, including the addition of approximately 400 new jobs to the local workforce, thereby offering stable employment for area residents and helping to reduce local unemployment.	**Yes.** Under this alternative, 400 new jobs would be added to the local workforce, which would provide stable employment for area residents and help reduce local unemployment.

5.5.4.2 Comparison of Alternative 3 with Significant Effects of the Project

Alternative 3 (Small Solar Facility for Supplementation) was evaluated to determine whether it would feasibly attain most of the basic objectives of the proposed Project while avoiding or substantially lessening the significant environmental impacts identified for the proposed Project, consistent with State CEQA Guidelines Section 15126.6. As discussed in Chapter 4, *Environmental Impact Analysis*, the proposed Project would result in significant and unavoidable air quality impacts associated with construction- and operation-related emissions that would exceed MDAQMD significance thresholds, even with implementation of feasible mitigation measures.

The emissions inventory for Alternative 3 is presented as Attachment C in the AQ Alternatives Analysis (Ramboll 2026). Although this alternative would result in a smaller increase in emissions compared to the other action alternatives evaluated, emissions of CO, NO_X, PM_{10}, and $PM_{2.5}$ would nevertheless remain above applicable MDAQMD thresholds due to the continued need for heavy equipment operation, mobile sources, and long-term power generation to support mining activities. Therefore, while this alternative would reduce the magnitude of the proposed Project's air quality impacts, it would not reduce those impacts to a less-than-significant level and would continue to result in significant air quality effects.

With respect to other environmental resource areas, this alternative would result in impacts that are generally similar to the proposed Project, except there would be a potential reduction of GHG emissions and subsequently, a potential reduction of climate impacts. Reduced operational intensity could lessen impacts to noise, while impacts related to biological resources, cultural and tribal cultural resources, hydrology and water quality, wildfire risk, and land use would remain less than significant or less than significant with mitigation. No new significant environmental impacts would be introduced by the implementation of this alternative.

Overall, this alternative would provide measurable environmental benefits compared to the proposed Project, particularly with respect to energy consumption and long-term operational emissions.

5.5.4.3 Feasibility and Ability to Attain Project Objectives

The feasibility of Alternative 3 (Small Solar Facility for Supplementation) was evaluated in accordance with State CEQA Guidelines Section 15126.6(f)(1), which allows consideration of site suitability, economic viability, availability of infrastructure, regulatory constraints, and the ability to reasonably attain most of the basic objectives of the proposed Project.

This alternative would be technically feasible from an engineering perspective and could be implemented within the existing Project boundary. However, while this alternative would reduce power demand and operational emissions, it would not eliminate the need for continuous equipment operation and supporting infrastructure. Consequently, this alternative would still generate air quality impacts that exceed applicable significance thresholds.

Although this alternative would not eliminate the proposed Project's significant and unavoidable air quality impacts, it would result in a net reduction in operational air emissions when compared to the proposed Project. By reducing reliance on fossil fuel–based power generation while otherwise maintaining similar operational characteristics, this alternative would lessen adverse air quality effects to the extent feasible.

Based on this comparative analysis, this alternative would minimize air quality impacts relative to the proposed Project while still meeting, or partially meeting, most of the Project objectives.

5.5.5 Alternative 4: Backfilling to Avoid Surface Expression of South Pit Lake and Small Solar Facility for Supplementation

Alternative 4 (Backfilling to Avoid Surface Expression of South Pit Lake and Small Solar Facility for Supplementation), which is a combination of Alternative 2 and 3, involves partial backfilling of the South Extension Pit following completion of ore extraction and the installation of a small on-site solar power facility to supplement intermittent energy needs for mine operations (Figure 5-4).

Under this alternative, backfilling would commence at approximately Operation Year 18, when mining in the South Extension Pit is completed. The pit floor would be raised from an approximate pre-backfill elevation of 3,120 feet amsl to approximately 3,480 feet amsl. Achieving this elevation would require the placement of approximately 17 million tons of non-ore waste rock. The backfill material would consist of waste rock previously generated during mining and temporarily stored or placed in the JSLA pit area, which is already designated for backfilling under the approved mine plan. No off-site material or new waste sources would be required.

Backfilling would be accomplished using existing mine equipment, primarily 250-ton haul trucks, and would extend the overall mining schedule by approximately two years. The extended schedule reflects the time required to excavate, haul, and place the additional waste rock while maintaining safe operating conditions. From a technical feasibility standpoint, the alternative relies on standard, proven mining and reclamation practices that are already employed elsewhere at the mine site. No new technologies, equipment types, or design standards would be required, and no changes to pit geometry beyond the proposed backfill elevation would occur.

Hydrologic modeling indicates that partially backfilling the South Extension Pit to an elevation of approximately 3,480 feet amsl would prevent the formation of a measurably significant pit lake, substantially reducing long-term evaporative water loss compared to the no-backfill condition. Under baseline conditions, a non-backfilled pit is anticipated to form a pit lake that would gradually equilibrate with regional groundwater levels over approximately 100 years. Partial backfilling would reduce the available pit volume and limit ephemeral water feature exposure, resulting in estimated evaporative losses of approximately zero to100 AFY, compared to approximately 672 AFY without backfilling (Appendix J).

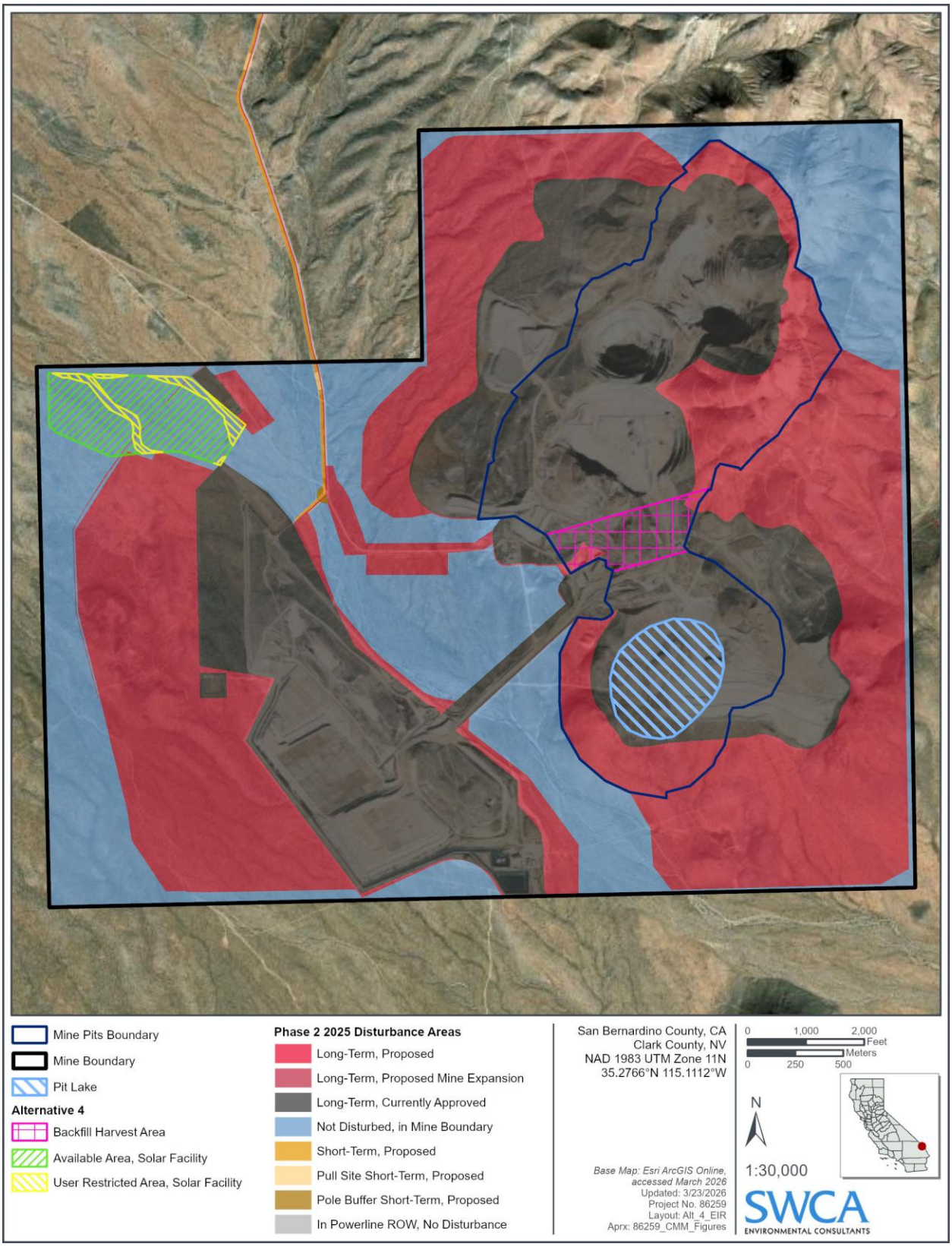


Figure 5-4. Alternative 4: Backfilling to Avoid Surface Expression of South Pit Lake and Small Solar Facility for Supplementation

However, although this alternative would provide long-term water resource benefits by reducing evaporative losses associated with pit lake formation, a critical finding of the hydrologic simulation is that the stabilized lake level of the natural formation of the pit lake that would occur without backfilling will remain below the regional groundwater table, which ensures the pit lake acts as a permanent hydraulic sink, preventing the migration of lake water into the surrounding regional aquifer. A critical finding of the hydrologic simulation is that the stabilized lake level of the natural formation of the pit lake that would occur without backfilling will remain below the regional groundwater table, which ensures the pit lake acts as a permanent hydraulic sink, preventing the migration of lake water (containing trace metals such as arsenic, lead, and copper) into the surrounding regional aquifer.

The solar power facility would produce, on average, approximately 5 to 10 MW. The area north of the proposed Project heap leach pad, extending to the north nursery, was undisturbed until the 2023 York Fire (Inciweb 2023).

Under this alternative, a small solar facility would supplement power needs, improving reliability and reducing operational utility demand. Solar generation would modestly reduce electrical demand from the utility grid and on-site LNG microturbines during daylight hours, resulting in decreased overall energy consumption from conventional sources. Solar generation would primarily support daytime operations but would not be sufficient for equipment start-ups or to meet overnight power requirements; LNG microturbines and the utility powerline would remain the primary sources of power. Integration of solar generation would require only minor modifications to the on-site electrical grid, making the alternative technically feasible (CMV 2025b).

Implementation of this alternative would require an increased disturbance footprint, resulting in increased haulage activity, fuel consumption, associated air emissions, jurisdictional restrictions within and adjacent to the York Fire burn perimeter, higher costs, and an increase to potential impacts to biological and cultural resources (CMV 2021).

From an economic feasibility perspective, partial backfilling of the South Extension Pit would increase total mining costs by approximately $20 million, and implementation of the small solar facility would increase total Project costs by approximately $42 million, for a total of $62 million additional costs. Despite these increased costs, the alternative is considered economically feasible.

Most other aspects of the mining operation—including pit expansion, mining rate, mine life, groundwater use, underground water pipeline, 69-kV overhead powerline, facility locations, CMM Access Road, and reclamation—would remain unchanged from the proposed Project, aside from the additional two years of operation, increased waste-rock movement, higher short-term emissions, the long-term reduction in pit lake formation and minor adjustments associated with solar installation and additional land use within the Approved Mine Project Area.

5.5.5.1 Relationship to Project Objectives

Alternative 4 (Backfilling to Avoid Surface Expression of South Pit Lake and Small Solar Facility for Supplementation) would meet eight Project objectives and partially meet two Project objectives. Table 5-6 presents this alternative's ability to attain the Project objectives outlined in Section 5.2.1, *Project Objectives*, and in Chapter 2, *Project Description*.

Table 5-6. Attainment of Objectives for Alternative 4: Backfilling to Avoid Surface Expression of South Pit Lake and Small Solar Facility for Supplementation

Objective	Does the Alternative Attain the Objective?
Continue Mining Operations: Continue gold (and silver) mining and processing activities within the previously approved Castle Mountain Mine Project Area.	**Yes.** Under this alternative, CMM would continue gold and silver mining and processing activities following cessation of operations and completion of interim reclamation within the previously approved CMM Project Area.
Expand Mineral Resource Recovery: Extract additional economically recoverable mineral resources identified through prior exploration programs within and adjacent to previously approved mining areas.	**Yes.** Under this alternative, CMM would extract additional mineral resources within the previously approved CMM Project Area.
Modify and Expand Existing Mining Facilities: Modify, upgrade, and expand existing mining and processing facilities, including ore processing, material handling, heap leach operations, and support infrastructure, to accommodate increased operational capacity.	**Yes.** Under this alternative, CMM would modify, upgrade, and expand ancillary facilities within the existing mine, including ore processing, material handling, heap leach operations, and support infrastructure.
Increase Operational Capacity Within the Approved Mine Area: Increase the rate and scale of mining and processing activities within the approved mine area to support efficient resource extraction.	**Yes.** Under this alternative, the scale and rate of mining and processing activities would increase.
Provide and Upgrade Utility Infrastructure: Develop, reestablish, or upgrade utility infrastructure—including electrical and water supply systems—necessary to support ongoing mining and processing operations by spreading responsible water extraction across multiple basins to reduce basin-specific effects, including installation of a buried water pipeline from the Nipton, California, area, following approximately 32 miles of existing roads to the mine.	**Yes.** Under this alternative, CMM would develop, reestablish, and upgrade utility infrastructure—including electrical and water supply systems. However, solar generation would only primarily support daytime operations but would not be sufficient for equipment start-ups or to meet overnight power requirements; LNG microturbines and the utility powerline would remain the primary sources of power. Integration of solar generation would require minor modifications to the on-site electrical grid.
Extend the Operational Life of the Mine: Extend the duration of mining, processing, and reclamation activities beyond previously approved timelines by 30 years (to approximately 2060) to allow for continued recovery of identified mineral resources.	**Yes.** Under this alternative, CMM would extend the duration of mining and processing activities beyond previously approved timelines to the year 2060
Minimize Environmental Impacts to the Extent Feasible: Design and operate the Project to avoid, minimize, and, where feasible, reduce environmental impacts in a manner consistent with applicable land use plans and regulatory requirements. This includes reducing air emissions associated with the current diesel-fueled on-site power generation by coordinating with BLM to reinstall the former 69-kilovolt (kV) overhead powerline from the Walking Box Ranch area to the mine.	**Partially.** Under this alternative, the CMM expansion would result in installation of a small on-site solar power facility to supplement intermittent energy needs for mine operations within a previously burned area. This area is currently not proposed to be disturbed under the proposed Project. As such, minor additional material movement and minimal additional impact to sensitive species would occur compared to the proposed Project with an increase in potential impacts to biological and cultural resources. Additionally, this alternative would result in increased haulage activity, fuel consumption, and associated air emissions due to the additional material movement and extended operating period compared to the proposed Project. However, this alternative would provide a long-term benefit by reducing the potential for pit lake formation and associated water quality concerns and it would incrementally decrease operational emissions of criteria pollutants and greenhouse gases relative to the proposed Project. This alternative would include reinstalling the former 69-kV overhead powerline from the Walking Box Ranch area to the mine.
Promote Efficient Use of Previously Disturbed Areas: Prioritize the use and expansion of previously disturbed mining areas to the extent feasible, consistent with land use and resource conservation policies.	**Yes.** Under this alternative, CMM would extend the duration of mining and processing activities beyond previously approved timelines to the year 2060.

Objective	Does the Alternative Attain the Objective?
Ensure Consistency with Applicable Plans and Regulations: Design and operate the Project in a manner consistent with applicable federal, state, and local laws, regulations, and land use plans, including the San Bernardino Countywide Plan.	**Partially.** Under this alternative, the additional ground disturbance resulting from the solar installation would not be consistent with applicable federal, State, and local laws with goals aimed at reducing impacts to biological and cultural resources. Additionally, the added two years of operation resulting from the increased waste-rock movement due to backfilling and higher short-term emissions would not be consistent with the applicable laws with goals aimed at reducing air emissions. However, this alternative would reduce long-term pollutants through the use of alternative energy sources and reduce potential impacts to groundwater by reducing migration of pollutants from the lake pits. These reductions would be consistent with federal, State, and local laws aimed at reducing impacts to the environment.
Support Regional Economic Activity: Provide employment opportunities and contribute to the regional economy through continued mining operations, including the addition of approximately 400 new jobs to the local workforce, thereby offering stable employment for area residents and helping to reduce local unemployment.	**Yes.** Under this alternative, 400 new jobs would be added to the local workforce, which would provide stable employment for area residents and help reduce local unemployment.

5.5.5.2 Comparison of Alternative 4 with Significant Effects of the Project

Under this alternative, environmental impacts would generally be similar to those of the proposed Project because overall mining intensity, infrastructure development, and operational characteristics would remain largely unchanged. As with the proposed Project, construction and operation activities would generate criteria pollutant emissions that exceed applicable thresholds, resulting in significant and unavoidable impacts to air quality. The approximately two-year extension of the mining schedule and increased haulage associated with backfilling activities would incrementally increase short-term emissions and prolong the duration of air quality-related impacts. In addition, the increased disturbance footprint associated with this alternative could result in greater impacts to biological and cultural resources compared to the proposed Project.

Notwithstanding these potentially increased or extended impacts, this alternative would provide measurable environmental benefits in certain resource areas. Partial backfilling of the South Extension Pit would substantially reduce or eliminate the formation of a surface pit lake, thereby reducing long-term evaporative water loss and limiting the extent of open water exposure within the Project Area. This represents a beneficial effect to water resource management in an arid desert environment, where minimizing evaporative loss is an important consideration.

In addition, the incorporation of a small on-site solar facility would reduce reliance on fossil fuel–based energy sources during daytime operations, resulting in a reduction in overall energy demand from the utility grid and on-site LNG microturbines. Although this reduction would not be sufficient to reduce air quality impacts to a less-than-significant level, it would incrementally decrease operational emissions of criteria pollutants and greenhouse gases relative to the proposed Project.

With respect to hydrology and water quality, this alternative would also provide a long-term benefit by reducing the potential for pit lake formation and associated water quality concerns. While modeling indicates that a pit lake under baseline conditions would function as a hydraulic sink and would not result in migration of constituents into the regional aquifer, the reduction or elimination of a surface pit lake under this alternative would minimize the potential for exposure to water containing trace metals (e.g., arsenic, lead, and copper), thereby reducing long-term uncertainty and potential risk to groundwater resources.

Overall, although this alternative would not avoid or substantially lessen the proposed Project's significant and unavoidable air quality impacts, it would provide targeted environmental benefits related to water and energy conservation, groundwater quality, reduced evaporative loss, and incremental reductions in operational emissions.

5.5.5.3 Feasibility and Ability to Attain Project Objectives

The feasibility of Alternative 4 (Backfilling to Avoid Surface Expression of South Pit Lake and Small Solar Facility for Supplementation) was evaluated in accordance with State CEQA Guidelines Section 15126.6(f)(1), which allows consideration of site suitability, economic viability, availability of infrastructure, regulatory constraints, and the ability of this alternative to reasonably attain most of the basic objectives of the proposed Project.

This alternative would be technically feasible from an engineering perspective and could be implemented within the existing Project Area without requiring additional land acquisition or fundamental changes to regulatory approvals. However, this alternative would not eliminate the need for continuous equipment operation and supporting infrastructure. Consequently, this alternative would still generate air quality impacts that exceed applicable significance thresholds.

Although this alternative would not eliminate the proposed Project's significant and unavoidable air quality impacts, it would reduce reliance on fossil fuel–based power generation while otherwise maintaining similar operational characteristics. This alternative would lessen adverse air quality effects to the extent feasible and would also provide a long-term benefit by reducing the potential for pit lake formation and associated water quality concerns.

5.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The State CEQA Guidelines require an analysis of alternatives to identify an Environmentally Superior Alternative among the alternatives evaluated in the EIR. The Environmentally Superior Alternative is the alternative that would minimize adverse impacts on the environment. Based on the evaluation of the alternatives in this chapter and the comparison of impacts, as summarized in Table 5-7, the No Project Alternative would minimize the proposed Project's adverse impacts on the environment. As directed by State CEQA Guidelines Section 15126.6(e)(2):

> If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

As summarized in Section 5.5.2, *Alternative 1: No Project Alternative*, and Table 5-7, the No Project Alternative would result in the fewest environmental impacts overall because it would avoid the construction and operational activities associated with the proposed Project. Under the No Project Alternative, no new mining expansion, infrastructure development, or associated ground disturbance would occur. Consequently, this alternative would avoid the proposed Project's significant and unavoidable air quality impacts and would reduce impacts across most environmental resource areas.

However, the No Project Alternative would not meet most of the Project objectives, including the expansion of mining operations, installation of improved water and electrical infrastructure, extension of the mine life to 2060, and provision of long-term employment and economic benefits. Consistent with State CEQA Guidelines Section 15126.6(e)(2), when the No Project Alternative is identified as environmentally superior, the EIR must also identify an environmentally superior alternative among the other action alternatives.

Among the action alternatives evaluated in this EIR (Alternatives 2–4), Alternative 4 (Backfilling to Avoid Surface Expression of South Pit Lake and Small Solar Facility for Supplementation) would provide the greatest reduction in environmental impacts while still attaining most of the Project objectives. Alternative 4 would incorporate a small on-site solar photovoltaic facility designed to supplement electrical power needs for mine operations and would reduce long-term hydrological impacts associated with pit lake formation. The solar facility would reduce reliance on fossil fuel–based power generation and decrease the amount of electricity generated from on-site LNG microturbines and imported grid electricity during daylight hours.

Other aspects of mine operations—including pit expansion, mining rates, mine life, water use, powerline installation, and pipeline construction—would remain largely the same as under the proposed Project. As a result, impacts to most other environmental resource areas would be generally similar to those associated with the proposed Project, and would remain less than significant or less than significant with mitigation, consistent with the analysis presented in Chapter 4.

While Alternative 2 (Backfilling to Avoid Surface Expression of South Pit Lake) would reduce long-term hydrological impacts associated with pit lake formation, it would also extend the operational life of mining activities and increase cumulative emissions due to the additional haulage required for backfilling. Alternative 3 (Small Solar Facility for Supplementation) would reduce operational air emissions while still attaining most of the Project objectives; however, impacts to air emissions would remain significant and unavoidable

Accordingly, Alternative 4 (Backfilling to Avoid Surface Expression of South Pit Lake and Small Solar Facility for Supplementation) is identified as the Environmentally Superior Alternative among the action alternatives because it would reduce operational air emissions and would reduce long-term hydrological impacts associated with pit lake formation, while still attaining most of the Project objectives, avoiding additional significant environmental impacts beyond those associated with the proposed Project.

The County and the BLM will consider the entire administrative record, including public comments and testimony, when determining whether to approve the proposed Project, approve an alternative, or approve a combination of project elements. In all cases, the adopted Project would be subject to the Mitigation Monitoring and Reporting Program (MMRP) included in Appendix M.

Table 5-7. Comparison of Impacts Among the Alternatives

Issue Area	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Backfilling to Avoid Surface Expression of South Pit Lake	Alternative 3: Small Solar Facility for Supplementation	Alternative 4: Backfilling to Avoid Surface Expression of South Pit Lak and Small Solar Facility for Supplementation
Aesthetics	Increased	**Decreased**	Similar	Similar	Similar
Agriculture and Forestry	Similar - No Impact	Similar - No Impact	Similar - No Impact	Similar - No Impact	Similar - No Impact
Air Quality	Increased	**Decreased**	Increased	**Decreased**	**Slight Decrease**
Biological Resources	Increased	**Decreased**	Increased	Increased	Increased
Cultural and Tribal Cultural Resources	Increased	**Decreased**	Similar	Similar	Similar
Energy	Increased	**Decreased**	Similar	Similar	Similar

Issue Area	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Backfilling to Avoid Surface Expression of South Pit Lake	Alternative 3: Small Solar Facility for Supplementation	Alternative 4: Backfilling to Avoid Surface Expression of South Pit Lak and Small Solar Facility for Supplementation
Geology, Soils, and Mineral Resources	Increased	**Decreased**	Similar	Similar	Similar
Greenhouse Gas Emissions	Increased	**Decreased**	Increased	**Decreased**	**Slight Decrease**
Hazards and Hazardous Materials	Increased	**Decreased**	Similar	Similar	Similar
Hydrology and Water Quality	Increased	**Decreased**	**Decreased**	Similar	**Slight Decrease**
Land Use and Planning	Increased	Similar	Similar	Similar	Similar
Noise and Vibration	Increased	**Decreased**	Increased	**Decreased**	**Slight Decrease**
Population and Housing	Increased	**Decreased**	Similar	Similar	Similar
Public Services, Utilities, and Service Systems	Increased	**Decreased**	Similar	Similar	Similar
Transportation and Recreation	Increased	**Decreased**	Similar	Similar	Similar
Wildfire	Increased	Similar	Similar	Similar	Similar
Meets Project Objectives?	Yes	No	Partially	Partially	Partially

CHAPTER 6. OTHER CEQA CONSIDERATIONS

This chapter discusses other potential environmental effects for which the California Environmental Quality Act (CEQA) requires analysis, in addition to the specific issue areas evaluated in Chapter 4, *Environmental Impact Analysis*. These additional effects include the potential for the proposed Castle Mountain Mine Phase II Expansion Project (Project) to result in growth-inducing impacts, significant irreversible environmental changes, and impacts related to Environmental Justice.

6.1 GROWTH-INDUCING IMPACTS

Section 15126.2(e) of the State CEQA Guidelines requires that an environmental impact report (EIR) discuss the ways in which a project could facilitate growth-induced impacts in the surrounding environment, including facilitation of economic or population growth or the development of additional housing, either directly or indirectly. Growth-inducing impacts may also be caused by removing obstacles to population growth (such as expansion of a wastewater treatment plant, which allows for increased construction in a service area) or by increases in the population that require construction of new community service facilities and could cause significant environmental effects. The discussion must also consider project characteristics that may encourage and facilitate other activities that could affect the environment significantly, either on an individual or cumulative basis. Additionally, growth in any area must not be assumed as necessarily beneficial, detrimental, or of little significance to the environment.

The Phase II Expansion portion of the proposed Project would be located at the existing Castle Mountain Mine (CMM) facility, approximately 100 miles east of the city of Barstow, California; 60 miles south of the city of Las Vegas, Nevada; and 40 miles northwest of the BLM NFO. The Utilities Installation portion of the proposed Project would be located entirely within existing public rights-of-way (ROWs) along existing roadways in both California and Nevada. Generally, the proposed Project would involve the expansion of the existing CMM facility and installation of water and power lines. The proposed Project would not directly foster new residential development or result in population growth within the Project Area, largely because the land around the Project Area is dedicated to the Castle Mountain National Monument, greatly restricting potential development. There are no large swaths or parcels of undeveloped land in the vicinity of the Project Area that could be open to typical residential or commercial development, which is often a factor when considering growth-inducing effects.

Projects that physically remove obstacles to growth, or projects that indirectly induce growth, are those that may provide a catalyst for future unrelated development in an area. However, the proposed Project would not involve development of infrastructure or roadways that could indirectly lead to population growth. Although improvements are planned as part of the proposed Project along Walking Box Ranch Road, Nipton Road, and Nevada State Route 164 for installation of the proposed utility lines, the proposed Project would not extend an existing roadway facility into an area that is not currently provided with vehicular access. As a result, the proposed Project would not result in indirect population growth by providing vehicular access to an area presently lacking such access.

Because the proposed Project is focused on expanding the existing mining facilities in the Project Area, the proposed Project would add employment opportunities within a largely undeveloped area. This may be one of several factors that might lead to natural revitalization or redevelopment of the surrounding areas. However, this is not a likely or anticipated effect solely of the proposed Project, nor would it occur quickly. This type of scenario would require the turnover or redevelopment of individual, small properties pursued by individual property owners. From an environmental perspective, this type of slow redevelopment would allow utility and public works agencies and departments to keep pace with any type of service demand.

During Project construction, a temporary workforce would be needed to construct the new mining facilities and related on-site and off-site improvements. The proposed Project would create temporary construction-related work. However, the work requirements of most construction projects are highly specialized such that construction workers remain at a job site only for the time in which their specific skills are needed to complete a particular phase of the construction process, and the number of construction workers needed during any given period would largely depend on the specific stage of construction. It is assumed that workers would reside in Clark County, as population centers in San Bernardino County are not within commuting distance to CMM. As such, construction workers would not be expected to relocate to the Project vicinity as a direct consequence of working on the proposed Project, as these short-term positions are anticipated to be filled primarily by construction workers who reside in Clark County, Nevada. Due to the temporary nature of the construction jobs, it is likely that most workers would not bring their families with them. In a maximum impact scenario where all 500 peak workforce workers relocate from outside the analysis area and bring their families with them, assuming an average household size of 2.5, the resulting peak population increase would be approximately 1,250 people, which is less than 0.05% of the Clark County population of 2,293,764. Therefore, the proposed Project would not be considered to be growth-inducing from a short-term employment perspective. Once operational, the proposed Project is estimated to require approximately 400 full-time employees. Because the nearest housing communities to the Project Area are located in Clark County, it is assumed that workers would reside in Clark County, as population centers in San Bernardino County are not within commuting distance to CMM; however, this increase in employees is well within local and regional growth projections for population (see Section 4.13, *Population and Housing*). In addition, the proposed Project would not directly result in the addition of new residents to the area because the proposed Project would not involve residential development.

The Project Area is currently served by existing utilities and infrastructure; however, the proposed Project would include necessary infrastructure improvements as discussed in Section 4.14, *Public Services, Utilities, and Service Systems*, including the installation of new water and power lines. While the proposed Project would require local infrastructure to connect the Project Area to the mainlines, such improvements would be limited to serving Project-related demand and would not necessitate major local or regional utility infrastructure improvements that have not otherwise been accounted for and planned for on a regional level. Impacts related to the installation of the new utility infrastructure are analyzed throughout Chapter 4, *Environmental Impact Analysis*, of this EIR.

The proposed Project would not remove obstacles to population growth or cause an increase in population such that new community facilities or infrastructure would be required outside of the Project Area. Finally, the proposed Project is not expected to encourage or facilitate other activities that could significantly affect the environment. For these reasons, the proposed Project would not be significantly growth-inducing.

6.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2(d) of the State CEQA Guidelines indicates that uses of nonrenewable resources during the initial and continued phases of a project may be irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary and, particularly, secondary impacts (such as a street improvement that provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with a project. Irretrievable commitments of resources should be evaluated to ensure that such current consumption is justified.

Implementing the proposed Project would commit the use of nonrenewable fuels (e.g., petroleum) during construction and operation. In addition, some limited quantities of slowly renewable resources would be used in the construction process. In building and construction, slowly renewable resources refer to materials that regenerate naturally over a relatively longer period compared to fast-growing alternatives, but are still replenished at a rate that allows for their continued use with proper management. Examples of slowly renewable resources used in building materials include timber (wood) and soil. For the proposed Project, timber is not anticipated to be used extensively in Project construction since no significant wood features or structures are being built; however, it may be necessary for certain activities such as shoring or other secondary uses.

To construct the proposed Project, machinery, equipment, materials (e.g., sand, gravel), and workers would be required, representing an irreversible commitment of some of these resources. Similarly, during Project operation, some of these resources (e.g., water, electricity) would again be needed, representing a long-term commitment and permanent investment. The consumption and use of some of these resources would limit their availability for future generations. However, the amount of these materials used during Project construction and operation would not limit their availability for future generations, given the very small amount required for the proposed Project.

The proposed Project's impacts related to hazards and hazardous materials are discussed in Section 4.9, *Hazards and Hazardous Materials*. Construction of the proposed Project would also result in the short-term use of construction-related hazardous substances (e.g., gasoline, fuels, solvents, paints, oils, etc.) during the estimated 18-month construction phase of the proposed Project. The use of these substances could lead to upset conditions as a result of accidental spill or release. Any hazardous substances used during Project construction would be required to be used, transported, and disposed of in accordance with the Occupational Safety and Health Administration (OSHA) Process Safety Management Standard (29 Code of Federal Regulations [CFR] 1910.119) and the Environmental Health Standards (22 California Code of Regulations [CCR] Division 4.5), implemented by the California Department of Toxic Substances Control (DTSC). Adherence to existing federal and State of California (State) requirements would minimize the potential for the proposed Project to result in upset or accident conditions related to construction-related hazardous substance use.

Irreversible resource commitments refer to those that cannot be recovered, such as the extinction of a species or the extraction of nonrenewable minerals. Irretrievable commitments are losses that occur for a limited time, such as the temporary reduction in timber productivity when forested areas are cleared for power lines or roads. Implementation of the proposed Project would result in permanent changes to the geologic and mineral makeup of the Project Area, representing an irreversible commitment of resources. Additionally, the removal of habitat would cause a temporary loss of resources. Although the Project Area would be reclaimed after mining, this period would constitute a short-term irretrievable commitment of resources. Thus, Project operation would result in an irreversible commitment to the use of nonrenewable resources through the removal of mined ore.

6.3 ENVIRONMENTAL JUSTICE

Environmental Justice means the fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins, with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. Senate Bill (SB) 1000 requires every California city and county that contains a disadvantaged community to address Environmental Justice in their General Plan. The *San Bernardino Countywide Plan* (CWP) (County of San Bernardino 2022a) establishes Environmental Justice as a goal in Goal HZ-3:

> For unincorporated environmental justice focus areas, equitable levels of protection from environmental and health hazards; expanded opportunities for physical activity and meaningful civic engagement; and access to healthy food, public facilities, safe and sanitary housing.

The Environmental Justice analysis is organized at the census tract level because this is the smallest geographic unit for which the necessary demographic data to identify disadvantaged communities is reported in CalEnviroScreen, which is managed by the California Office of Environmental Health Hazard Assessment (OEHHA). The Environmental Justice Analysis Area includes all census tracts within three miles[1] of any Project component. Additionally, any impacts identified in other resource analyses throughout this EIR are considered for their potential to disproportionately impact disadvantaged communities. For example, other dispersed impacts may occur outside the Project Area, such as along major truck hauling routes used during Project construction, or in communities where Project workers may be staying temporarily during Project construction or permanently during Project operations.

6.3.1 Identification of Disadvantaged Communities

This section seeks to identify disadvantaged communities that may incur impacts from the proposed Project. Communities with high existing burdens or disadvantages may experience disproportionately high and adverse impacts from actions. A total of two census tracts fall within three miles of Project components—Census Tract 103 in San Bernardino County, California, and Census Tract 57.03 in Clark County, Nevada. Some data from California State websites is not reported for Census Tract 57.03 in Clark County; therefore, in addition to CalEnviroScreen, federal sources such as the U.S. Census Bureau and the U.S. Environmental Protection Agency's (USEPA) EJScreen are used to characterize existing environmental and socioeconomic burdens. Table 6-1 presents statistics on race and ethnicity in the Analysis Area. State and county-level data are also presented for reference. Both census tracts in the Analysis Area have a lower proportion of people of color than their respective state and county levels.

Table 6-1. Race and Ethnicity in the Analysis Area

Race/Ethnicity	California	San Bernardino County	Census Tract 103	Nevada	Clark County	Census Tract 57.03
Total Population	**39,242,785**	**2,187,816**	**3,384**	**3,141,000**	**2,293,764**	**1,133**
Not Hispanic or Latino	60.2%	45.4%	64.0%	70.8%	68.6%	95.0%
White Alone	34.6%	25.6%	51.8%	46.0%	39.4%	67.3%
Black or African American Alone	5.3%	7.6%	1.6%	9.1%	11.7%	6.9%
American Indian and Alaska Native Alone	0.3%	0.3%	0.0%	0.6%	0.3%	0.0%
Asian Alone	15.1%	7.9%	6.6%	8.5%	10.2%	11.3%
Native Hawaiian and Other Pacific Islanders Alone	0.3%	0.3%	0.0%	0.7%	0.7%	0.0%
Some Other Race	0.5%	0.5%	0.0%	0.5%	0.6%	0.0%
Two or More Races	4.1%	3.3%	4.0%	5.4%	5.6%	9.4%
Hispanic or Latino (of any race)	39.8%	54.6%	36.0%	29.2%	31.4%	5.0%

Source: U.S. Census Bureau (2023)

[1] The Environmental Justice Analysis Area is defined to include all census tracts within three miles of any Project component because most potential impacts to humans arising from Project-driven changes in parameters, such as viewshed quality, air quality, and noise, are likely to be most acute near the Project work areas and diminish rapidly over the course of three miles. For examples, see Washington State Department of Transportation (2020), Sullivan and Meyer (2014), Terrence J. DeWan and Associates and Scenic Resources Consultants (2015), and Choi et al. (2012).

Table 6-2 presents information on income levels in the Analysis Area. The census tracts both have lower incomes than their respective states and counties, including higher percentages of households with incomes below the poverty level, higher percentages of the population with incomes less than two times the poverty level, and median incomes less than 80% of the respective state and county median incomes. Under California SB 1000, an area is considered to be low-income if it is within a census tract that is at or below 80% of the statewide median income.

Table 6-2. Incomes in the Analysis Area

Income Measure	California	San Bernardino County	Census Tract 103	Nevada	Clark County	Census Tract 57.03
Total Households	**13,434,847**	**668,004**	**1,304**	**1,183,393**	**847,378**	**624**
Households with Income in the Past 12 Months Below the Poverty Level	11.7%	13.2%	25.0%	12.3%	12.9%	21.5%
Percent of the Population with Incomes Less than Two Times the Poverty Level	27.5%	32.8%	49.8%	30.3%	31.6%	42.7%
Median Household Income	$96,334	$82,184	$53,162	$75,561	$73,845	$48,125
80% of Median Household Income	$77,067	$65,747	NA	$60,449	$59,076	NA

Source: U.S. Census Bureau (2023)

Table 6-3 presents the percentile ranking of the census tracts for various environmental indicators in comparison with their respective states. These indicators come from the USEPA's EJScreen (facilitated by Public Environmental Data Partners) and OEHHA's CalEnviroScreen. Scores above 50 mean that the burden is higher than average for the state and a score of 99 means the burden is higher than 99% of other locations in the state. Both census tracts are in the 75th percentile or higher for the Drinking Water Non-Compliance indicator. Census Tract 103 is also above the 75th percentile for the Underground Storage Tanks indicator and is at the 75th percentile for the CalEnviroScreen 4.0 Disadvantaged Community Score, classifying it as a Disadvantaged Community. The CalEnviroScreen 4.0 Disadvantaged Community Score is not available for Census Tract 57.03 as it is outside California.

Table 6-3. Existing Environmental Burden Indicators in the Analysis Area

Environmental Indicator	Census Tract 103; San Bernardino County; California State Percentile Rank	Census Tract 57.03; Clark County; Nevada State Percentile Rank
Pollution and Sources		
Particulate Matter ($PM_{2.5}$)	0	3
Ozone	51	9
Nitrogen Dioxide (NO_2)	3	3
Diesel Particulate Matter	7	10
Toxic Releases to Air	5	4
Traffic Proximity and Volume	3	9
Lead Paint Indicator	43	71
Superfund Proximity	62	0
Risk Management Plan Proximity	19	52
Hazardous Waste Proximity	2	6
Underground Storage Tanks Indicator	99	24
Wastewater Discharge Indicator	59	53

Environmental Indicator	Census Tract 103; San Bernardino County; California State Percentile Rank	Census Tract 57.03; Clark County; Nevada State Percentile Rank
Drinking Water Non-Compliance	99	95
CalEnviroScreen 4.0 Disadvantaged Community Score	75	NA

Source: Public Environmental Data Partners (2026); OEHHA (2026)

Note: $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

The Drinking Water Non-Compliance indicator is a weighted measure of violations by community water systems aggregated to block groups.

Underground Storage Tanks Indicator is a measure of proximity to underground storage tanks using data from the USEPA's Office of Underground Storage Tanks.

CalEnviroScreen 4.0 Disadvantaged Community Score is "a science-based method for identifying impacted communities by taking into consideration pollution exposure and its effects, as well as health and socioeconomic status, at the census-tract level" (OEHHA 2021). The overall score takes into account pollution burden and population characteristics.

The CWP excludes areas outside of a community planning area or unincorporated sphere of influence from Environmental Justice Focus Areas, as such lands are typically unpopulated, surrounded by federally or state-owned land, and planned for open space, resource, and land management (PlaceWorks 2022). The nearest Environmental Justice Focus Area is in the Baker Community Planning Area, more than 50 miles west of the mine site (County of San Bernardino 2022b).

6.3.2 Impact Analysis

The analysis of potential impacts on disadvantaged communities relies on the assessments and determinations contained within the individual resource analyses reported in Chapter 4, *Environmental Impact Analysis*. Table 6-4 summarizes impact conclusions from the resource sections and discusses the potential for impacts to disproportionately impact disadvantaged communities.

Table 6-4. Existing Environmental Burden Indicators in the Analysis Area

Resource Area / EIR Section	Summary of Impact Conclusions	Potential for Disproportionate Impacts
Aesthetics / Section 4.1	No substantial adverse impacts.	No substantial adverse impacts and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.
Agriculture and Forestry Resources / Section 4.2	No substantial adverse impacts.	No substantial adverse impacts and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.

Resource Area / EIR Section	Summary of Impact Conclusions	Potential for Disproportionate Impacts
Air Quality / Section 4.3	With implementation of mitigation measures, criteria air pollutant emissions would be reduced during the construction period and during operational activities. However, emissions of volatile organic compounds (VOC), nitrogen oxides (NO_X), carbon monoxide (CO), particulate matter 10 microns or less in diameter (PM_{10}), and particulate matter 2.5 microns or less in diameter ($PM_{2.5}$) would likely continue to exceed the applicable Mojave Desert Air Quality Management District (MDAQMD) significance thresholds during Project construction or operation, and impacts would be significant and unavoidable. The proposed Project would not expose sensitive receptors to substantial pollutant concentrations. The proposed Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	Emissions of VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$ may exceed the applicable MDAQMD significance thresholds during Project construction or operation, leading to significant and unavoidable impacts; however, due to the relatively unpopulated area surrounding the Project Area, sensitive receptors would not be exposed to substantial pollutant concentrations, and the nearest Environmental Justice Focus Area is more than 40 miles from any Project activity and more than 50 miles from the Mine Area. Exceedance of the MDAQMD thresholds represents a significant and unavoidable impact over the entire MDAQMD. The MDAQMD includes the northern and eastern portions of San Bernardino County and the eastern portion of Riverside County in California and is comprised of a mix of communities designated as disadvantaged and communities not designated as disadvantaged (OEHHA 2026). There is the potential for disproportionate impacts on disadvantaged communities due to the exceedance of MDAQMD significance thresholds.
Biological Resources / Section 4.4	The proposed Project would not have a substantial adverse effect on any species identified as a candidate, sensitive, or special status species. Implementation of mitigation measures would reduce Project construction and operation impacts to surface aquatic resources, and impacts would be considered less than significant.	Impacts to biological resources would be less than significant with the implementation of mitigation measures, and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.
Cultural and Tribal Cultural Resources / Section 4.5	Implementation of mitigation measures would reduce impacts to less than significant.	Tribal cultural resources impacts fall disproportionately on Native American populations, and impacts would be less than significant with the implementation of mitigation measures.
Energy / Section 4.6	No substantial adverse impacts.	No substantial adverse impacts and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.
Geology, Soils, and Mineral Resources / Section 4.7	Implementation of mitigation measures would reduce impacts to less than significant.	Impacts to geology, soils, and mineral resources would be less than significant with the implementation of mitigation measures, and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.
Greenhouse Gas Emissions / Section 4.8	Implementation of mitigation measures would reduce impacts to less than significant.	Impacts related to greenhouse gas emissions would be less than significant with the implementation of mitigation measures, and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.
Hazards and Hazardous Materials / Section 4.9	No substantial adverse impacts.	No substantial adverse impacts and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.
Hydrology and Water Quality / Section 4.10	No substantial adverse impacts.	No substantial adverse impacts and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.

Resource Area / EIR Section	Summary of Impact Conclusions	Potential for Disproportionate Impacts
Land Use and Planning / Section 4.11	No substantial adverse impacts.	No substantial adverse impacts and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.
Noise and Vibration / Section 4.12	No substantial adverse impacts.	No substantial adverse impacts and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.
Population and Housing / Section 4.13	No substantial adverse impacts.	No substantial adverse impacts and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.
Public Services, Utilities, and Service Systems / Section 4.14	No substantial adverse impacts.	No substantial adverse impacts and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.
Transportation and Recreation / Section 4.15	No substantial adverse impacts.	No substantial adverse impacts and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.
Wildfire / Section 4.16	No substantial adverse impacts.	No substantial adverse impacts and impacts would not likely fall disproportionately on disadvantaged or overburdened populations.

6.3.3 Conclusions

Communities within the Environmental Justice Analysis Area have higher proportions of their population with low incomes than their respective states and counties. Additionally, Census Tract 103 in San Bernardino County, where the mine site is located, is designated as a Disadvantaged Community. Low-income and overburdened populations may have a higher susceptibility to environmental impacts due to higher rates of underlying health conditions, increased levels of existing pollutants, or limited resources available to avoid or mitigate impacts; however, the Project Area is in largely unpopulated areas surrounded by open space where impacts on populations would be minimal. Analysis of the potential impacts of the proposed Project described in Chapter 4, *Environmental Impact Analysis*, for their potential to disproportionately impact disadvantaged communities (see Section 6.3.2, *Impact Analysis*) identified one area of potential disproportionate impact due to exceedance of Mojave Desert Air Quality Management District (MDAQMD) thresholds. The MDAQMD covers a large area, so while air quality conditions are in nonattainment status, local conditions in the Environmental Justice Analysis Area as shown in Table 6-3 do not indicate a relatively high existing environmental burden for the air quality indicators. Additional analysis in Section 4.3, *Air Quality*, concludes that sensitive receptors would not be exposed to substantial pollutant concentrations from Project activities due to the distance to the nearest receptors. Overall impacts on air quality in the MDAQMD would affect large areas that are not considered disadvantaged communities in addition to the areas that are considered disadvantaged communities. Therefore, disproportionately high and adverse impacts on disadvantaged or overburdened populations are not expected.

CHAPTER 7. REFERENCES AND REPORT PREPARATION

7.1 GENERAL REFERENCES

7.1.1 Project Description

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7.2 RESOURCE AREA REFERENCES

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7.3 REPORT PREPARATION

This EIR has been prepared by SWCA Environmental Consultants, in association with the County of San Bernardino (CEQA Lead Agency), and SWCA Environmental Consultants.

7.3.1 CEQA Lead Agency

County of San Bernardino
Land Use Services Department – Planning Division
385 North Arrowhead Avenue, First Floor
San Bernardino, CA 92415-0187
Derek Newland, Planner II

7.3.2 SWCA Environmental Consultants

SWCA Environmental Consultants
320 North Halstead Street, Suite 120
Pasadena, CA 91107
Jessica Cleavenger, Project Manager

7.4 EIR PREPARERS

The following is a list of individuals responsible for the preparation of the EIR.

Responsibilities	EIR Preparer
Lead Agency, Planning Manager	Gina Gibson Williams, Planning Manager, County of San Bernardino
Lead Agency, Project Manager	Derek Newland, Planner II, County of San Bernardino
Lead Agency, Geologist	Dan Walsh, Project Manager, County of San Bernardino
Lead Agency, Land Use Coordinator	Jonathan Hagman, Land Use Coordinator, County of San Bernardino
Planning Consultant	David Mack, Planning Manager, Harris & Associates – EPC Planning
Environmental Consultant, Project Manager	Melissa Arnold, Team Lead, SWCA Environmental Consultants
Environmental Consultant, Associate Project Manager	Shelbey Isi, Associate Project Manager, SWCA Environmental Consultants
Environmental Consultant, CEQA Project Manager	Jessica Cleavenger, Senior Environmental Planner, SWCA Environmental Consultants