Eagle Crest Energy Gen-Tie and Water Pipeline

Environmental Assessment and Draft California Desert Conservation Area Plan Amendment

BLM Case File No. CACA-054096
BLM-DOI-CA-D060-2016-0017-EA

BUREAU OF LAND MANAGEMENT
California Desert District
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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
California Desert District
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553

October 7, 2016

Dear Reader:

Enclosed for your review is the Environmental Assessment (EA) for the proposed right-of-way (ROW) and associated California Desert Conservation Area Plan (CDCA) Draft Plan Amendment (PA) for the Eagle Crest Energy Gen-Tie and Water Supply Pipeline (Project). The Project is part of a larger project licensed by the Federal Energy Regulatory Commission (FERC) in 2014, located in Riverside County, CA. The Bureau of Land Management (BLM) prepared this EA in fulfillment of its separate responsibilities under the National Environmental Policy Act of 1969 (NEPA) and the Federal Land Policy Management Act of 1976 (FLPMA).

The Federal Energy Regulatory Commission's Environmental Impact Statement for the Eagle Mountain Pumped Storage Project

This Project is part of a hydropower project, called the Eagle Mountain Pumped Storage Project, which was subject to licensing under the Federal Power Act (FPA) under the jurisdiction of FERC. Pursuant to FPA Section 24, upon application for a FERC License, the federal land managed by BLM was withdrawn for FPA power project purposes. FERC prepared an Environmental Impact Statement (EIS) for the entire Project including the federal lands managed by BLM. The Draft EIS (DEIS) was issued on December 23, 2010 and subject to public comment. Various parties, including the U.S. Department of the Interior (Interior), Kaiser Eagle Mountain, LLC (Kaiser), and the Desert Protection Society filed comments on the DEIS. On January 30, 2012, FERC issued a Final EIS (FEIS) for the Project. The Project was licensed, as proposed and modified by FERC conditions, on June 19, 2014.

During the FERC licensing process, FERC also complied with requirements of the Endangered Species Act (ESA) and pursuant to ESA 7(a)(2), consulted with the U.S. Fish and Wildlife Service (USFWS) on potential impacts to the federally-listed desert tortoise. On April 10, 2012, USFWS issued a Biological Opinion (BO) that included measures to minimize incidental take of the desert tortoise. FERC also complied with the National Historic Preservation Act (NHPA) 106 process including consultation with interested Tribes and completion of a Historic Properties Management Plan (HPMP) and associated Programmatic Agreement with the California State Historic Preservation Office (SHPO). In addition, the State Water Resources Control Board (State Water Board) issued a Clean Water Act Section 401

certificate with environmental conditions, which was filed with FERC in July, 2013. FERC incorporated the applicable State Water Board environmental conditions into the License.

BLM participated in the FERC licensing process and filed comments on the DEIS and FEIS. On May 8, 2013, FERC staff held a public meeting in Palm Desert, California with BLM to discuss and resolve BLM's comments on the FEIS and issues associated with land withdrawals under Section 24 of the FPA. A summary of the meeting is included in FERC's public record for the proceeding, available at the FERC eLibrary and the case file for this Project.

After FERC issued the License for the hydropower project (June 19, 2014), Interior, Kaiser, and the Desert Protection Society filed requests for rehearing of the License Order. Kaiser subsequently withdrew its request for rehearing. The remaining requests for rehearing were denied by FERC. (FERC, *Order Denying Rehearing and Denying Stay,* October 15, 2015). FERC found, based on the information reviewed during the NEPA process, that the FEIS contained sufficient analysis and mitigation measures to support the licensing decision. This decision was not challenged.

The FERC FEIS is available for public review and inspection online or at BLM's California Desert District office, located at 22835 Calle San Juan De Los Lagos, Moreno Valley, CA 92553.

BLM Right-of-Way Application for the Project

The portions of the Project that include federal lands administered by the BLM require issuance of a FLPMA Title V ROW grant and BLM compliance with NEPA. In March 2009, Eagle Crest Energy Company (Applicant or Eagle Crest) submitted to BLM an SF-299 (1/2006) "Application for the Transportation and Utility Systems and Facilities on Federal Lands" for a ROW for a gen-tie line from the hydropower project to Southern California Edison's Red Bluff substation (located on federal land), a water supply pipeline from wells (located on private land) and for federal lands in the Central Project Area. The CDCA Plan, as amended, requires that newly proposed utilities that are not already located in an existing designated utility corridor be considered through the plan amendment process. Some of the application area is not identified within an existing utility corridor, therefore, a plan amendment is required. This EA acts as the mechanism for complying with NEPA, and with CDCA requirements for the proposed plan amendment.

The Project would be on approximately 1,150 acres of BLM-managed land and approximately 1,377 acres of private land. Of the 1,150 acres of BLM-managed land, 507 acres are in the 16-mile gen-tie line alignment; 154 acres are in the water supply pipeline alignment and other Project facilities outside the Central Project Area; and approximately 489 acres are within the Central Project Area of the hydropower Project.

BLM's NEPA analysis of the Project ROW and PA is limited to the specific ROW and PA decisions and will neither duplicate the FERC FEIS nor revisit FERC's decision to License the Project.

BLM EA for Project Tiering to the FERC FEIS

The FERC FEIS analyzed the Project ROW on federal lands and made a decision to issue the License. The Council for Environmental Quality NEPA regulations, and the BLM's NEPA Handbook allow BLM to tier to existing NEPA to reduce redundant analysis and "*allow [the BLM] to narrow the scope of subsequent analysis, and focus on the issues that are ripe for decision-making*." (BLM NEPA Handbook, H-1790-1 (2008), Section 5.2 (2008). As explained in BLM's NEPA Handbook, *"[t]iering is using the coverage of general matters in broader NEPA documents in subsequent narrower NEPA documents*." (NEPA Handbook, H-1790-1 (2008), Section 5.2.2). Further, *"[a]n environmental assessment prepared in support of an individual proposed action can be tiered to a programmatic or other broader-scope environmental impact statement*." (43 CFR 46.140(c)). Here, BLM prepared this EA in support of its ROW and PA decisions, and it tiers to the entirety of a broader-scope EIS, *i.e.*, FERC's FEIS. In the tiered document (ROW EA), BLM focuses on those issues and mitigation measures specifically relevant to the narrower action (ROW Grant) but not analyzed in the larger document (FERC FEIS) in sufficient detail to support BLM's ROW and PA decisions.

Scoping for this EA was initiated on November 25, 2015.[1] In addition to tiering to the FERC FEIS to analyze BLM's consideration of the issuance of a ROW and PA, BLM is supplementing that analysis with additional information developed subsequent to completion of the FEIS. In preparation of this EA, BLM management and technical staff have reviewed and considered the FERC FEIS and License; the FERC decision in the *Order Denying Rehearing* (October 15, 2015); the several License-required resource plans already developed in consultation with BLM and other agencies; the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA) (BLM, 2016) and FEIS (BLM, 2015). BLM has also undertaken additional analyses and complied with other procedural responsibilities.

These include:

- **NHPA Section 106 Consultation.** BLM completed its own NHPA Section 106 consultation process for the ROW and PA with interested Tribes and SHPO in August of 2015 which included a review of the existing HPMP and Programmatic Agreement with SHPO for the FERC licensed project.

[1] BLM, *Notice of Intent (NOI) to Amend the Resource Management Plan for the California Desert Conservation Area and Prepare an Associated Environmental Assessment for the Plan Amendment and the Eagle Crest Pumped Storage Project, California, 80 Federal Register 73815* (November 25, 2015).

- **ESA Section 7 Consultation with USFWS.** BLM, in an ESA Section 7 informal consultation process, consulted with USFWS on the requirements of the USFWS Biological Opinion (2012) for the FERC licensed project and conducted a joint site tour of the Central Project Area on April 13, 2016. Supplemental biological surveys for desert tortoise, as required by USFWS in the BO, were conducted in the Central Project Area in May, 2016. BLM will be a cooperating agency with FERC and USFWS on re-initiating the consultation process as necessary.

- **Updated Assessment of Cumulative Groundwater Effects in the Chuckwalla Basin.** BLM conducted an updated assessment of potential groundwater effects from the Project in the Chuckwalla Basin. When the FERC FEIS was prepared, an estimated 14 solar projects were planned with total cumulative water use estimates of about 17,742 acre-feet for construction plus 2,506 acre-feet per year during operation. Since that time, many of these proposed solar projects have been withdrawn. In addition, water usage estimates were lowered to reflect the cancellation of the Eagle Mountain landfill project and a revised schedule for the timing of the Project. A revised water balance calculation was developed based on these changes in water use.

- **Consideration of the DRECP FEIS.** The BLM DRECP FEIS was published in December 2015 and Record of Decision was signed in September 2016. The DRECP analyzes planning allocations and Conservation Management Actions (CMAs) for more than 10 million acres of federal land including the Project Area. The DRECP is an amendment to the CDCA and changes the land use allocations in the CDCA. Proposed actions within the DRECP boundary are required to conform to the DRECP. The FERC-issued License is a "valid existing right" to which the DRECP is "subject."[2] To the extent that DRECP planning allocations and CMAs do not prevent, or unreasonably interfere with, the FPA purposes for these lands as licensed, BLM has analyzed the application of these planning allocations and CMAs in this draft EA. BLM has compared the FERC License requirements with the DRECP planning allocations and CMAs to assess the Project's compliance with these DRECP objectives (Appendix A, Crosswalk). This has resulted in the identification of additional measures that BLM may add as conditions of the ROW grant (Table 4-6).

We are pleased to provide this copy of the Draft Plan Amendment/EA for the Eagle Crest Energy Gen-tie and Water Pipeline Project right-of-way for your review, and extend our appreciation for your cooperation and assistance during this process.

This is a Draft Plan Amendment/EA that will be available for public comment for a period of 30 days from the date of publication on the BLM's ePlanning website. After the comment period

[2] DRECP LUPA/FEIS, Glossary of Terms at 17. *See also* FLPMA Section 701(h), 43 CFR § 1610.5-3 and BLM Land Use Planning Handbook, H-1601-1 (2005), pp. 19 and 28.

has closed, the BLM will compile public comments and address those comments that show substantive content. The BLM will then publish the Proposed Plan Amendment/EA and Draft Decision Record (DR) for the ROW. The Proposed Plan Amendment will have a 30-day protest period. Prior to the DR becoming final, all protests must be resolved. Instructions on how to file a protest will included in the publication of the Proposed Plan Amendment/EA.

Unlike the planning decision, implementation decisions included in this Draft PA/EA are not subject to protest under the BLM planning regulations, but are subject to an administrative review process, through appeals to the Office of Hearings and Appeals (OHA), Interior Board of Land Appeals (IBLA) pursuant to 43 CFR, Part 4, Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations once the BLM resolves the protests to land use planning decisions and issues DR.

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ACRONYM LIST

ACHP	Advisory Council on Historic Preservation
ACEC	Areas of Critical Environmental Concern
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee
Applicant	Eagle Crest Energy Company
BLM	Bureau of Land Management
BO	Biological Opinion
CARB	California Air Resources Board
CDCA Plan	California Desert Conservation Area Plan
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife (formerly named the California Department of Fish and Game, or CDFG)
CEC	California Energy Commission
CMA	Conservation Management Actions
CESA	Cumulative effects study area
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Commission	Federal Energy Regulatory Commission
County Sanitation District	County Sanitation District No. 2 of Los Angeles County
dBA	decibel scale
Decommissioning Plan	Decommissioning and Reclamation Plan
DEIS	Draft Environmental Impact Statement
Desert Protection Society	Citizens for the Chuckwalla Valley
DLA	Draft License Application
DOI	U.S. Department of the Interior
DR	Decision Record
DRECP	Desert Renewable Energy Conservation Plan
DSSF	Desert Sunlight Solar Farm
DTC/C-AMA	Desert Training Center/California-Arizona Maneuver Area

DWMA	Desert Wildlife Management Area
EA	Environmental Assessment
Eagle Crest	Eagle Crest Energy Company
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEIR	Final Environmental Impact Report (CA)
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy Management Act of 1976
FPA	Federal Power Act
g	Acceleration due to Earth's gravity
gen-tie line	Generation interconnection transmission line
GHG	Greenhouse gases
HPMP	Historic Properties Management Plan
HU	Hydrologic Units
I-10	Interstate 10
Interior	U.S. Department of the Interior
Kaiser	Kaiser Eagle Mountain, LLC
kV	kilovolt
Licensee	Eagle Crest Energy Company
LUPA	Land Use Plan Amendment
Metropolitan Water District	Metropolitan Water District of Southern California
mg/L	Milligrams per Liter
Mine Reclamation	Mine Reclamation, LLC
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
msl	Mean sea level
MUCs	Multiple-use classes
MW	Megawatt
NCL	California Desert National Conservation Lands
NECO Plan	Northern and Eastern Colorado Desert Coordinated Management Plan
NERC	North American Electric Reliability Council

NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NOI	Notice of Intent
NOP	Notice of Preparation
NO_x	nitrogen oxides
NPS	National Park Service
	National Register of Historic Places
OHV	off-highway vehicle
PA	Plan Amendment
PAD	Pre-application Document
PGA	Peak ground acceleration
pH	measure of acidity or alkalinity
PMF	Probable Maximum Flood
Project	Eagle Mountain Pumped Storage Hydroelectric Project, FERC Project Number P-13123
PM	Particulate matter
RCEDA	Riverside County Economic Development Agency
ROD	Record of Decision
ROW	Right-of-way
RPS	California's Renewable Energy Portfolio Standard
SB	Senate Bill, California
SBCM	San Bernardino County Museum
SCAQMD	South Coast Air Quality District
SCE	Southern California Edison
SCEC	Southern California Earthquake Center
SD1	Scoping document
SD2	Revised scoping document
SHPO	California State Historic Preservation Office
SR 177	State Route 177
State Water Board	State Water Resources Control Board
TCPs	Traditional cultural properties
THPO	Tribal Historic Preservation Officer
TLP	Traditional Licensing Process
USFWS	U.S. Fish and Wildlife Service

USGS	U.S. Geological Survey
VER	Valid Existing Right
VRM	Visual Resource Management
WEAP	Worker Environmental Awareness Program

CHAPTER 1:
INTRODUCTION

1.1 Project Overview

The Eagle Crest Energy Company has applied for a Right-of-Way (ROW) for a gen-tie line and water supply pipeline project (Project) on approximately 9,862.5 acres of Bureau of Land Management (BLM) managed lands. The Project is located at the edge of the Eagle Mountains in southeastern California, Riverside County, near the town of Desert Center, in the western Sonoran Desert. The Project is located between 1.5 and 2 miles from the Joshua Tree National Park, within the 25-million acre California Desert Conservation Area (CDCA) of which about 12 million acres are public lands managed by the BLM. The CDCA Plan was first developed in 1980 to provide for the use and protection of the desert's natural, cultural, and aesthetic resources. Activities on BLM-managed public lands must conform to the approved land uses as described in the CDCA Plan and its amendments (BLM, 1999).

The Project is part of a larger project licensed by the Federal Energy Regulatory Commission (Commission or FERC) in 2014, located in Riverside County, CA. The federal lands within the FERC-licensed project boundary were withdrawn by FERC for power purposes pursuant to Section 24 of the Federal Power Act (FPA). The purposes of the withdrawal are for the Eagle Mountain Project; a pumped storage hydroelectric project (FERC Project Number P-13123) which was licensed to Eagle Crest Energy Company (Applicant or Eagle Crest) by the FERC on June 19, 2014.

The Project is also located within the Desert Renewable Energy Conservation Plan (DRECP)[3] (BLM, 2016) area, some of which are designated in the DRECP as Areas of Critical Environmental Concern (ACEC), Development Focus Areas (DFA), and General Public Lands (GPL) (Figure 1-1). These designations allow electric transmission to occur in designated corridors. The generation interconnection transmission line (gen-tie line) and water supply pipeline routes approved in the FERC License are only partially within a designated corridor (Figure 1-2) and therefore require a CDCA Plan Amendment (PA). The gen-tie alignment is adjacent to an existing gen-tie line owned and operated by Southern California Edison (SCE).

Utility routes both outside of and within designated corridors on BLM-managed lands require authorization of a right-of-way (ROW) grant from BLM. A ROW grant is an authorization to use

[3] The DRECP is an amendment to the CDCA, and therefore the Plan Amendment required for this proposed ROW action includes an amendment to the CDCA and an amendment to the DRECP.

a specific piece of a public land for a specific project for a specific period of time. Eagle Crest's application for a ROW grant will be processed under Federal Land Policy and Management Act (FLPMA) Title V and BLM's ROW regulations, 43 Code of Regulations (CFR) Part 2800. In reviewing a ROW application, BLM will consider all Project information, existing land use information and potential environmental effects.

The purpose of this Environmental Assessment (EA) is to evaluate the potential environmental effects of the proposed ROW and PA for the requested uses on BLM-managed lands to determine whether an environmental impact statement (EIS) is required and to consider mitigation measures for potential Project impacts, consistent with BLM policy and the Presidential Memorandum on Mitigation (BLM 2013; White House, 2015). The EA will also be used as a basis for subsequent decision-making regarding whether to deny the requested ROW and PA, grant the ROW and PA, or grant the ROW and PA with modifications. The EA assesses conformance with the CDCA Plan and its amendments, including the need for a PA for those portions of the Project that lie within BLM-managed lands and are outside of existing designated corridors.

This EA tiers to the entire FEIS for Hydropower License, Eagle Mountain Pumped Storage Project – FERC Project No. 13123-002, California, prepared by the FERC (FERC/FEIS-F-0238), January 2012. The FERC FEIS analyzes the environmental effects associated with licensing, constructing, and operating the proposed 1,300-megawatt (MW) Project on private and federal land, which federal land was withdrawn for power purposes by FERC pursuant to the FPA, Section 24. 16 U.S.C. § 818. The FERC FEIS includes assessment of two alignment alternatives; evaluation of the direct, indirect, and cumulative effects to resources; and actions required to avoid, minimize, and mitigate these effects. When mitigation measures are identified in the FERC FEIS, a residual effects analysis is provided. In addition, subsequent to preparation of the FEIS, FERC approved a federal License for the Project containing environmental protection measures specified in the License Articles. These have also been reviewed and evaluated for purposes of this EA.

This EA includes the document name and page numbers of the sections of the FEIS to which this EA tiers, as well as a summary of the material and description of how it relates to the referenced, specific action at hand. It also cites the specific FERC License Articles pertaining to specific resource topics.

In addition to tiering[4] to the FERC Final EIS (FEIS) and consideration of License Articles, BLM is supplementing the information contained in those documents with additional information

[4] "Tiering" is defined in Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) regulations as "*the coverage of general matters in broader environmental impact statements . . .with subsequent narrower statements [EIS] or environmental analyses [EA] . . . incorporating by reference the general discussions*

developed subsequent to the completion of the FEIS. This information includes the DRECP FEIS land allocations and Conservation Management Actions (CMAs); the BLM National Historic Preservation Act (NHPA) Section 106 and Endangered Species Act (ESA) Section 7 consultation processes; the FERC License-required natural resource management plans; and an updated assessment of the potential groundwater effects from the Project in the Chuckwalla Basin.

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and concentrating solely on the issues specific to the statement subsequently prepared." 40 CFR § 15081598.28. "Tiering" is authorized in SOI's NEPA regulations (43 CFR § 46.140) and described in BLM National Environmental Policy Act (NEPA) guidance as an appropriate "*. . . when doing so would build on work that has already been done, avoid redundancy, and provide a coherent and logical record of the analytical and decision-making process*." BLM, NEPA Handbook at 21 (BLM, 2008).

Figure 1-1: DRECP Land Use Classifications in the Area of the Eagle Mountain Pumped Storage Project.

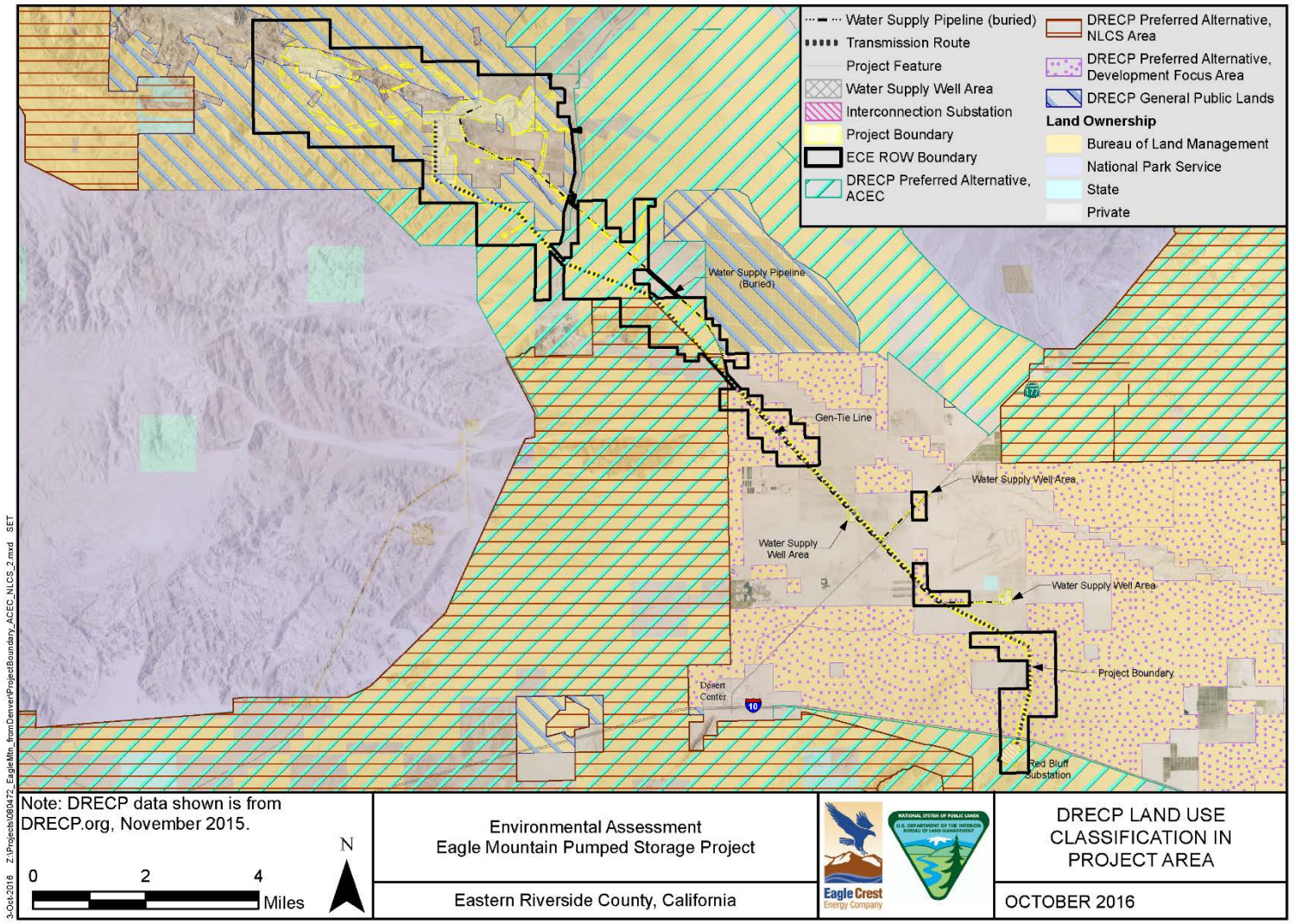
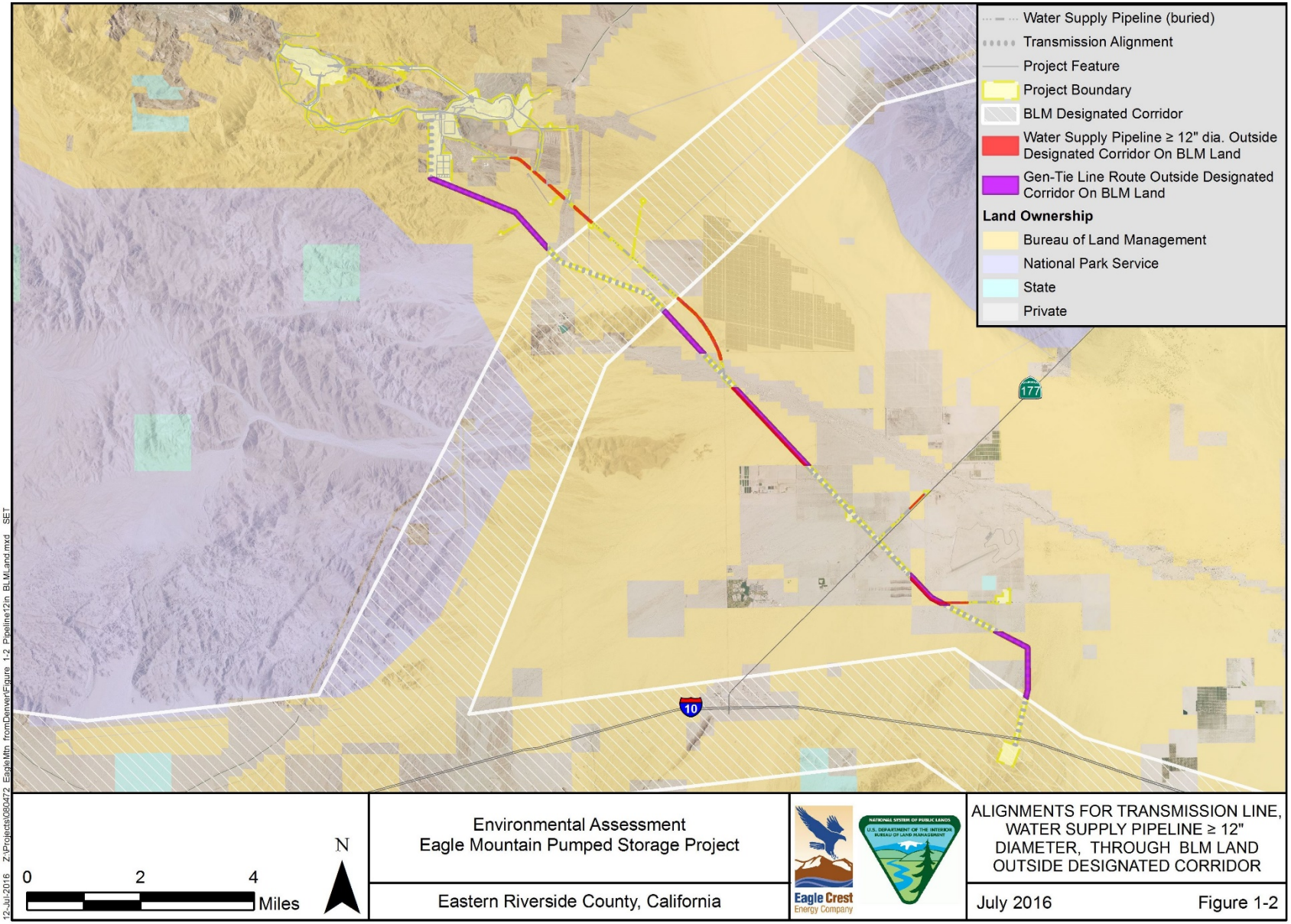


Figure 1-2: Areas of the Gen-Tie Line and Water Supply Pipeline Outside of the Designated Corridors.



1.1.1 *Agency Roles and Responsibilities*

The Project is located, in part, on federal lands managed by the BLM. The BLM is preparing this EA in compliance with the National Environmental Policy Act (NEPA), FLPMA, and applicable regulations to inform the public about the Project, and BLM's review of the proposed ROW and CDCA PA.

FERC, pursuant to the FPA and the U.S. Department of Energy Organization Act, is authorized to issue licenses for up to 50 years for the construction and operation of nonfederal hydroelectric development subject to its jurisdiction. Pursuant to FPA Section 24, upon application the federal lands in the Project area were withdrawn and reserved for power purposes. 16 U.S.C. § 818. BLM regulations recognize that "*…the filing of an application for a power project with [FERC] withdraws the lands covered by the application from the operation of the public land laws . . . [and] [l]ands withdrawn under section 24 of the Federal Power Act remain withdrawn until the withdrawal is vacated and the lands opened by the proper authority* [FERC or Congress]" 43 CFR § 2091.5-5 and 43 CFR subpart 2320. FERC issued an Order Issuing Original License (FERC License) for the Eagle Mountain Pumped Storage Project, Project Number 13123-002, on June 19, 2014.

Section 10(a)(2)(C) of the FPA requires FERC to consider the electricity consumption improvement programs of Eagle Crest, including its plans, performance, and capabilities for encouraging or assisting its customers to conserve electricity cost-effectively, taking into account the published policies, restrictions, and requirements of state regulatory authorities. As an independent power producer, Eagle Crest will sell the Project's power to a local power provider rather than end-users. Therefore, Section 161 of the FERC License (2014) found that, given the limits of its ability to influence end-users of the electricity generated by the Project, Eagle Crest will comply with Section 10(a)(2)(C) of the FPA.

Sections 4(e) and 10(a)(1) of the FPA require FERC,

> *…to give equal consideration to the power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued shall be such as in the FERC's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses.*

As stated in Section 168 of the FERC License, "*…the decision to license this Project, and the terms and conditions included herein, reflect this consideration.*"

The FLPMA Title V allows the BLM, "*…to grant, issue or renew rights-of-way over, upon, under or through* [public lands] *for…systems for generation, transmission, and distribution of electric energy, except that the applicant shall also comply with all applicable requirements of the* [FERC]

under the [FPA]…" The role of BLM, as to the public lands for which a ROW and PA, is to make a ROW and PA decision in accordance with NEPA, including the requirement of NEPA to take a "*hard look*" at the environmental impacts of the proposed action, FLPMA, including its direction to avoid "*unnecessary damage to the environment*" in the issuance of a ROW grant 43 U.S.C. § 1765(a)(4), and other applicable laws, such as the ESA and NHPA.

1.2 Purpose and Need

1.2.1 *BLM Purpose and Need*

NEPA regulations promulgated by the Council on Environmental Quality (CEQ) state that an environmental assessment's purpose and need section, "*…shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.*" 40 CFR §1502.13. The following discussion sets forth the BLM's purpose and need for the action.

The BLM's purpose and need for the Eagle Crest Energy Gen-tie and water pipeline Project is to respond to the Applicant's application under Title V of the FLPMA (43 U.S.C. §1761(a)(4)) for a ROW grant to construct, operate, maintain, and decommission a 500-kilovolt (kV) transmission line, a water supply pipeline, and components of a pumped storage project on public lands in compliance with FLPMA, BLM ROW regulations, and other applicable federal laws. In accordance with FLPMA of 1976 Section 103(c), public lands are to be managed for multiple uses, taking into account the long-term needs of future generations for renewable and non-renewable resources. The Secretary of the U.S. Department of the Interior (Interior) is authorized to grant ROWs on public lands "*…for systems for generation, transmission, and distribution of electric energy…*" (FLPMA Section 501[a][4]). Taking into account BLM's multiple-use mandate, the purpose of and need for this action is to respond to a FLPMA ROW application submitted by Eagle Crest, to construct, operate, maintain, and decommission a gen-tie line and water supply pipeline on public lands administered by the BLM in compliance with the FLPMA, BLM ROW regulations, and other applicable federal laws and policies.

In conjunction with the FLPMA, the BLM's applicable authorities are as follows:

- Executive Order 13212, dated May 18, 2001, which mandates that, "*…agencies act expediently and in a manner consistent with applicable laws to increase the production and transmission of energy in a safe and environmentally sound manner.*"

- Secretarial Order 3285A1, dated February 22, 2010, which establishes the development of renewable energy as a priority for the Interior.

- Department of Interior Memorandum of Understanding (MOU) with California (2009) to expedite the permitting of renewable energy facilities in the state through inter-governmental coordination and the development of what is now the DRECP. The MOU states, that

renewable energy projects "also contribute to the state's climate change goals of reducing greenhouse gases (GHGs) to 1990 levels by 2020 and 80 percent below 1990 emissions levels by 2050, making the success and expansion of California's Renewable Energy Portfolio Standard (RPS) energy generation a key priority for California's economic and environmental future." California has enacted renewable resource goals to increase the percentage of renewable resource generation to 33 percent by 2020 (Senate Bill [SB] X1-2) and 50 percent by 2030 (SB 350). In 2010, California enacted legislation to encourage the procurement and development of energy storage in the state (Assembly Bill 2514).

1.2.2 *Decisions to be Made by the BLM*

The BLM will decide whether to deny the requested ROW, grant the ROW, or grant the ROW with modifications. The BLM may include terms, conditions, and stipulations it determines to be in the public interest, which may include modifying the proposed use or changing the route or location of the proposed facilities, (43 CFR § 2805.10[a][1]). If the BLM approves the ROW, the approval will include the gen-tie and water supply pipeline alignments, and lands near the Central Project Area that are within the approved design option. As a related action, the BLM will also decide whether to approve the PA to the CDCA Plan for allowing the gen-tie line and water supply pipeline outside of a designated corridor. If approved, the PA would state, "The transmission line and the pipeline are allowed outside of the designated corridor."

1.2.3 *Applicant's Purpose for the Project*

Eagle Crest Energy's purpose for the Gen-tie and Water Pipeline ROW Project is to connect a FERC-licensed hydroelectric pumped storage project to the southern California utility system electrical grid. The ROW project covered under this EA is only a relatively small portion of the pumped storage project and is the only portion covered under this EA.

Eagle Crest's purpose for the FERC-licensed Pumped Storage Project is to provide energy, capacity, and ancillary services to the California-South sub-region of the statewide electrical grid system in both the short and long term. This Project is capable of providing unique benefits that support the integration of new renewable resources facilities to meet California's Renewable Energy Portfolio Standard (RPS) goals, therefore contributing to attainment of state goals for reduction of emissions of greenhouse gases.

For a more detailed description and purpose for the FERC-licensed pumped storage project, see the Final Environmental Impact Statement (FEIS) for Hydropower License, Eagle Mountain Pumped Storage Project – FERC Project No. 13123 002, California, prepared by the FERC (FERC/FEIS-F-0238), January 2012.

1.3 Issue Scoping

For the gen-tie line and water supply pipeline ROW, a "*Notice of Intent (NOI) to Amend the Resource Management Plan for the California Desert Conservation Area and Prepare an Environmental Assessment for the Plan Amendment and Eagle Crest Pumped Storage Project*" was published in the Federal Register on November 25, 2015. The BLM received over 2,000 comments on the NOI. These comments are listed in the Scoping Report (Appendix C) of this EA.

For the FERC-licensed Pumped Storage Project, agency consultation began in September 2007, when Eagle Crest sent an initial contact letter to all parties on the FERC initial consultation contact list and the Project mailing list. This letter provided basic Project description information and requested information and input from resource management agencies, tribes, and individuals about environmental resources that may be found in the Project area.

On January 10, 2008, Eagle Crest filed with the FERC a Notice of Intent (NOI) to file a License Application, a request to use the Traditional Licensing Process (TLP), and a Pre-application Document (PAD). A copy of the initial contact letter was included in the Eagle Mountain Project PAD (Eagle Crest Energy, 2008) and was followed-up with phone conversations and meetings with many Project stakeholders and agency representatives. Notes from those contacts were also included in the Eagle Mountain Project PAD. A Project website was established at that time, where the PAD, and all subsequent meeting notices and public documents filed with FERC, have been posted. In addition, hard copies of the PAD, NOI, and request to use the TLP were sent to libraries in the nearest surrounding communities of Desert Center, Blythe, and Indio, California for public review. A letter was also sent to all parties on the stakeholder mailing list to notify them that these documents were available for public review.

Comments on the request to use the TLP were submitted to FERC by the Metropolitan Water District of Southern California (Metropolitan Water District), Kaiser Eagle Mountain, LLC (Kaiser), and Mine Reclamation, LLC (Mine Reclamation).

FERC authorized Eagle Crest to use the TLP on March 4, 2008, and gave notice of Eagle Crest's filings on March 6, 2008. On March 7, 2008, a letter was sent to all agencies and persons on the stakeholder mailing list inviting them to the joint meeting and site visit for the Project. Notice of the joint meeting was also published in the Desert Sun, a daily newspaper of general circulation in Riverside County, California in March 2008 and filed with FERC on March 18, 2008. Notice of the joint meeting was also posted on the Eagle Crest Energy Project website. Eagle Crest held a joint meeting with interested stakeholders on April 8, 2008 and conducted a site visit the following day. Attendees at the joint meeting included representatives of: Eagle Crest; GEI Consultants, Inc.; Interior, Bureau of Reclamation; Kaiser/Mine Reclamation; Desert Communities Protection Campaign; Citizens for Chuckwalla Valley; Metropolitan Water District; California State Lands

Commission; California Department of Conservation, Office of Mine Reclamation; and California Department of Fish and Wildlife (CDFW).[5]

After the joint meeting and subsequent site visit, comments and requests for studies were accepted by Eagle Crest from any interested party until June 9, 2008. Comments were submitted by Joshua Tree National Park, Center for Community Action and Environmental Justice, Kaiser Ventures, LLC, and Lewis Brisbois Bisgaard & Smith, LLP. The PAD provided a list of studies that Eagle Crest anticipated would be needed to license the Project via the TLP. Comments on the PAD were considered when Eagle Crest developed the studies undertaken for the Project.

On June 16, 2008, Eagle Crest filed a Draft License Application (DLA) with FERC. The DLA was publically noticed, with a 90-day period in which to provide written comments on the DLA. The following entities commented on the DLA:

Commenting Agencies and Other Entities	Date
Margit F. Chiriaco Ruche	June 28, 2008
Agua Caliente Band of Cahuilla Indians	August 26, 2008
Native American Land Conservancy	August 29, 2008
County Sanitation District No. 2 of Los Angeles County	September 12, 2008
Kaiser Ventures LLC	September 12, 2008
Joshua Tree National Park	September 12, 2008
Metropolitan Water District	September 15, 2008
Tahquitz Group of the Sierra Club	September 12, 2008

FERC conducted scoping jointly with the State Water Resources Control Board (State Water Board) (lead agency for the California Environmental Quality Act [CEQA] process) to determine what issues and alternatives should be addressed in the licensing process. FERC distributed a scoping document (SD1) to interested agencies and others on December 17, 2008. FERC noticed the Scoping Meetings and Site Visit in the Federal Register on December 24, 2008. Two scoping meetings, both advertised in the Desert Sun, were held on January 15 and 16, 2009, in Palm Desert, California, to request oral comments on the Project. A court reporter recorded all comments and statements made at the scoping meetings, which subsequently became part of the FERC and the State Water Board's public record for the Project. In addition to comments provided at the scoping meetings, the following entities provided written comments on SD1:

Commenting Entity	Date Filed
Metropolitan Water District	February 10, 2009
Kaiser Ventures, LLC	February 13, 2009
Mine Reclamation, LLC	February 13, 2009

[5] Formerly named the California Department of Fish and Game, or CDFG.

Commenting Entity	Date Filed
Citizens for the Chuckwalla Valley	February 17, 2009
County Sanitation District	February 17, 2009
Riverside County Fire Department	March 5, 2009
U.S. Department of the Interior, Bureau of Reclamation	March 24, 2009

A revised scoping document (SD2), addressing these comments, was issued on by FERC June 5, 2009.

1.4 Previous FERC Environmental Review

On June 22, 2009, Eagle Crest filed an Application for an Original License with FERC.

On January 20, 2010, FERC noticed the "Application Ready for Environmental Analysis and Soliciting Comments, Recommendations, Terms and Conditions, and Prescriptions" in the Federal Register accepting the application for filing, indicating the application was ready for environmental analysis, and established a March 15, 2010 deadline for filing motions to intervene, comments, and final recommendations, terms and conditions, and prescriptions.

The Citizens for the Chuckwalla Valley (Desert Protection Society); State Water Resources Control Board; Metropolitan Water District; Kaiser; Mine Reclamation; and County Sanitation District No. 2 of Los Angeles County (County Sanitation District) filed timely motions to intervene. Eagle Crest filed responses to some of these motions.

Comments were filed by Brendan Hughes; Kaiser; Mine Reclamation; National Parks Conservation Association; Joshua Tree National Park; Metropolitan Water District; Office of the Secretary, Interior's Office of Environmental Policy and Compliance; Johnney Coon; County Sanitation District; and Timothy Anderson. Eagle Crest responded in an April 23, 2010 filing.

BLM filed comments on August 23, 2010 and Eagle Crest responded to these comments on September 15, 2010.

A draft EIS (DEIS) was prepared by FERC staff and issued on December 23, 2010, analyzing the impacts of the Project and alternatives to it. FERC set a deadline of February 28, 2011, for comments and interventions. Two public meetings on the DEIS were held in Palm Desert, California on February 3, 2011. Representatives of the BLM Palm Springs Field Office were in attendance. Phillip R. Hu filed a timely motion to intervene and U.S. Department of the Interior filed a timely notice of intervention in response to the DEIS.

The State Water Board; Center for Biological Diversity; U.S. Environmental Protection Agency (EPA); Johnney Coon; San Gorgonio Chapter of the Sierra Club; Metropolitan Water District; Philip R. Hu; JoAnn and Warren Dean; Advisory Council on Historic Preservation; Brendan Hughes; Eagle Crest; Kaiser and Mine Reclamation (jointly); Desert Protection Society; the Interior's Office of

Environmental Policy and Compliance; National Park Service (NPS), and County Sanitation District filed comments on the DEIS.

On January 30, 2012, FERC issued the FEIS. The Interior (on behalf of the NPS and BLM), EPA, County Sanitation District, Parks Conservation, and the Metropolitan Water District submitted comments on the FEIS. Eagle Crest responded to Interior's comments.

FERC staff held a public meeting with BLM on May 8, 2013, to discuss BLM's comments on the FEIS and issues associated with land withdrawals under Section 24 of the FPA. The goal of the meeting was to discuss questions raised by BLM staff concerning the Eagle Crest Project application for a FERC License under the FPA and to find a collaborative way forward for the two agencies to proceed with their respective regulatory responsibilities for all the proposed renewable energy projects in the area. A summary of this meeting was filed in the Commission's public record for this proceeding on July 16, 2013 (Hogan, 2013).

The state of California also completed comprehensive environmental review with public participation on the Project. The State Water Board, as lead agency, published a Notice of Preparation (NOP) of a Draft EIR on January 6, 2009, and certified a Final Environmental Impact Report (FEIR) and filed a Notice of Determination on July 15, 2013. In addition, the State Water Board conducted a Clean Water Act Section 401 certification review of the Project with environmental conditions which was filed with the FERC in July 2013.

FERC issued the License to Eagle Crest for the Project on June 19, 2014. Interior, Kaiser, and the Desert Protection Society, intervenors in the licensing proceeding, subsequently filed requests for rehearing of the License Order. Interior also filed a motion for a stay of the License. Kaiser subsequently withdrew their request for rehearing. The requests for rehearing by Interior and the Desert Protection Society were denied by FERC on October 15, 2015. FERC found that the FEIS contained sufficient information to support the licensing decision, and the License requirements are adequate. FERC found that ("Order Denying Rehearing and Denying Stay," 153 FERC ¶ 61,058 at 36, October 15, 2015),

> *…the existing information included in the EIS is substantial and includes reports prepared for the landfill EIS, a Biological Opinion prepared for the landfill, and historic and recent aerial photography. This information adequately supports the facts found and the conclusions reached in support of our decision to license the project. The additional information gathering and refinement of mitigation plans that will occur during the post-licensing period is not essential to our licensing decision, but rather will enable the licensee to better develop and implement the required mitigation plans.*

Neither Interior nor the Desert Protection Society challenged FERC's decision.

1.5 FERC License Requirements for Environmental Protection

Pursuant to requirements imposed by the FERC License, the BLM, USFWS, NPS, and multiple state agencies have been participating in a consultation and review process for the development of resource management plans. BLM has been a participant in the development natural resources protection plans. The plans required by the FERC License, and the status of those plans as of October 2016 are listed in Table 1-1.

Table 1-1: Status of Natural Resource Protection Plans Required by the FERC License for the Eagle Mountain Pumped Storage Project.

Article	Requirement	Due Date	Status	FERC Approval	Link
307	Public Safety Plan	At least 60 days prior to start of construction.	To be prepared as a part of final engineering design.		
308	Owner's Dam Safety Program	Within 90 days from the issuance date of the License.	Completed and filed with FERC.	FERC letter issued, stating comments successfully addressed, March 22, 2016	Owners Dam Safety Plan - Public
309	Inflow Design Flood and Hazard Classification Study	Within 1 year of the issuance date of the License.	Completed and filed with FERC.		Inflow Design Flood and Hazard Classification Study
310	Project Modification Resulting from Environmental Requirements	At the beginning of the planning and design phase.	To be prepared as a part of final engineering design, if applicable.		
401	Site Investigation Plan	Within 6 months of License issuance.	Revised plan filed with FERC.	Approved May 17, 2016	Site Investigation Plan
402	Excavated Materials Plan	At least 90 days prior to the start of construction.	To be prepared as a part of final engineering design.		
403	Groundwater Level Monitoring Plan	Within 18 months of License issuance.	Completed and filed with FERC.	Plan approved and modified April 11, 2016	Groundwater Level Monitoring Plan
404	Groundwater Quality Monitoring Plan	Within 18 months of License issuance.	Completed and filed with FERC.	Approved and modified January 20, 2016	Groundwater Quality Monitoring Plan
405	Aquifer Testing and Seepage Management - Aquifer Testing Plan. Note that Seepage	Within 6 months of License issuance.	Completed and filed with FERC.	Approved and modified March 16, 2015	Aquifer Testing Plan

Article	Requirement	Due Date	Status	FERC Approval	Link
	Management Plan is due at a later date.				
405	Aquifer Testing and Seepage Management - Seepage Management and Monitoring Plan	At least 6 months prior to initial reservoir fill.	To be prepared as a part of final engineering design.		
406	Reverse Osmosis and Desalination Facilities	At least 6 months prior to the start of Project construction.	To be prepared as a part of final engineering design.		
407	Coordination Plan for Access to the Colorado River Aqueduct	At least 90 days prior to the start of construction.	To be prepared as a part of final engineering design.		
408	Salt Management Storage and Disposal Plan	At least 90 days prior to the start of Project operation.	To be prepared as a part of final engineering design.		
409	Revised Revegetation Plan	At least 90 days prior to the start of construction.	Plan prepared, subject to updating to be completed based upon final engineering design.		
410	Invasive Species Monitoring and Control Plan	Within 6 months of License issuance.	Completed and filed with FERC.	Modified and approved November 19, 2015	Invasive Species Monitoring and Control Plan
411	Couch's Spadefoot Toad Protection Plan	Pre-construction surveys on Project lands – after the Licensee obtains site access. Couch's Spadefoot Toad Protection Plan – within 90 days prior to the start of construction.	To be prepared as a part of final engineering design.		

Article	Requirement	Due Date	Status	FERC Approval	Link
412	Special-Status Plants Protection Plan	Within 6 months of License issuance.	Completed and filed with FERC.	Approved May 16, 2016	Special Status Plants Protection Plan
413	Avian Protection Plan	Within 6 months of License issuance.	Completed and filed with FERC.	Approved May 17, 2016	Avian Protection Plan
413	Avian Protection – Desalinization Pond Deterrence	Within 5 years of License issuance.	To be prepared as a part of final engineering design.		
414	Wildlife Protection Plan	Within 6 months of License issuance.	Completed and filed with FERC.	Approved June 6, 2016	Wildlife Protection Plan
415	Desert Tortoise Clearance and Relocation/Translocation Plan	Plan filed on October 27, 2009; approved and shall be implemented, edits required.	Completed and filed with FERC.	Plan filed on October 27, 2009; approved and shall be implemented.	Desert Tortoise Clearance and Relocation/Translocation Plan
416	Desert Tortoise Habitat Mitigation Plan	At least 60 days prior to start of construction, but not later than submittal of the final contract plans and specifications and supporting design report required by Article 302.	To be prepared as a part of final engineering design.		
417	Revised Predator Monitoring and Control Plan	Within 6 months of License issuance.	Completed and filed with FERC.	Plan modified and approved May 19, 2016	Revised Predator Monitoring and Control Plan
418	Worker Environmental Awareness Program	Plan filed on October 27, 2009, is approved and shall be implemented, edits required	Completed and filed with FERC.	Plan filed on October 27, 2009; approved	Worker Environmental Awareness Program

Article	Requirement	Due Date	Status	FERC Approval	Link
419	Coordination of Construction Schedules and Public Notice Plan	At least 6 months prior to the start of Project construction, including use of construction staging areas.	To be prepared as a part of final engineering design.		
420	Facility Lighting Design and Night Sky Monitoring Plan	Within 1 year of License issuance.	Completed and filed with FERC.	Plan approved August 3, 2015	Facility Lighting Design and Night Sky Monitoring Plan
421	Visual Effects Protection Plan	Within 18 months of License issuance.	Completed and filed with FERC.	Plan approved April 18, 2016	Visual Effects Protection Plan
422	Water and Soil Pollution Prevention Plan	Within 1 year of License issuance.	Completed and filed with FERC.	Plan approved August 3, 2016	Water and Soil Pollution Prevention Plan
423	Air Quality Monitoring and Protection Plan	Within 18 months of License issuance.	Completed and filed with FERC.	Plan approved April 18, 2016	Air Quality Monitoring Plan
424	FERC Form 80 Exemption	N/A	Project is exempt.	N/A	
425	Programmatic Agreement and Historic Properties Management Plan	Must implement HPMP; HPMP filed on March 4, 2011. Annual report due July 19	2015 and 2016 reports submitted. Annual reports will continue to be submitted by July 19 of each year.	HPMP filed on March 4, 2011; approved	Historic Properties Management Plan
426	Use and Occupancy of Project Lands	Annually by January 31	Annual report of any leases issued. 2015 report filed January 25, 2016.		

1.6 BLM Environmental Review Process

In this EA, BLM is "tiering" to the FERC FEIS, with substantial additional information that has been developed subsequent to completion of the NEPA document, and described in detail below. The Department of Interior NEPA regulations (43 CFR § 46.140) and BLM NEPA Handbook (BLM, 2008, p. 21) encourage BLM to use existing environmental analyses to analyze effects associated with a proposed action, "*…when doing so would build on work that has already been done, avoid redundancy, and provide a coherent and logical record of the analytical and decision-making process.*" Use of existing NEPA analyses may range from considering the analysis as the basis for decision-making, using components of an analysis through tiering, or supplementing them with new analyses, as described below:

When tiering, BLM's NEPA Handbook (H-1790-1, Section 5.2) (BLM, 2008). allows the BLM to tier to existing NEPA to reduce redundant analysis and "*…allow [the BLM] to narrow the scope of subsequent analysis, and focus on the issues that are ripe for decision-making*." Tiering is defined and authorized in CEQ's NEPA regulations, 40 CFR § 1508.28 and 40 CFR § 1502.20. As CEQ explains, tiering is using the coverage of general matters in broader NEPA documents in subsequent, narrower NEPA documents. This allows the tiered NEPA document to concentrate solely on the issues not already addressed. Tiering is appropriate when the analysis for the action will be a more site-specific or project-specific refinement or extension of the existing NEPA document, 43 CFR § 46.140(c).

After reviewing the FERC FEIS, BLM met with FERC on May 8, 2013 in order to resolve outstanding questions regarding the FERC FEIS. BLM reviewed the FERC analysis provided in its "Order Denying Rehearing and Denying Stay" (October 15, 2015) in response to Interior's Request for Rehearing. BLM has also reviewed and considered the FERC License requirements including the subsequent natural resource management plans that were developed by the Licensee in consultation with BLM and other resource agencies. Based upon the whole of the record, BLM has determined that the FERC FEIS adequately analyzed the potential environmental effects of the Project on BLM-managed land in regards to natural and cultural resources and can be used for tiering for BLM's purposes in considering the ROW. BLM has supplemented that analysis with additional new information. And, as noted above, the FERC FEIS did not analyze a CDCA PA for the utility passageway. Therefore, this EA considers both the ROW and PA actions subject to BLM's jurisdiction.

This EA is tiered to the entirety of the FEIS, as prepared by FERC. This EA is focused on the ROW for BLM-managed lands, and the PA for segments of the gen-tie line alignment and water supply pipeline alignment on federal lands that do not lie within designated corridors. FERC has already analyzed the Project ROW for the gen-tie line, water supply pipeline, and Central Project Area to be located on BLM lands. It is consistent with NEPA for BLM to tier to FERC's NEPA analysis in meeting its separate NEPA duty 40 CFR § 1508.28; and 43 CFR § 46.140(a)(c).

BLM's approval of the Project ROW and PA is limited to the ROW and PA decisions before the agency and will not be a duplication of the FERC's FEIS nor revisit the decision to license and construct the Project.

Scoping for this EA, including the proposed ROW and PA, was initiated by BLM with the release of the "*Notice of Intent (NOI) to Amend the Resource Management Plan for the California Desert Conservation Area and Prepare an Associated Environmental Assessment for the Plan Amendment and the Eagle Crest Pumped Storage Project, California,*" 80 Federal Register 73815 (Nov. 25, 2015). A Scoping Report was prepared by BLM summarizing the comments. All comments were reviewed and taken into consideration in the preparation of this EA.

BLM management and technical staff have critically evaluated and provided input on all FERC FEIS information used in this EA. Where applicable, new information has been added with current data. Key environmental resource areas in the FERC EIS that were evaluated and updated for this ROW EA include: groundwater, endangered species, cultural resources, and all resource management directions addressed in the DRECP. The updated resource areas are described below in Sections 1.6.1 to 1.6.3. DRECP updates are described in detail in Section 1.7.

1.6.1 *Groundwater Update*

An updated assessment of cumulative groundwater effects in the Chuckwalla Basin was performed accounting for a current list of projects and estimated water demands, and review of FERC required groundwater and water quality protection plans. At the time the FERC EIS was published in 2012, an estimated 14 solar projects were planned with total cumulative water use estimates of about 17,742 acre-feet for construction plus 2,506 acre-feet per year during operation. Since that time, many of the originally proposed solar projects have been withdrawn from consideration. Water usage estimates are also lower due to the cancellation of the Eagle Mountain landfill project and an updated schedule for the implementation of the Project's timing. A revised water balance was developed based on these changes in water use. The balance considers the timing of water use by projects and calculates the cumulative change in aquifer storage. The revised estimate indicates that outflows will exceed inflows from the start of the initial fill in 2020 until 2042 with a maximum reduction in aquifer storage of about 4,200 acre-feet and will recover to pre-Project conditions by 2046. Total cumulative water usage estimates are about 114,560 acre-feet lower than previously published.

1.6.2 *Endangered species consultation*

BLM has been engaged in ESA Section 7 informal consultation with USFWS, including a joint site tour on April 13, 2016 of the Central Project Area. Supplemental biological surveys for desert tortoise were conducted as required in the 2012 BO. The biological survey data of the Central Project Area confirmed the habitat findings and potential effects on desert tortoise in the

April 10, 2012 BO. FERC incorporated terms and conditions from the BO into the License, and also included required plans for protection, relocation, and monitoring of the desert tortoise. Eagle Crest conducted surveys for desert tortoise over 4 years. Surveys completed in May 2016 concluded that tortoise densities are very low in the Project area. Signs of tortoises were less than those found in earlier surveys due to the ongoing drought cycle and continuing tortoise decline. BLM will continue its Section 7 ESA consultation with USFWS through completion of the ROW, and as needed through Project implementation. Please *see* Section 7.1 of this EA for more information on the BLM's consultation Section 7 ESA process.

1.6.3 *Tribal Consultation*

FERC completed its independent consultation with the California State Historic Preservation Office (SHPO), BLM, and interested Tribes, and developed a Historic Properties Management Plan (HPMP), and Memorandum of Agreement between FERC, SHPO, and Eagle Crest. The FERC EIS describes the proposed measures contained in the HPMP for managing known and unknown cultural resources in the area. In its review of the ROW application, BLM has undertaken its own NHPA Section 106 consultation process for the Central Project Area, water supply pipeline, and the gen-tie line in the licensing proceeding. BLM completed consultation with interested Tribes and the SHPO in August of 2015, including review of the FERC/SHPO Memorandum of Agreement and the Project HPMP. Please *see* Section 7.2 of this EA for further information on the BLM's Section 106 process and compliance.

1.7 Policy Consistency and Land Use Plan Conformance

Federal Land Policy and Management Act of 1976. FLPMA provides the BLM's overarching mandate to manage the lands and resources under its stewardship based on the principles of multiple use and sustained yield. Multiple use is a concept that directs management of lands and resource values in a way that best meets the present and future needs of Americans. It is defined as "*…a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources*" (FLPMA §103[c]). In processing a ROW for a hydroelectric facility on public lands, BLM must follow FLPMA Title V (43 U.S.C. §§ 1761-1771) and BLM ROW regulations (43 CFR Part 2800). In processing a land use plan amendment, BLM must also comply with the BLM Planning Regulations (43 CFR Part 1600) and the BLM Land Use Planning Handbook (H-1601-1).

Other Federal Laws. In addition, all BLM decisions and approvals must be consistent with applicable statutes, regulations, and policies, including but not limited to the following:

- Endangered Species Act
- National Environmental Policy Act
- National Historic Preservation Act and other cultural resource protection laws
- California Desert Protection Act

- Clean Water Act
- Clean Air Act
- Wilderness Act
- Taylor Grazing Act
- Sikes Act
- Mining and Minerals Policy of 1970, and National Materials and Minerals Research and Development Acts
- Mining, Mineral Leasing, Material Disposal and Reclamation Acts
- Federal Executive Orders and Congressional Mandates
- Federal Power Act

Federal Power Act. The FERC License for the Project is subject to numerous requirements under the FPA and other applicable statutes, including the Clean Water Act, ESA, Coastal Zone Management Act, and NHPA. Table 1-2 summarizes the major statutory and regulatory requirements for the FERC-licensed Project, including the application for the ROW from BLM.

Table 1-2: Major Statutory and Regulatory Requirements for the Eagle Mountain Pumped Storage Project.

Requirement	Agency	Status
Federal Power Act	FERC	Order Issuing Original License Project 13123-002, June 19, 2014.
Section 4(e) of the FPA (land management conditions)	Interior, BLM	No Section 4(e) conditions were filed.[6]
Section 10(j) of the FPA	USFWS, CDFW	No Section 10(j) recommendations were filed.
Section 10(a)(1) of the FPA	FERC	FERC considered the water quality certification issued by the State Water Board as recommendations under the public-interest standard of the FPA.
Clean Water Act – Water Quality Certification	State Water Board	The Project will not discharge into the waters of the United States, therefore water quality certification is not required.[7] FERC considered the water quality certification issued by the State Water Board as recommendations under the public-interest standard of the FPA Section 10(a)(1).

[6] FERC License Section 53.
[7] FERC License Section 50.

Requirement	Agency	Status
Coastal Zone Management Act	California Coastal Commission	The Project is not located in a state-designated California coastal zone and is not subject to California coastal zone program review[8].
Endangered Species Act	USFWS	BO filed with FERC April 10, 2012. The terms and conditions of the incidental take statement are set forth in Appendix A of the FERC License and incorporated into the FERC License by ordering paragraph D.
National Historic Preservation Act	SHPO	Programmatic Agreement executed by the SHPO on September 27, 2011. Article 425 of the FERC License requires Eagle Crest to implement the Historic Properties Management Plan.
Federal Land Policy and Management Act	BLM	A ROW application from Eagle Crest is pending before the BLM. BLM requires a PA be issued to allow the construction of the gen-tie line on lands not designated within the CDCA Plan as a corridor.
National Environmental Policy Act	FERC, BLM	A Final EIS was issued by FERC for the Project in January 2012. BLM requires an Environmental Assessment prior to ROW approval and issuing a Plan Amendment to allow the gen-tie line and water supply pipeline to be constructed on lands not designated as a corridor in the CDCA Plan.

1.7.1 *Conformance with BLM's Land Use Plans*

This proposed ROW and PA for the Project are for use of land managed by the BLM under the CDCA Plan and its amendments, including the DRECP. As described below, the Applicant's proposed ROW is not consistent with the CDCA Plan because segments of the gen-tie line and water supply pipeline fall outside of a designated corridor. Therefore, to allow the Applicant's proposed ROW action, a PA to the CDCA Plan is required.

California Desert Conservation Area Plan. The CDCA encompasses approximately 25 million acres in Southern California designated by the U.S. Congress in 1976 through FLPMA. The BLM manages about 10 million of those acres. Congress directed the BLM to prepare and implement a comprehensive long-range plan for the management, use, development, and protection of public lands within the CDCA. The 1980 CDCA Plan, as amended, is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. The CDCA Plan provides overall regional guidance for BLM-administered lands in the CDCA and establishes long-term goals for protection and use of the California desert. The CDCA Plan

[8] Letter dated April 28, 2009 from the California Coastal Commission to Eagle Crest Energy Company.

Record of Decision (ROD) (1980) contemplated wind, solar, geothermal, and powerplants in the CDCA. A stated goal under the CDCA Plan "Energy Production and Utility Corridors Element" is to, "*[i]dentify potential sites for geothermal development, wind energy parks, and powerplants*" (CDCA Plan p. 93, 1980). The CDCA Plan also provides for Plan amendments, "*[s]ites associated with power generation or transmission not identified in the Plan will be considered through Plan Amendment process*" (CDCA Plan p. 95, 1980).

Although the Project area is physically within the Mojave Desert, all BLM-managed land in the Chuckwalla Valley is managed in accordance with the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO Plan). The NECO Plan is a Habitat Conservation Plan and amendment to the 1980 CDCA Plan that provides:

- A comprehensive framework for ecosystem management, including recovery of three populations of the desert tortoise.
- A single landscape basis for ecosystem management for three federal land administering agencies within the planning area: BLM, Joshua Tree National Park (eastern half only), and all of Chocolate Mountains Gunnery Range managed by the U.S. Navy.
- A structure that integrates ecosystem management into a broader context of agencies' mandates, including BLM's multiple use management mission.

The NECO planning area consists of approximately 5.5 million acres, covering portions of BLM field offices in Needles, El Centro, and Palm Springs. The NECO CDCA Plan amendment is also cooperatively joined by the CDFW through the statewide Sikes Act Memorandum of Agreement.

The CDCA Plan states that transmission lines above 161-kV that are outside of designated corridors would need to be addressed in an amendment to the CDCA Plan. Figure 1-2 shows the designated corridors in the Chuckwalla Valley in relation to the Applicant's transmission line. Additionally, the Applicant's water supply pipeline diameter is 12 to 24 inches, which is above the allowable size outside a designated corridor under the CDCA, requires a PA.

Desert Renewable Energy Conservation Plan. The DRECP (BLM, 2016) Land Use Plan Amendment (LUPA) is a landscape-scale renewable energy and conservation planning effort to amend the CDCA Plan and covers more than 22 million acres in the California desert. The DRECP planning area covers private, state, and federal lands in seven counties, including Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego.

The DRECP identifies development focus areas that may accommodate up to 20,000 MW of power from renewable energy projects and associated transmission over the next 25 years. The DRECP also identifies conservation areas, sensitive plant and wildlife species, and a strategy for their management into the future. The DRECP eliminates the multiple-use classes (MUCs) in the CDCA. Many of the concepts of the MUCs were retained in the DRECP, but with different

names. The DRECP LUPA/EIS was prepared by a team of state and federal agencies which include the BLM, USFWS, California Energy Commission (CEC) and CDFW. The DRECP LUPA/DEIS was released for public comment in September 2014 and the DRECP LUPA/FEIS was published in November 2015.

The Proposed DRECP LUPA/FEIS also considered designation of 134 Areas of Critical Environmental Concern (ACECs). In order to comply with BLM's planning regulations (43 CFR §1610.7– 2(b)) the BLM announced an additional 60-day public comment period on those 134 ACECs on March 11, 2016. The Project's gen-tie line and water supply pipeline traverses the DRECP-proposed Chuckwalla ACEC.

BLM issued a ROD on the DRECP LUPA/FEIS on September 14, 2016. The DRECP ROD includes a series of CMAs with which projects proposed to be built within the DRECP area must comply. The BLM has compared the FERC License requirements with the DRECP's applicable CMAs[9] to determine if the Project is in compliance with DRECP goals and objectives. In the comparison table "crosswalk" (*see* Appendix A) the DRECP's CMAs and conservation goals are described and compared to the FERC License Articles.

The FERC License requirements (Appendix A), meet or exceed the requirements the DRECP's CMAs listed. Therefore, since the FERC License requirements meet the DRECP goals and objectives for the CMAs listed in Appendix A, and to avoid unnecessary duplication, the FERC License requirements will be implemented in lieu of the CMAs described in Appendix A. However, in some cases, BLM is proposing to apply additional mitigation to the Project in order to insure DRECP goals and objectives are met. These additional requirements are described in Table 4-6 of this EA. Some DRECP CMAs do not apply to the Project because they address resources not present in the Project area or activities not included in the Project proposal.

Some DRECP CMAs will not apply to the Project because they would unreasonably interfere with the FERC Project License and the power purposes for this land. The Project is recognized as a FLPMA Valid Existing Right (VER). FLPMA (43 U.S.C. § 701(h)). BLM's FLPMA planning regulations and guidance direct that all new planning decisions, including designations of ACECs, must recognize VERs. BLM, "Land Use Planning Manual 1601" at .06.G; 43 CFR § 1610.5-3; and BLM, "Land Use Planning Handbook, H-1601-1" at p. 19 and App. C. at p. 28. The DRECP LUPA/FEIS includes this direction on VER. DRECP LUPA/FEIS, Glossary at p. 17 ("*All decisions made in land use plans, and subsequent implementation decisions, will be subject to valid existing rights*."). The BLM recognizes that the Project – including the federal lands withdrawn, under the authority of the FPA Section 24, for the gen-tie line, water supply

[9] CMAs that are not applicable to the project include CMAs which apply to resources or land classifications not found in the project area.

pipelines, and other facilities and included in the FERC License – constitute a VER. When a CMA is in conflict with the FERC License to the extent that the Project could not meet the FPA purposes for the Project, BLM cannot reasonably require compliance with the CMA (Table 1-3) or land allocation. The DRECP LUPA/FEIS CMAs and land allocations that do not unreasonably conflict with the FPA purposes for the Project will be required by BLM. In most cases, BLM has determined that the FERC License requirements satisfy the resource management goals of the DRECP.

Table 1-3: Specific DRECP CMAs that the Project may not meet to the extent the CMA is in conflict with the License, a Valid Existing Right (VER).

DRECP CMA No.	CMA Description	Eagle Mountain FERC License Requirement	BLM Conclusion
LUPA-BIO-BAT-1: Bat Species (BAT) The following CMAs would be implemented for bat Focus and BLM Special-Status Species, including but not limited to those listed below: • California Leaf-nosed Bat • Pallid Bat • Townsend's Big-eared Bat	Activities, except wind projects, will not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost as described below. Refer to CMA DFA-VPL-BIO-BAT-1 for distances within DFAs and VPLs.	The Wildlife Protection Plan required by the FERC license (Article 414) included provisions for conducting summer and winter baseline bat surveys to determine the existence, location, and condition of bat roosts, and to identify foraging habitat in the project area. The plan also included, at a minimum: (1) methodologies for the summer and winter baseline surveys prior to the start of project construction; (2) measures to protect onsite bat roosting habitat; (3) measures for onsite replacement of roosting habitat removed by project development; (4) success criteria for the replacement roosting habitat; (5) provisions for conducting annual summer and winter bat surveys in the project area in years 1–5, 7, and 10, following initiation of reservoir filling; and (6) a schedule for implementing the plan and filing reports with the Commission on the results of the surveys. Eviction and exclusion of bats will not be initiated from May through August, the bat maternity season. The Biological Technical Advisory Team will be consulted regarding plans for eviction of bats prior to construction.	The project has been sited by FERC to use existing, previously disturbed open mine pits as reservoirs, which are assumed to contain occupied bat roosts. To address impacts to bats, the FERC license includes requirements for a Wildlife Mitigation Plan, which includes a Bat Protection Plan. The Bat Protection Plan includes measures to monitor and protect bats and will meet the overall goal of LUPA-BIO-BAT-1. The Bat Protection Plan has been submitted to BLM and the wildlife managing agencies (CDFW, USFWS, and NPS) for review and comment, and, after addressing the comments, was modified and filed with FERC on February 18, 2015 and approved by FERC June 6, 2016. A Biological Technical Advisory Team will be established, composed of Eagle Crest staff, including the Lead Biologist, and consultants and staff from the resource managing agencies. The resource managing agencies include CDFW, USFWS, BLM, and NPS. This team will advise on adaptive management approaches to guide the implementation of monitoring and mitigation programs. **The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as the license, a VER, allows construction of the project within the described bat avoidance area.**
LUPA-BIO-BAT-2:	Mines will be assumed to be occupied bat roosts, unless appropriate surveys for bat use have been conducted during all seasons (including maternity, lekking or swarming, and winter use). Mines not considered potential bat roosts are only those that have no structure/workings (adits or shafts or crevices out of view).	The Wildlife Protection Plan (Article 414) included provisions for conducting summer and winter baseline bat surveys to determine the existence, location, and condition of bat roosts, and to identify foraging habitat in the project area. The plan also included, at a minimum: (1) methodologies for the summer and winter baseline surveys prior to the start of project construction; (2) measures to protect onsite bat roosting habitat; (3) measures for onsite replacement of roosting habitat removed by project development; (4) success criteria for the replacement roosting habitat; (5) provisions for conducting annual summer	The project has been sited to use existing open mine pits as reservoirs, which are assumed by LUPA-BIO-BAT-2 to contain occupied roosts. The FERC license includes requirements for a Wildlife Mitigation Plan, which includes a Bat Protection Plan. However, the Bat Protection Plan includes measures to monitor and protect bats and will meet the overall goal of LUPA-BIO-BAT-1. The Bat Protection Plan has been submitted to BLM and the wildlife managing agencies (CDFW, USFWS, and NPS) for review and comment, modified, and filed with FERC on February 18, 2015 and approved by FERC June 6, 2016. A Biological Technical Advisory Team will be

DRECP CMA No.	CMA Description	Eagle Mountain FERC License Requirement	BLM Conclusion
		and winter bat surveys in the project area in years 1–5, 7, and 10, following initiation of reservoir filling; and (6) a schedule for implementing the plan and filing reports with the Commission on the results of the surveys. Eviction and exclusion of bats will not be initiated from May through August, the bat maternity season. The Biological Technical Advisory Team will be consulted regarding plans for eviction of bats prior to construction.	established, composed of Eagle Crest staff, including the Lead Biologist, and consultants and staff from the resource managing agencies. The resource managing agencies include CDFW, USFWS, BLM, and NPS. This team will advise on adaptive management approaches to guide the implementation of monitoring and mitigation programs. **The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as the license, a VER, allows construction of the project within the described bat avoidance area.**
LUPA-BIO-PLANT-2:	Implement an avoidance setback of 0.25 mile or all plant Focus and BLM Special-Status Species occurrences. Setbacks will be placed strategically adjacent to occurrences to protect ecological processes necessary to support the plant Species (see Appendix Q, Baseline Biology Report in the Proposed LUPA and Final EIS [2015], or the most recent data and modeling).	The FERC license-required (Article 412) Special-Status Plants Plan describes measures to ensure protection of special-status plants to include establishing Environmentally Sensitive Areas (ESA) prior to the start of any ground- or vegetation-disturbing activities. A qualified Project biologist shall establish ESAs to protect special-status plants that occur outside of the Project disturbance areas and within 100 feet of Project disturbance areas. Where avoidance is infeasible, woody or succulent plants of CNPS Ranks 1 and 2, and any listed woody or succulent species, will be salvaged if salvage and transplanting has been historically successful for the species. For all special-status species, where Project construction would affect greater than 25% of the local (Chuckwalla Valley) population, two methods of salvage would be employed. Survival of transplanted and seeded special-status species will be monitored.	The project has been sited to be located in already disturbed lands to the extent possible. However, special-status plants have been found within 0.25 mile of project features. The FERC license includes measures to monitor and protect plants and will meet the overall goal of LUPA-BIO-PLANT-2. The Special-Status Plants Protection Plan has been submitted to BLM and the wildlife managing agencies (CDFW, USFWS, and NPS) for review and comment, modified, filed with FERC on February 18, 2015, and approved by FERC May 16, 2016. A Biological Technical Advisory Team will be established, composed of Eagle Crest staff, including the Lead Biologist, and consultants and staff from the resource managing agencies. The resource managing agencies include CDFW, USFWS, BLM, and NPS. This team will advise on adaptive management approaches to guide the implementation of monitoring and mitigation programs. **The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as the license, a VER, allows construction of the project within the described Special-status plant avoidance area.**
LUPA-BIO-IFS-24: Golden Eagle	Provide protection from loss and harassment of active nests through the following actions: • Activities that may impact nesting golden eagles, will not be sited or constructed within 1-mile of any active or alternative golden eagle nest within an active golden eagle territory, as determined by BLM in coordination with USFWS as appropriate.	Article 413 of the FERC license requires Eagle Crest to develop an Avian Protection Plan to ensure protection of birds from project transmission lines, and nesting migratory birds, raptors, and burrowing owls from project construction activities. The Avian	There are no known golden eagle nests within one mile of the project. However, if a golden eagle should establish a nest within one mile of the project site, the application of this CMA would preclude construction of the project.

DRECP CMA No.	CMA Description	Eagle Mountain FERC License Requirement	BLM Conclusion
		Protection Plan (APP) outlines measures to ensure accurate buffers and setbacks for nesting birds, nesting raptors and burrowing owls are established prior to construction. Based on pre-construction survey results, the APP will potentially implement up to a 0.5-mile construction buffer around all active golden eagle or prairie falcon nests, depending on the Category of Activity and the presence of topographic buffers. This protected area surrounding the nest may be adjusted by the Lead Biologist in consultation with BLM, CDFW, and USFWS.	However, the FERC license includes measures to monitor and protect golden eagle nests and will meet the overall goal of LUPA-BIO-IFS-24. The Avian Protection Plan was submitted to BLM and the wildlife managing agencies (CDFW, USFWS, and NPS) for review and comment, modified, filed with FERC on February 18, 2015, and approved by FERC May 17, 2016. **The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as the license, a VER, allows construction of the project within the described golden eagle avoidance area.**
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 ecologic impacts. Mapping will use the best available 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 ecologic 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.	The project has been sited by FERC to minimize potential impacts to sensitive resources. The water pipeline and gen-tie line were sited to be collocated with existing utility corridors and the Central Project Area is located in highly disturbed mine lands. Desert pavement may be present along the gen-tie route and brine pond area.	The project has been sited to minimize potential impacts to sensitive resources. The water pipeline and gen-tie line were sited to be collocated with existing utility corridors and the Central Project Area is located in highly disturbed mine lands. **The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as it conflicts with the license, a VER, which allows project-related ground-disturbing activity in this FPA-withdrawn area.**
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.	The project has been sited by FERC to minimize potential impacts to sensitive resources. The water pipeline and gen-tie line were sited to be collocated with existing utility corridors and the Central Project Area is located in highly disturbed mine lands.	The project has been sited to minimize potential impacts to sensitive resources. The water pipeline and gen-tie line were sited to be collocated with existing utility corridors and the Central Project Area is located in highly disturbed mine lands. **The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as it conflicts with the license, a VER, which allows project-related ground-disturbing activity in this FPA-withdrawn area.**
LUPA-SW-17: **Groundwater** For any activity that proposes to utilize groundwater	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.	Article 401 requires Eagle Crest to investigate both aquifer confinement and project effects on storativity. Depending on the results of this investigation, the final design of the long-term groundwater monitoring network and the maximum allowable drawdown in the	The CMA requires that an activity's groundwater extraction not contribute to exceeding the estimated perennial yield (long-term recharge) for the basin. Long term is defined as two years. FERC's EIS analysis [and that developed for the State Water Board's EIR], found that the estimated perennial yield is 12,700

DRECP CMA No.	CMA Description	Eagle Mountain FERC License Requirement	BLM Conclusion
resources, the following stipulated CMAs shall apply, regardless of project location.		monitoring wells (required by Article 403) may be modified to ensure that the project does not lower the groundwater surface to an elevation below the top of a confined aquifer. Article 402 requires, an evaluation and testing of the acid producing potential of remnant ore bodies. Article 403 requires a plan, in consultation with the State Water Board, to establish a network of water level monitoring wells and sets the maximum allowable change for each well. If the project's water withdrawals cause the water level to decline by more than the maximum allowable change, the article requires Eagle Crest to reduce pumping. The article also requires the licensee to establish the maximum allowable change to the ground water table at well MW-111, or an appropriate alternative at a nearby site. Article 403 requires Eagle Crest to develop a groundwater monitoring plan, with monthly monitoring during the first four years of pumping (i.e., the initial fill period), quarterly monitoring for the next seven years which should capture the maximum water table decline, and semi-annual monitoring thereafter, for the term of the license when changes to groundwater levels are expected to be small. Article 404 requires groundwater quality monitoring in the vicinity of the project's reservoirs, desalination ponds, seepage recovery wells, and water supply wells over the term of the license. Article 406 requires Eagle Crest to operate the reverse osmosis desalination facility to maintain the reservoir at the same water quality as the source groundwater. In addition, Articles 404, 405, and 406 reserve the Commission authority to direct Eagle Crest to modify project structures or operations, or conduct other appropriate actions if groundwater quality and groundwater level monitoring indicates that such actions are necessary to protect	acre-feet per year (AFY). The Eagle Mountain Project alone will not use groundwater in excess of the FERC and State Water Board estimated perennial yield. However, in the cumulative analysis of the Eagle Mountain Project, in combination with all other Projects, FERC concluded that the project will, cumulatively, contribute to basin-wide withdrawals in excess of perennial yield for approximately three to four years during the initial fill of the lower reservoir. For all following years, basin recovery and recharge will be in excess of extraction over the remaining life of the project. The Eagle Crest project's water will be obtained from three wells located on private lands, and no groundwater pumping will be done from BLM ROW lands. That groundwater use is therefore subject to State law rather than BLM jurisdiction. BLM has confirmed in writing that the State Water Board is the expert water agency for the State, and the governmental entity with authority to ultimately regulate the amount of water consumed in the Chuckwalla basin (letter from T. Raml, BLM CDD Manager to O. Biondi, State Water Board, April 19, 2013). The State Water Board concluded that the Eagle Mountain Project's contribution to cumulative overdraft was a temporary condition and that the Project: "…offers specific environmental, economic and social benefits that outweigh the unavoidable adverse environmental effects [of the temporary overdraft]". The State Water Board adopted a Statement of Overriding Considerations for cumulative impacts to groundwater resources (among other resource areas). **The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as it conflicts with the license, a VER.**

DRECP CMA No.	CMA Description	Eagle Mountain FERC License Requirement	BLM Conclusion
		groundwater quality and land uses within the project area.	
LUPA-SW-23:	***This CMA has been summarized.*** A Water (Groundwater) Supply Assessment shall be prepared in conjunction with the activity's NEPA analysis and prior to an 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 over-use or over-draft 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).	A groundwater supply assessment was prepared in an extensive technical review of the Project's potential impacts on groundwater level and quality. Groundwater assessments were conducted by the Applicant during the FERC Licensing process. These assessments were subjected to technical review and critique my multiple state and federal agencies and the Metropolitan Water District. The results of these studies were documented in technical memoranda, available in the FERC docket for the project. Conclusions based on these technical studies are summarized within this Environmental Assessment. FERC license Article 403 requires Eagle Crest to develop a groundwater monitoring plan, with monthly monitoring during the first four years of pumping (i.e., the initial fill period), quarterly monitoring for the next seven years which should capture the maximum water table decline, and semi-annual monitoring thereafter, for the term of the license when changes to groundwater levels are expected to be small. Article 404 requires groundwater quality monitoring in the vicinity of the project's reservoirs, desalination ponds, seepage recovery wells, and water supply wells over the term of the license. Information available in Technical Memorandum prepared for State Water Board EIR. *See* also response to LUPA-BIO-9. Both Groundwater Quality and Level Monitoring Plans have been submitted to BLM and the managing agencies for review and comment, modified, and filed with FERC on December 18, 2015. FERC approved and modified the Groundwater Level Monitoring Plan on April 11, 2016 and approved and modified the Groundwater Quality Plan on January 20, 2016.	The CMA requires that an activity's groundwater extraction not contribute to exceeding the estimated perennial yield (long-term recharge) for the basin. Long term is defined as two years. FERC's EIS analysis [and that developed for the State Water Board's EIR], found that the estimated perennial yield is 12,700 acre-feet per year (AFY). The Eagle Mountain Project alone will not use groundwater in excess of the FERC and State Water Board estimated perennial yield. However, in the cumulative analysis of the Eagle Mountain Project, in combination with all other Projects, FERC concluded that the project will, cumulatively, contribute to basin-wide withdrawals in excess of perennial yield for approximately three to four years during the initial fill of the lower reservoir. For all following years, basin recovery and recharge will be in excess of extraction over the remaining life of the project. The Eagle Crest project's water will be obtained from three wells located on private lands, and no groundwater pumping will be done from BLM ROW lands. That groundwater use is therefore subject to State law rather than BLM jurisdiction. BLM has confirmed in writing that the State Water Board is the expert water agency for the State, and the governmental entity with authority to ultimately regulate the amount of water consumed in the Chuckwalla basin (letter from T. Raml, BLM CDD Manager to O. Biondi, State Water Board, April 19, 2013). The State Water Board concluded that the Eagle Mountain Project's contribution to cumulative overdraft was a temporary condition and that the Project: "…offers specific environmental, economic and social benefits that outweigh the unavoidable adverse environmental effects [of the temporary overdraft]". The State Water Board adopted a Statement of Overriding Considerations for cumulative impacts to groundwater resources (among other resource areas). **The FERC license requirements satisfy the resource management goals of the DRECP for groundwater analysis, but the project cannot comply with the**

DRECP CMA No.	CMA Description	Eagle Mountain FERC License Requirement	BLM Conclusion
			specific CMA requirement, as it conflicts with the license, a VER.
LUPA-SW-26:	Groundwater pumping mitigation shall be imposed if groundwater monitoring data indicate impacts on water-dependent resources that exceed those anticipated and otherwise mitigated for in the NEPA analysis and ROD, even if the basin's perennial yield 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 timeframe. 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 Calvada Springs/South Pahrump Valley DFA or the Riverside East SEZ, and to cooperate in the compilation and analysis of groundwater data.	Article 403 requires Eagle Crest to develop a groundwater monitoring plan, with monthly monitoring during the first four years of pumping (i.e., the initial fill period), quarterly monitoring for the next seven years which should capture the maximum water table decline, and semi-annual monitoring thereafter, for the term of the license when changes to groundwater levels are expected to be small. Article 404 requires groundwater quality monitoring in the vicinity of the project's reservoirs, desalination ponds, seepage recovery wells, and water supply wells over the term of the license. The License sets maximum allowable drawdown. Both Groundwater Quality and Level Monitoring Plans have been submitted to BLM and the managing agencies for review and comment, modified, and filed with FERC on December 18, 2015. FERC approved and modified the Groundwater Level Monitoring Plan on April 11, 2016 and approved and modified the Groundwater Quality Plan on January 20, 2016.	The project does not impact water dependent natural resources such as riparian or phreatophytic vegetation, springs, seeps, streams. The Eagle Crest project's water will be obtained from three wells located on private lands, and no groundwater pumping will be done from BLM ROW lands. That groundwater use is therefore subject to State law rather than BLM jurisdiction. BLM has determined in writing that the State Water Board is the expert water agency for the State, and the governmental entity with authority to ultimately regulate the amount of water consumed in the Chuckwalla basin (letter from T. Raml, BLM CDD Manager to O. Biondi, State Water Board, April 19, 2013). The State Water Board concluded that the Eagle Mountain Project's contribution to cumulative overdraft was a temporary condition and that the Project: "…offers specific environmental, economic and social benefits that outweigh the unavoidable adverse environmental effects [of the temporary overdraft]". The State Water Board adopted a Statement of Overriding Considerations for cumulative impacts to groundwater resources (among other resource areas). **The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as it conflicts with the license, a VER.**
ACEC-LANDS-1:	Renewable energy activities are not allowed. ACECs would be right-of-way avoidance areas for all other land use authorizations, except when identified as right-of- way exclusion areas in the individual unit's Special Management Plan (Appendix L). Transmission would be allowed.	The project is not a renewable energy activity, but is a FPA licensed project that includes a water pipeline, monitoring wells, and access routes within the Chuckwalla ACEC.	The facilities located in the Chuckwalla ACEC were collocated to reduce impacts, the gen-tie is in large part in a CDCA-designated utility corridor which was located by FERC, in consultation with state and federal wildlife agencies to avoid sensitive species. The water supply pipeline crosses the ACEC and cannot be relocated to avoid the ACEC. Some groundwater monitoring wells may also be located in the ACEC. **The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as it conflicts with the license, a VER, which allows**

<table>
<tr><th>DRECP CMA No.</th><th>CMA Description</th><th>Eagle Mountain FERC License Requirement</th><th>BLM Conclusion</th></tr>
<tr><td></td><td></td><td></td><td>project-related construction in this FPA-withdrawn area.</td></tr>
<tr><td>CONS-BIO-IFS-3:</td><td>Ground disturbance caps as per Table 20 are reflected in the individual ACEC Special Unit Management Plans and maps in Appendix B. Refer to the California Desert National Conservation Lands, Section II.2.1, and ACECs, Section II.2.2, for a description of how the BLM Conservation Lands Ground Disturbance Cap will be applied, including measured, activity approval and the disturbance mitigation strategy. The same implementation methodology is repeated in CMAs NLCS-DIST-2 and ACEC-DIST-2. Table 20 provides the specific desert tortoise conservation area and linkage ground disturbance caps in the BLM LUPA conservation designations.
Table 20
Desert Tortoise Conservation Area and Linkage Ground Disturbance Caps in the BLM LUPA
<table>
<tr><th>Applicable Areas[1]</th><th>Disturbance Cap[2]</th></tr>
<tr><td>Tortoise Conservation Areas</td><td></td></tr>
<tr><td>Desert Tortoise Research Natural Area</td><td>0.1%</td></tr>
<tr><td>Fremont-Kramer Area of Critical Environmental Concern and Critical Habitat Unit</td><td>0.5%</td></tr>
<tr><td>Superior-Cronese Area of Critical Environmental Concern and Critical Habitat Unit</td><td>0.5%</td></tr>
<tr><td>Ord-Rodman Area of Critical Environmental Concern and Critical Habitat Unit</td><td>0.5%</td></tr>
<tr><td>Pinto Mountains Area of Critical Environmental Concern and Critical Habitat Unit</td><td>0.5%</td></tr>
<tr><td>Chuckwalla Area of Critical Environmental Concern and Critical Habitat Unit</td><td>0.5%</td></tr>
<tr><td>Chemehuevi Desert Area of Critical Environmental Concern and Critical Habitat Unit</td><td>0.5%</td></tr>
<tr><td>Piute Valley Area of Critical Environmental Concern and Critical Habitat Unit</td><td>0.5%</td></tr>
<tr><td>Shadow Valley Area of Critical Environmental Concern</td><td>0.5%</td></tr>
<tr><td>Ivanpah Valley Area of Critical Environmental Concern (Includes Critical Habitat on BLM Land)</td><td>0.1%</td></tr>
<tr><td>Desert Tortoise Linkages</td><td></td></tr>
<tr><td>Ord-Rodman to Superior-Cronese to Mojave National Preserve</td><td>1%</td></tr>
<tr><td>Superior-Cronese to Mojave National Preserve to Shadow Valley to Death Valley National Park Linkage</td><td>1%</td></tr>
<tr><td>Joshua Tree National Park and Pinto Mountains Area of Critical Environmental Concern to Chemehuevi Linkage</td><td>1%</td></tr>
<tr><td>Death Valley National Park to Nevada Test Site</td><td>1%</td></tr>
<tr><td>Ivanpah Valley Linkage</td><td>0.1%</td></tr>
<tr><td>Chemehuevi to Chuckwalla Linkage</td><td>0.1%</td></tr>
<tr><td>Pinto Wash Linkage</td><td>0.1%</td></tr>
<tr><td>Ord-Rodman to Joshua Tree Linkage</td><td>0.5%</td></tr>
<tr><td>Fremont Kramer to Ord-Rodman Linkage</td><td>0.5%</td></tr>
<tr><td>High-value Colorado Desert Habitat</td><td>1%</td></tr>
</table>
Tortoise Conservation Areas are shown in Appendix H.</td><td>FERC license Articles 415 and 416 (Desert Tortoise Clearance and Relocation/Translocation Plan and Desert Tortoise Clearance and Desert Tortoise Habitat Mitigation Plan) include the provisions of the U.S. Fish and Wildlife's BO for protection and conservation of the desert tortoise. The approved Desert Tortoise Clearance and Relocation and Translocation Plan was approved by FERC on October 27, 2009.

The Desert Tortoise Habitat Mitigation Plan is due at least 60 days prior to start of construction, but not later than submittal of the final contract plans and specifications and supporting design report required by Article 302. The Plan will include mitigation plans for project- related effects on Category I and Category III desert tortoise habitat. Compensation acreage calculated at 5:1 for critical habitat and 1:1 for standard.

Article 414 of the FERC license requires ECE to develop a Wildlife Protection Plan that includes fencing. The protection plan for wildlife has been submitted to BLM and the wildlife managing agencies for review and comment, modified, and approved by FERC on June 6, 2016.</td><td>The current degree of ground disturbance in the Chuckwalla ACEC has not been calculated so it is uncertain if the ACEC is currently above or below the disturbance cap. If the ground disturbance condition of the NCL and/or ACEC is below the designated disturbance cap, the disturbance cap is a limitation on ground-disturbing activities within the NCL and/or ACEC, and precludes approval of future ground disturbing activities above the cap.

The Project is a VER which may not conform to this CMA because ground disturbing activity will be allowed within the Chuckwalla ACEC.

The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as it conflicts with the license, a VER, which allows project-related ground-disturbing activity in this FPA-withdrawn area.</td></tr>
<tr><td>ACEC-DIST-1:</td><td>Development in ACECs is limited by specified disturbance caps which are the total ground disturbance (existing [past and present] plus future). The specific ACEC ground disturbance caps are defined in the</td><td>The Desert Tortoise Habitat Mitigation Plan is due at least 60 days prior to start of</td><td>The current degree of ground disturbance in the Chuckwalla ACEC has not been calculated so it is</td></tr>
</table>

DRECP CMA No.	CMA Description	Eagle Mountain FERC License Requirement	BLM Conclusion
	individual Special Unit Management Plans (Appendix B). The ground disturbance caps will be used, managed and implemented following the methodology for California Desert National Conservation Lands and ACECs identified in Section 11.2 and repeated in CMAs NLCS-DIST-2, and ACEC-DIST-2.	construction, but not later than submittal of the final contract plans and specifications and supporting design report required by Article 302. The Plan will include mitigation plans for project- related effects on Category I and Category III desert tortoise habitat. Compensation acreage calculated at 5:1 for critical habitat and 1:1 for standard.	uncertain if the ACEC is currently above or below the disturbance cap. If the ground disturbance condition of the NCL and/or ACEC is below the designated disturbance cap, the disturbance cap is a limitation on ground-disturbing activities within the NCL and/or ACEC, and precludes approval of future ground disturbing activities above the cap. **The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as it conflicts with the license, a VER, which allows project-related ground-disturbing activity in this FPA-withdrawn area.**
ACEC-DIST-2:	This CMA has been summarized. Specifically, the ground disturbance caps would be implemented as a limitation and objective using the following process: • Limitation: If the ground disturbance condition of the ACEC is below the designated ground disturbance cap (*see* calculation method), the ground disturbance cap is a limitation on ground-disturbing activities within the California Desert National Conservation Lands and/or ACEC, and precludes approval of future discretionary ground disturbing activities (see exceptions below) above the cap. • Objective, triggering disturbance mitigation: If the ground disturbance condition of the ACEC is at or above its designated cap, the cap functions as an objective, triggering the specific ground disturbance mitigation requirement. Ground disturbance mitigation is unique to ground disturbance cap implementation and a discrete form of compensatory mitigation, separate from other required mitigation in the DRECP LUPA (*see* Glossary of Terms). The ground disturbance mitigation requirement remains in effect for all (*see* exceptions below) activities until which time the ACEC drops below the cap, at which time the cap becomes a limitation and the ground disturbance mitigation is no longer a requirement. If ground disturbance mitigation opportunities do not exist in a unit (see below for "unit" of measurement), ground disturbing activities (*see* exceptions below) will not be allowed in that unit until which time opportunities for ground disturbance mitigation in the unit become available (*see* types and forms of ground disturbance mitigation below) or the unit recovers and drops below the cap. • Actions necessary to control the immediate impacts of an emergency that are urgently needed to reduce the risk to life, property, or important natural, cultural, or historic resources, in accordance with 43 CFR 46.150, are an exception to the ground disturbance cap limitation, objective and ground disturbance mitigation requirements. Ground disturbance from emergency actions will count in the ground disturbance calculation for other activities, and also be available for ground disturbance mitigation opportunities and restoration, as appropriate.	The Desert Tortoise Habitat Mitigation Plan is due at least 60 days prior to start of construction, but not later than submittal of the final contract plans and specifications and supporting design report required by Article 302. The Plan will include mitigation plans for project- related effects on Category I and Category III desert tortoise habitat. Compensation acreage calculated at 5:1 for critical habitat and 1:1 for standard.	The current degree of ground disturbance in the Chuckwalla ACEC has not been calculated so it is uncertain if the ACEC is currently above or below the disturbance cap. If the ground disturbance condition of the NCL and/or ACEC is below the designated disturbance cap, the disturbance cap is a limitation on ground-disturbing activities within the NCL and/or ACEC, and precludes approval of future ground disturbing activities above the cap. **The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as it conflicts with the license, a VER, which allows project-related ground-disturbing activity in this FPA-withdrawn area.**
DFA- BIO-IFS-2	Implement the following setbacks shown below in Table 22 as applicable in the DFAs. **Table 22** **Individual Species DFA Setback Requirements** **Species** | **DFA Setbacks**	Protection measures for wildlife and plant species are specified in resource protection plans which have been submitted to BLM and the wildlife managing agencies (CDFW, USFWS, and NPS) for review and comment, modified, and approved by FERC on May 16, 2016 (plants) and June 6, 2016 (wildlife).	There are no known golden eagle nests within one mile of the project. However, if a golden eagle should establish a nest within one mile of the project site, the application of this CMA would preclude construction of the project. However, the FERC license includes measures to

<table>
<tr><th>DRECP CMA No.</th><th>CMA Description</th><th>Eagle Mountain FERC License Requirement</th><th>BLM Conclusion</th></tr>
<tr>
<td></td>
<td>
<table>
<tr><td colspan="2">Reptile</td></tr>
<tr><td>Desert tortoise</td><td>None.</td></tr>
<tr><td>Flat-tailed horned lizard</td><td>None.</td></tr>
<tr><td colspan="2">Bird</td></tr>
<tr><td>Bendire’s thrasher</td><td>Setback pre-construction, construction, and decommissioning, and other activities 500 feet from active nests.</td></tr>
<tr><td>Burrowing Owl</td><td>656 feet (200 meters) from active nesting sites.</td></tr>
<tr><td>California condor</td><td>Setback wind and transmission projects 5 miles from nest sites.

Setback solar, geothermal, and other activities than may impact condors 1.5 miles from nest sites and out of direct line of site from nest sites.</td></tr>
<tr><td>Gila woodpecker</td><td>Setback pre-construction, construction, and decommissioning, and other activities that may impact the species 0.25 mile from suitable habitat during the breeding season (April 1 through July 31).</td></tr>
<tr><td>Golden eagle</td><td>Setback activities 1 mile from active or alternative nests within an active territory as described in LUPA-BIO-IFS-24.</td></tr>
<tr><td>Swainson’s Hawk</td><td>0.5 mile from active nests.</td></tr>
<tr><td colspan="2">Mammal</td></tr>
<tr><td>Desert bighorn sheep</td><td>None.</td></tr>
<tr><td>Mohave ground squirrel</td><td>None.</td></tr>
</table>
</td>
<td>The FERC license also includes the mandatory terms and conditions from the U.S. Fish and Wildlife Service (USFWS) Biological Opinion (BO) on the Eagle Mountain Pumped Storage Project.

Article 413 of the FERC license requires Eagle Crest to develop an Avian Protection Plan to ensure protection of birds from project transmission lines, and nesting migratory birds, raptors, and burrowing owls from project construction activities. The Avian Protection Plan (APP) outlines measures to ensure accurate buffers and setbacks for nesting birds, nesting raptors and burrowing owls are established prior to construction. Based on pre-construction survey results, the APP will potentially implement up to a 0.5-mile construction buffer around all active golden eagle or prairie falcon nests, depending on the Category of Activity and the presence of topographic buffers. This protected area surrounding the nest may be adjusted by the Lead Biologist in consultation with BLM, CDFW, and USFWS.</td>
<td>monitor and protect golden eagle nests and will meet the overall goal of DFA-VPL-BIO-IFS-2.

The Avian Protection Plan was submitted to BLM and the wildlife managing agencies (CDFW, USFWS, and NPS) for review and comment, modified, filed with FERC on February 18, 2015, and approved by FERC May 17, 2016.

The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as the license, a VER, allows construction of the project within the described golden eagle avoidance area.</td>
</tr>
<tr>
<td>Chuckwalla ACEC Action[10]

Soil, water, air</td>
<td>Objective: Prevent excessive ground water withdrawal that would potentially threatened dune/ playa dependent vegetation.

Management Actions:
• Restrict construction activities when soils are susceptible to heightened risk of erosion. Limit ground-disturbing activities when soils are wet in order to avoid compaction of soils.
• Comply with the State of California for all proposed actions that would contribute to particulate matter emissions.
Prohibit activities that would create a water basin deficit/ decline.</td>
<td>Protection measures for both Groundwater Quality and Level Monitoring have been submitted to BLM and the FERC license-required managing agencies for review and comment, modified, and after addressing the comments filed with FERC on December 18, 2015. FERC approved and modified the Groundwater Level Monitoring Plan on April 11, 2016 and approved and modified the Groundwater Quality Plan on January 20, 2016.</td>
<td>The CMA, as written, would not allow for any activities in the Chuckwalla ACEC which use groundwater.

The FERC license requirements satisfy the resource management goals of the DRECP but the Project cannot comply with the specific CMA requirement, as the license, a VER, allows the project to use groundwater.</td>
</tr>
</table>

[10] The project is located in the Chuckwalla ACEC, designated in the DRECP. The DRECP includes CMAs which are specific to the Chuckwalla

CHAPTER 2:
BLM ACTION AND ALTERNATIVES

2.1 Introduction

Three alternatives are examined in this EA: the BLM will approve a land use plan amendment and issue a ROW grant; the BLM will approve a land use plan and issue a ROW grant with modifications, or, the BLM will not approve the land use plan and deny the ROW grant application.

2.2 Alternative A: Approve LUPA and Issue ROW Grant (Agency Preferred Alternative)

The BLM's preferred alternative is to adopt an amendment to the CDCA Plan and grant a ROW on federal lands administered by the BLM for construction and operation of the 500kV gen-tie line, water pipeline and lands within the Central Project Area. The gen-tie line and water supply pipeline routes are partly within and partly outside of lands designated within the CDCA Plan as corridors.

Project Facilities. The FERC-licensed Project consists of an upper reservoir, upper water conveyance system, powerhouse, lower reservoir, lower water conveyance system, transmission system, water supply system, water treatment system, and related ancillary facilities (Table 2-1). The upper and lower reservoirs will be constructed using two existing mine pits with the majority of operational equipment is located underground. Not all Project features are located on BLM-managed land. Figure 2-1 shows the Project area and Figures 2-2 and 2-3 show the Project's BLM ROW area and Project features.

The upper reservoir site includes: (1) a 191-acre reservoir (in the existing central mining pit) with a total storage capacity of 20,000 acre-feet and a useable storage of 17,700 acre-feet at an elevation of 2,485 feet; (2) a 1,300-foot-long, 120-foot-high saddle dam with a crest at elevation 2,490 feet on the south side of the reservoir and about 4,000 feet to the northwest, and another 1,100-foot-long, 60-foot-high saddle dam with a crest at elevation 2,490 feet on the western side of the reservoir; (3) a 100-foot-long spillway with a spillway crest at elevation 2,485 feet and a 100-foot-wide by 30-foot-long spillway stilling basin; (4) an upper reservoir spillway channel, about 4,000 feet-long; (5) a 14,000-foot-long section of Eagle Creek that would transport upper reservoir spillway flows to the lower reservoir; and (6) an upper reservoir inlet/outlet structure.

Table 2-1: Major Project Features, Eagle Mountain Pumped Storage Project.

Project Feature	Feature Data	Location
Hydroelectric Plant		Entirely underground, under BLM-managed lands
Total Rated Capacity	1,300 MW	
Number of Units	4 (Reversible)	
Unit Rated Capacity	325 MW	
Maximum Plant Discharge	11,600 cfs	
Pump/Turbine and Motor/Generator Unit Data		
Rated Head	1,410 feet	
Rated Turbine Output	319 MW	
Maximum Turbine Flow	2,900 cfs	
Operating Speed	333.3 rpm	
Generator Rating	347 MVA	
Low Pressure Upper Tunnel		Entirely underground, partially under BLM-managed lands, partially under private land
Diameter	29 feet	
Length	3,963 feet	Approximate
Shaft		Entirely underground except where daylights, under BLM-managed lands
Diameter	33 feet	
Length	1,348 feet	
High Pressure Lower Tunnel		Entirely underground, under BLM-managed lands
Diameter	29 feet	
Length	1,560 feet	
Tailrace Tunnel		Entirely underground, under BLM-managed lands
Diameter	33 feet	
Length	6,835 feet	
Powerhouse Cavern		Entirely underground, under BLM-managed lands
Height	130 feet	
Length	360 feet	
Width	72 feet	
Upper Reservoir		Primarily on private land
Dam Type	Roller-compacted concrete or a concrete faced dam with rock fill	
Volumes		
Total Reservoir Capacity	20,000 acre-feet	Approximate

Project Feature	Feature Data	Location
Inactive Storage	2,300 acre-feet	
Active Storage	17,700 acre-feet	
Operating Levels		
Minimum Operating Level	El. 2343	
Maximum Operating Level	El. 2485	
Water Surface Areas		
Water Surface Area at El. 2,343	48 acres	
Water Surface Area at El. 2,485	191 acres	
Dimensions of Dams	(URD-2 and URD-1)	
Structural Heights	60 feet and 120 feet	
Top Widths	20 feet (both dams)	
Crest Lengths	1,100 to 1,300 feet	
Crest Elevation	El. 2490 (both dams)	
Lower Reservoir		Primarily on private land
Dam Type	None	
Volumes		
Total Reservoir Capacity	21,900 acre-feet	
Inactive Storage	4,200 acre-feet	
Active Storage	17,700 acre-feet	
Operating Levels		
Minimum Operating Level	El. 925	
Maximum Operating Level	El. 1092	
Water Surface Areas		
Water Surface Area at El. 925	63 acres	
Water Surface Area at El. 1,092	163 acres	
Water Supply Pipeline (Including Well Piping)		Partially on BLM-managed land, partially on private land
Diameter	12 inch	
Length	1.3 miles	
Diameter	18 inch	
Length	3.3 miles	
Diameter	24 inch	
Length	10.7 miles	
Water Supply Wells		Private land
2,000 gpm; 1,000 horsepower Vertical Turbine Pumps	3	
Electrical distribution line (approximately 13 kV)	Lines will be located parallel and adjacent to access roads.	Partially on BLM-managed land, partially on private land.

Project Feature	Feature Data	Location
Power Gen-Tie Line		Partially on BLM-managed land, partially on private land
One Double Circuit	500 kV	
Length	16.4 miles	
Monitoring and Seepage Control Wells[11]		Partially on BLM-managed land, partially on private land
Monitoring wells	Approximately 16 new monitoring wells in addition to monitoring of existing wells	
Seepage control wells	Approximately 22 new seepage control wells in addition to use of existing wells	
Extensometers	Approximately 2 new	

The two saddle dams would be constructed of either roller-compacted-concrete, or a concrete faced dam with rock fill, to be determined during the final design and engineering process.

The upper water conveyance system would include: (1) a 29-foot-diameter by 3,963-foot-long upper pressure tunnel; (2) a 33-foot-diameter by 1,348-foot-long vertical tunnel shaft; (3) a 90-foot-diameter by 165-foot-high underground surge tank attached to the vertical tunnel shaft; (4) a 29-foot-diameter by 1,560-foot-long lower tunnel; and (5) a manifold that transitions from the lower tunnel to four 15-foot diameter by 500-foot-long penstock tunnels. The powerhouse facility would consist of: (1) a 72-foot-wide, 130-foot-high, and 360-foot-long underground powerhouse; (2) four reversible pump-turbine units rated at 325 MW each, for a total installed capacity of 1,300 MW; and (3) a separate 46-foot-wide, 40-foot-high, and a 431-foot-long transformer gallery. The lower reservoir site would include: (1) a 163-acre reservoir (in the existing eastern mining pit) with a total storage capacity of 21,900 acre-feet and a useable storage of 17,700-acre-feet at elevation 1,092 feet; (2) a reservoir inlet/outlet structure; (3) a 15-foot-wide reservoir spillway with a spillway crest at elevation 1,094 feet; and (4) a reservoir spillway discharge channel extending 6,665 feet from the spillway to an alluvial fan in the Chuckwalla Valley.

[11] Details of groundwater monitoring well designs and locations are found in Table 2 of the Groundwater Level Monitoring Plan approved by FERC April 11, 2016 and Table 2 of the Groundwater Quality Monitoring Plan approved by FERC January 20, 2016

Figure 2-1: Project Vicinity and Land Ownership.

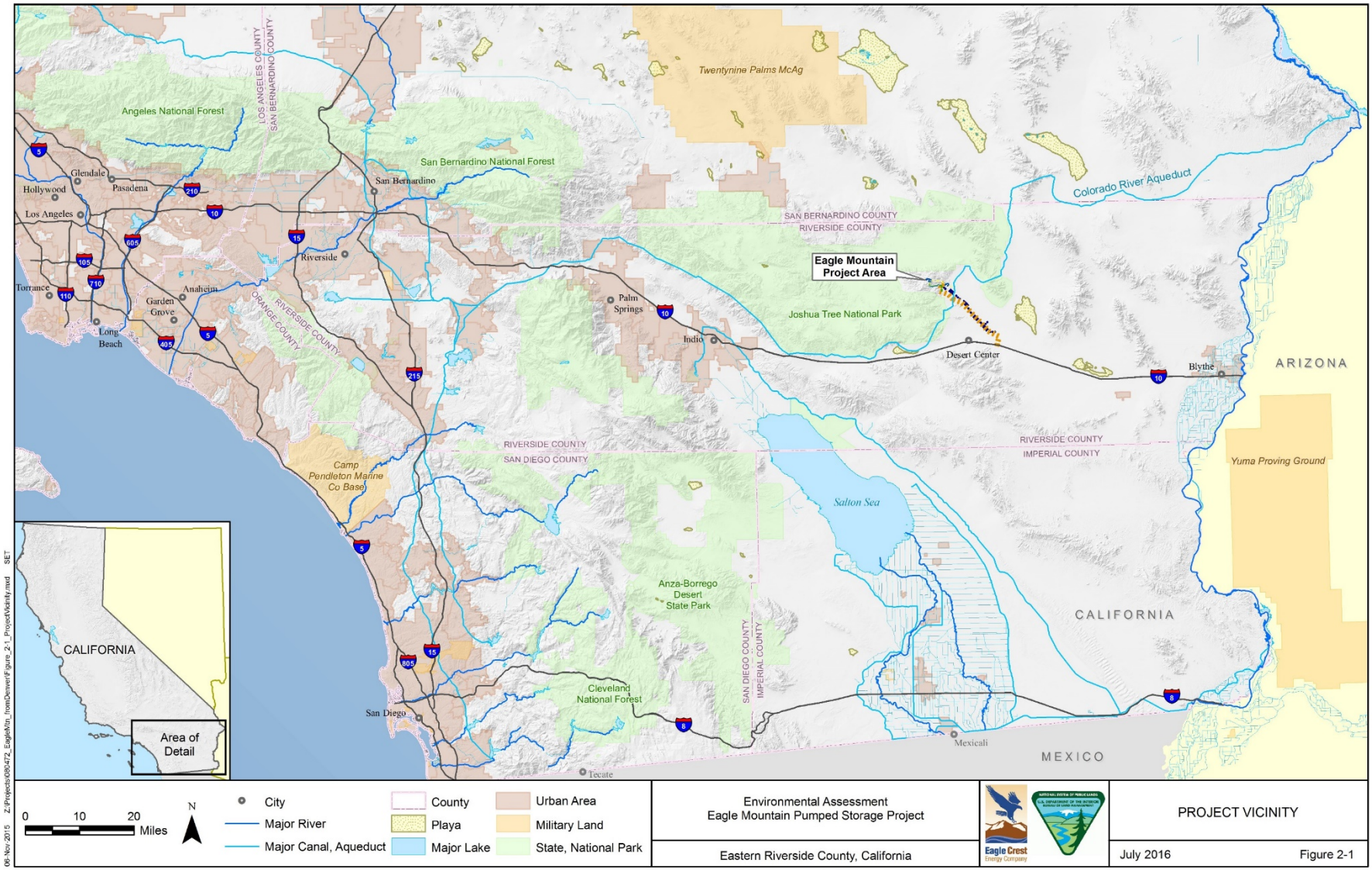


Figure 2-2: Project Location – North Half.

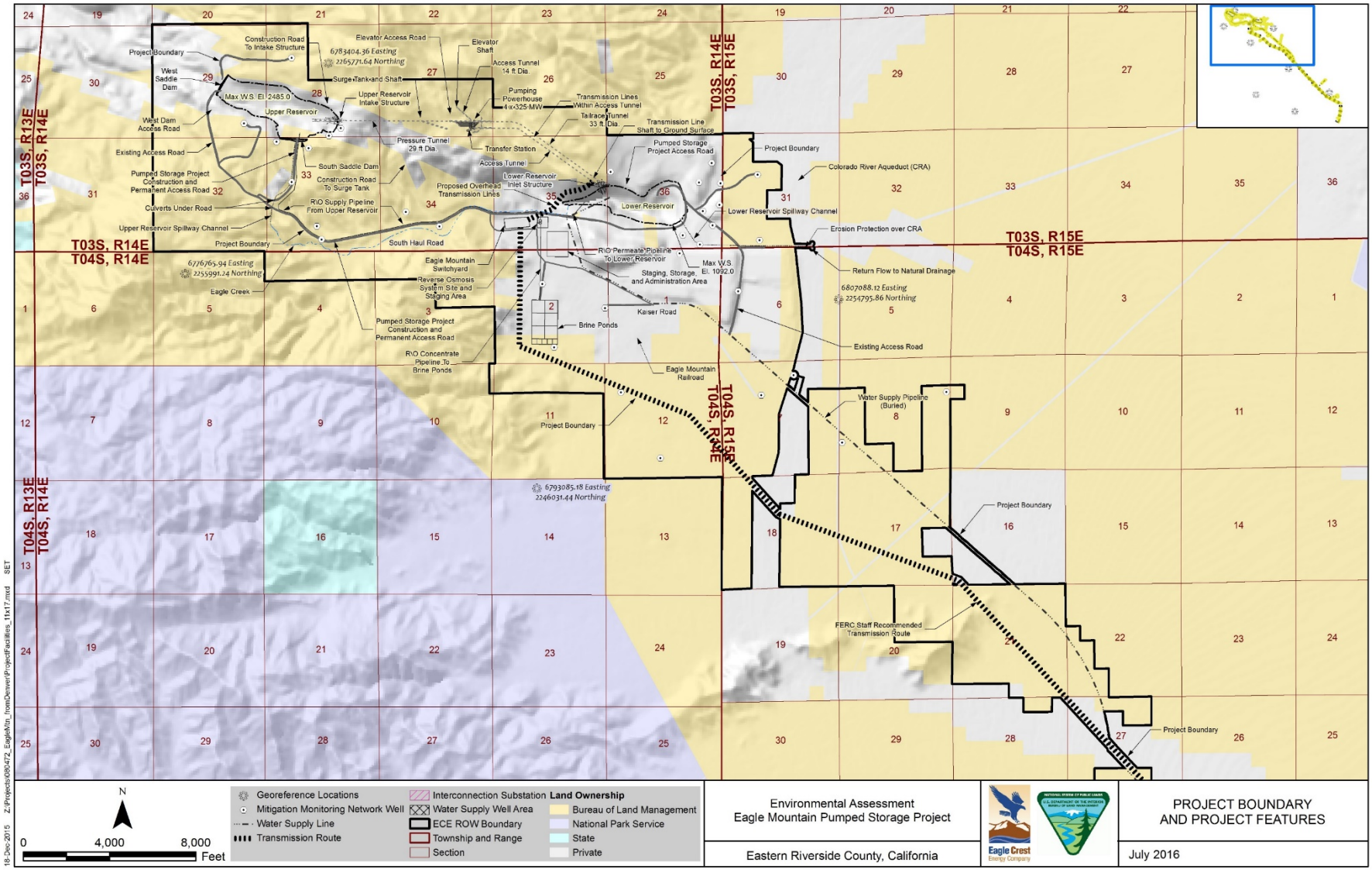
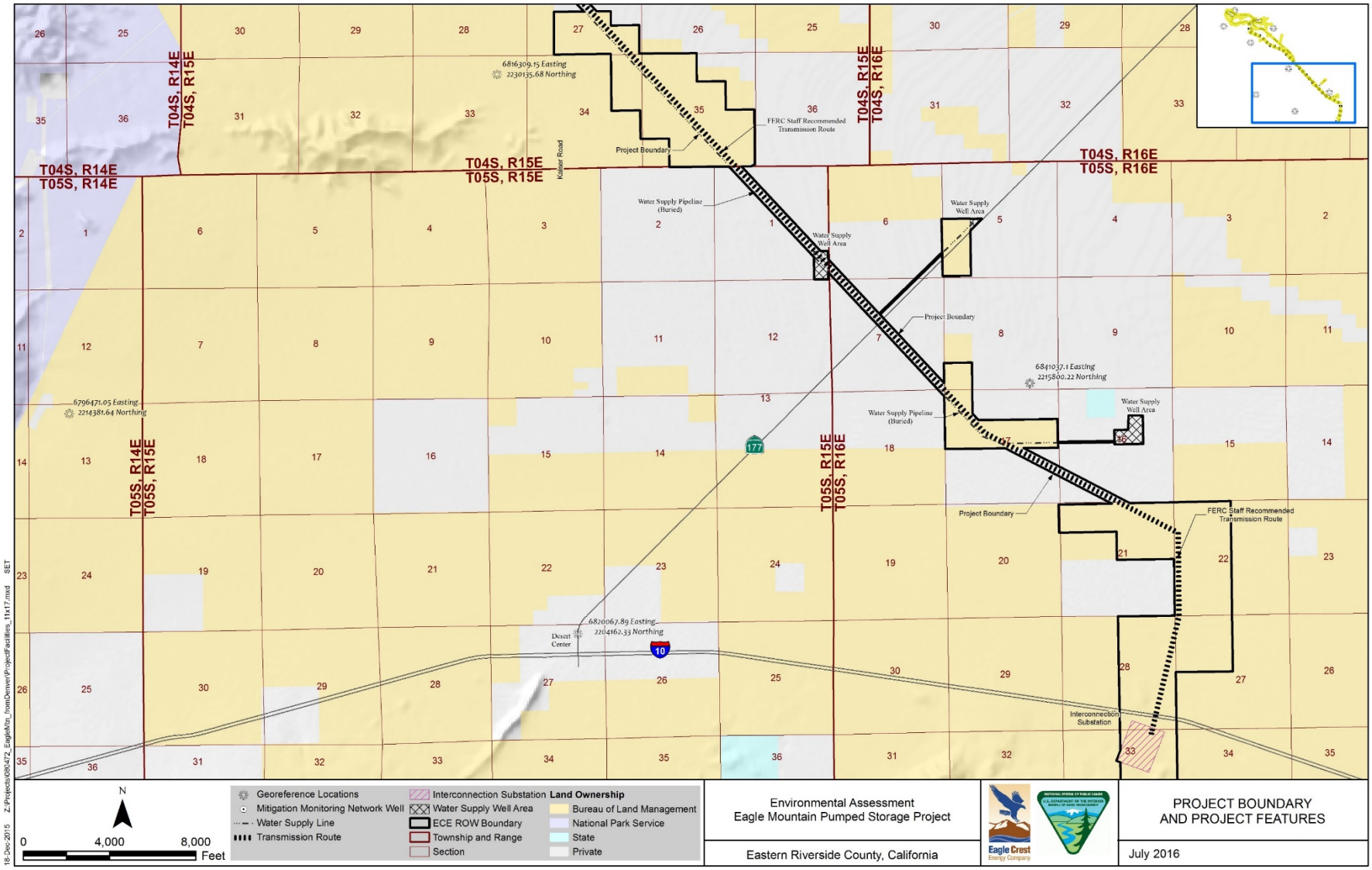


Figure 2-3: Project Location – South Half.



The lower water conveyance system includes: (1) four, 17-foot-diameter by 75-foot-long draft tube tunnels; (2) a manifold that transitions from the draft tube tunnels to the tailrace tunnel; and (3) a 33-foot-diameter by 6,835-foot-long tailrace tunnel. The transmission system would include: (1) four, 6,000-foot-long, 18-kV underground transmission cables that extend through the powerhouse access tunnel and a vertical transmission shaft to the ground surface and then 4,000 feet overhead to a switchyard; (2) a 500-foot-wide by 1,100-foot-long switchyard; and (3) a 16.4-mile-long, double circuit 500-kV gen-tie line from the switchyard to the existing Red Bluff interconnection collector substation.

The water supply system includes: (1) three water supply wells with pumps constructed on privately owned property; and (2) an underground water supply pipeline, ranging from 12 to 24 inches in diameter, totaling 15.3 miles, and extending from the well properties to the lower reservoir. Wells will be equipped with electrical drops to provide power.

The water treatment system includes: (1) a reverse osmosis system; (2) pipelines from the upper and lower reservoirs to the reverse osmosis facility; and (3) desalination facilities with piping from the reverse osmosis facilities.

The related ancillary facilities (Tables 2-1 and 2-2) include: (1) a 28-foot-wide, 28-foot-high, by 6,625-foot-long access tunnel to the underground powerhouse; (2) about 6 miles of permanent construction and access roads partially located on BLM lands; (3) staging, storage, and administration areas near the switchyard; and (4) appurtenant facilities including emergency back-up generators and portable generators needed for construction.

Table 2-2: General Characteristics of Additional Project Equipment, Eagle Mountain Pumped Storage Project.

Equipment	Description
Upper Reservoir Inlet/Outlet Gate and Hoist	Fixed wheel leaf type gate operated by electric/ hydraulic remote controlled hoist.
Upper Reservoir Inlet/Outlet Trashracks	60 feet x 84 feet of steel bar trashrack.
Lower Reservoir Inlet/Outlet Gates and Hoist	Fixed wheel leaf type gate operated by electric/ hydraulic remote controlled hoist.
Lower Reservoir Inlet/Outlet Trashracks	65 feet x 84 feet of steel bar trashrack.
Pump/Turbine Inlet Valves	Four 108-inch diameter spherical valves, with full closing capability.
Pump/Turbine Draft Tube Gates	Four 10 feet x 14 feet high presser slide gates operated by electric/hydraulic hoist.
Powerhouse Bridge Crane	2 x 300 ton overhead, top running, electric bridge crane.
Draft Tube Gates Crane	30 ton Under-hung electric bridge crane.
Auxiliary Powerhouse Cranes and hoist	Electric monorail hoists sized and located for erection and maintenance of equipment in addition to the Powerhouse Bridge Crane.
Cooling Water System	Water intake from and discharge to the tail-race tunnel to provide cooling for pump/turbines, motor/generators, transformers, compressors and Powerhouse HVAC compressors.
Compressed Air Systems	Compressors, pipe, and accessories to provide air for draft tube depression, station service, motor generator brakes and high pressure governor.
Drainage Systems	Plant drains, piping, pumps, sump, and oil separating facilities.
Unit Dewatering and Filling	High capacity pumps, sump, pipe, and accessories connecting the unit draft tubes, pressure tunnel and tailrace tunnel.
Fire Protection Equipment	Detection, alarm, isolation and extinguishing equipment.
Potable Water and Sanitary Services	Extend existing nearby potable water system to plant.
	Pump sanitary wastes to surface and transfer to existing nearby sewer systems to be treated.
Heating, Ventilation, and Air Conditioning	Central HVAC system for control room, communication rooms, workshop and personnel spaces.
	Ventilation exhaust system for powerhouse cavern, transformer cavern and electrical equipment areas.
	Ventilation system for cable/emergency exit tunnel.
Elevator	Two electric personnel elevators.
Diesel Generator	1,000 kW emergency, diesel fueled generator.

Equipment	Description
Unit Transformers	Transformers to consist of two banks of three 500/18 kV, 167 MVA, single-phase, three winding transformers. One spare will be provided.
Bus	18 kV, isolated phase bus duct.
Generator Circuit Breakers	Metal enclosed SF6 type.
18 kV Switchgear	Generator/motor circuit breakers and motor start circuit breakers SF6 type, motorized phase reversal switches, motorized disconnect switches.
Outdoor Switchyard	500 kV switchyard, open-air bus type including 500 kV cable terminations, disconnect switches, coupling capacitor voltage transformers, current transformers, power line carrier line traps, surge arrestors and transmission line termination structures.
Station Service Power	480 volt, 3-phase, 60 hertz. Transformers will be 2,000 Kilovolt amps, cast-resin dry type. Switchgear will consist of draw-out-type air circuit breakers. The system will include major control centers, panel-boards, and associated accessories. DC system for control and monitoring will consist of batteries, chargers, and the distribution system.
Controls	Fully distributed industrial grade control, monitoring, and protection system for complete manual and automatic operation including instrumentation, alarms, hardcopy recording, and limited supervisory control. Fiber and microwave link for real-time connection and control by the California Interconnection System Operator.

BLM Lands in Central Project Area On September 25, 1997, the BLM signed a ROD approving a land exchange and ROWs for the Eagle Mountain Landfill and Recycling Center Project (the landfill project). In 1999, the BLM completed the land exchange with Kaiser in which BLM conveyed scattered public lands in and around the Central Project Area to Kaiser and in return, received private lands from Kaiser containing habitat for threatened and endangered species. BLM also conveyed the federal reversionary interest in the Eagle Mountain Townsite (460 acres of land previously conveyed to Kaiser in 1955 for mining related purposes) to Kaiser.

Kaiser applied for the ROWs and proposed the land exchange in order to develop the landfill project and subsequently agreed to sell the landfill project to the Sanitation Districts of Los Angeles County in 2000. However, the sale was contingent upon resolution of the pending federal litigation and on May 22, 2013, the Sanitation Districts announced they would not pursue acquisition of the landfill project, effectively ending the viability of the landfill project.

On December 18, 2014, the U.S. District Court signed a final judgment and order (Order) on the Eagle Mountain Land Exchange in Riverside County. The Order, mutually agreed to by BLM, Kaiser, and the National Parks Conservation Association, resulted in a reversion of lands conveyed to Kaiser through the 1999 Eagle Mountain land exchange back to the BLM. The Order also confirms that lands conveyed through the exchange to the BLM from Kaiser will remain in federal ownership. Certain mining claims and mill sites which Kaiser relinquished as part of the land exchange were reinstated in the Court's decision. Figure 2-2 reflects current BLM-managed lands in the Central Project Area, since the conveyance of lands back to BLM.

Activities on BLM-managed Lands. Activities on BLM-managed lands (Table 2-1) that would occur upon BLM's decision to amend the CDCA Plan and issue a Project ROW include the following:

- Construction of new access roads within the Central Project Area
- Improvements to existing access roads
- Construction and operation of monitoring wells and seepage recovery wells
- Construction and operation of the south saddle dam for the upper reservoir
- Construction and operation of a surge tower
- Construction and operation of underground water conveyance tunnels and powerhouse
- Construction and operation of upper reservoir and lower reservoir spillways
- Construction and operation of new gen-tie line, including:
    - Installation of new steel lattice structures
    - Temporary use of equipment staging areas, within the gen-tie line ROW
    - Pulling and tensioning site for the gen-tie line, within the Project ROW
- Construction and operation of a water supply pipeline
- Electrical drops to wells located on privately owned lands
- Revegetation of areas disturbed by construction activities

Table 2-3: Acreage of BLM-managed Lands Associated within the Eagle Mountain Project Boundary.

	Approximate Acres of BLM Land	
Feature	**Temporary Use**	**Permanent Use**
Transmission alignment – acres inside project boundary ROW	509.5 (full 400' wide corridor on BLM-managed land Not all acreage will be disturbed.)	12.8 Acres*
Water pipeline	34.9**	17.45**
Reservoirs and dams	23.5	23.5
Underground features (conveyance tunnels and powerhouse)***	1	0.15
Other Central Project Area features****	226.6	226.6
Total	795.5	280.5

Notes for Table 2-3:

[1] Calculations are intended to be worst-case scenario. Assumptions built into calculations include:

* The gen-tie permanent acreage is estimated 8.4 acres of new access road (1.7 miles of 20' corridor) plus 4.4 acres of towers and stub roads. Tower and stub road acreage is assumed to be 64% on BLM land.

** Entire water supply pipeline ROW width is assumed to be disturbed for the temporary disturbance and half of the ROW width is assumed to be disturbed for the permanent disturbance. Powerlines to wells will be within the pipeline ROW.

*** Surge tank/shaft are only features at surface, assumed to be 90' diameter

**** Access roads total 22 acres, monitoring and seepage control wells total 17 acres, brine ponds 22 acres, improvements to Eagle Creek 56 acres (not anticipated to be required), substation 76 acres, spillways 34 acres

For the other Central Project Area features, used the same values for temporary and for permanent:

- 200' wide corridor for temporary and permanent disturbance on Eagle Creek.
- 200' buffer around the brine ponds footprint (on BLM-managed land), minus part of the 1-acre circle for the monitoring well
- 20' wide corridor for new roads
- 200' wide corridor for spillways
- 1 acre for monitoring wells, accounts for equipment staging and storage during construction

Construction of 500-kV Gen-tie Line. BLM would amend the CDCA Plan to allow a gen-tie line and water supply pipeline outside of a designated corridor. This would allow the construction of an interconnection transmission system that would transmit Project power to SCE Red Bluff substation via a 16.4-mile-long, double circuit 500-kV transmission interconnection. The proposed gen-tie line interconnection is 3.6 miles from the Central Project Area to an intersection with the Colorado River Aqueduct. At this point, the gen-tie line interconnection would parallel an existing 160-kV SCE gen-tie line for 10.9 miles southeast to a point southeast of the Desert Center Airport, then south for 1.9 miles to the Red Bluff substation. The new gen-tie line ROW would be approximately 200 feet wide.

For a typical transmission tower site, a hole is excavated, and a foundation is constructed. The type and size of the foundation will vary depending on soil types and specific requirements of the towers. Lattice-steel towers are either assembled at the tower site and lifted into place by a large crane or assembled at a staging area and set in place by a large sky-crane helicopter. The towers are bolted to the footings.

Upon completion of the CDCA PA, the Licensee would consult with SCE for transmission interconnection requirements.

Construction of the Water Supply Pipeline. The CDCA PA would also include the water supply pipeline; an underground pipe ranging from 12 to 24 inches in diameter, totaling 15.3 miles. The pipe would be buried approximately 4 feet deep and would parallel the existing 160-kV SCE gen-tie line and new gen-tie line ROW for approximately 8 miles, then parallel the Eagle Mountain Road ROW for another approximately 7.3 miles. The new pipeline ROW would be approximately 60 feet-wide (Figures 1-1 and 2-2).

The water supply pipeline corridor consists primarily of undeveloped and previously farmed desert land. The southern third of the proposed route would cross several private parcels with inactive agricultural fields. The remainder of the route would consist of undeveloped federal land managed by BLM parallel to the existing 160-kV SCE gen-tie line extending west to Eagle Mountain Road. The final segment of the proposed route lies parallel to Eagle Mountain Road, and as the proposed route approaches the Eagle Mountain area, it passes adjacent to the recently completed Desert Sunlight Solar Farm (DSSF). Finally, the pipeline route would cross the Colorado River Aqueduct and surrounding Metropolitan Water District lands and easement areas before reaching the lower reservoir. Construction activities would include excavation of existing soils, placement of the water supply pipe, and burial with the excavated soil material.

Restoration and Revegetation of Disturbed Areas. All areas disturbed by construction activities (Table 2-3) will be revegetated in the manner described in the Applicant's Revised Revegetation Plan required by Article 409 of the FERC License. Article 409 states that,

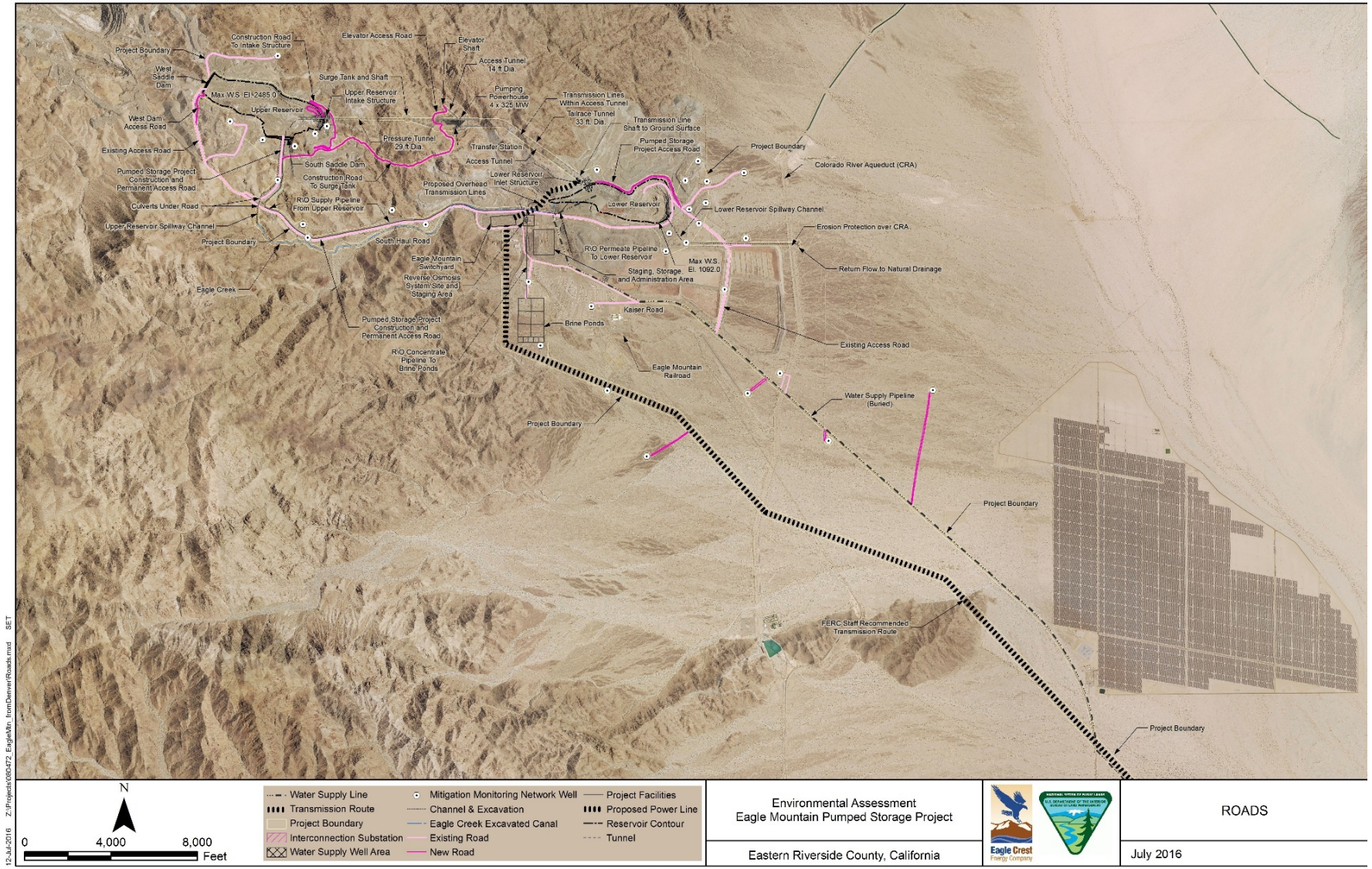
> *at least 90 days prior to the start of construction, the Licensee shall revise its Revegetation Plan filed on October 27, 2009, and file the revised plan with the Commission (and the BLM for lands managed by the BLM) for approval. The revised plan shall include the following additional items: (1) identification of the total acres of proposed disturbance as identified in the final construction plans filed pursuant to Article 302; (2) stipulation that any hay, straw, or topsoil brought to the site be certified weed-free; (3) criteria for measuring success of revegetation efforts; (4) provisions for monthly irrigation of transplants for a 2-year period; (5) a schedule for implementing the plan; and (6) a schedule for filing reports on the progress of revegetation.*

The Applicant is required to prepare the plan after consultation with the USFWS, BLM, NPS, State Water Board, and CDFW.

Establishment of Staging Areas. Temporary staging areas will be established within the Project boundary or on private land under the control of Eagle Crest. Staging areas would be used to store and stockpile new materials, as well as other construction-related equipment. The size of the staging areas would be based on the types of sites available.

Access Road Work. Roadway improvements would be needed along approximately 14 miles existing roads to provide suitable access for equipment to the surge tower and some monitoring well locations. Improvements could involve grading and blading to shape existing surfaces and turnouts. An estimated 10 miles of new roads will be needed in the Central Project Area (*see* Figure 2-4, below). Work associated with new access road construction would include grading, removal of existing vegetation, and installation of drainage structures. Most roads would be constructed to a finished 14-foot width. Disturbance area is estimated to encompass a 20-foot width.

Figure 2-4: Existing and New Project Roads within Central Project Area.



Operation and Maintenance. Ongoing operation and maintenance of the gen-tie and pipeline ROWs would include periodic inspection and repair of equipment, and clearing of vegetation only when needed for Project safety.

Construction Timing and Equipment. Construction of the gen-tie line and water supply system could occur simultaneously, but the water supply system construction is planned to be completed first and would require approximately 2 years. Construction of the gen-tie line would require approximately 4 years. Typical equipment used for construction would include concrete trucks, bulldozers, excavators, dump trucks, cranes, road graders, and work trucks. The peak daily number of concrete trucks (onsite) is estimated to be 210. This estimate assumes the trucks are traveling to and from an on-site batch plant. The peak daily number of heavy trucks (onsite) is estimated to be 258. This estimate assumes the trucks are hauling materials to and from locations on-site. Construction crews would be working up to 10-hour days, 5 to 6 days a week.

Decommissioning of Facilities. FERC, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment, and power lines within the Project boundary and to take any such other action necessary to restore the Project waters, lands, and facilities remaining within the Project boundary to a condition satisfactory to the BLM on BLM-managed land or FERC's authorized representative on non-BLM-managed land or to provide for the continued operation and maintenance of non-power facilities and fulfill such other obligations under the License.

The Project has a minimum expected lifetime of 50 years, with an opportunity for a lifetime of an additional 50 years or more with equipment replacement and repowering. When the Licensee concludes operations, all components of the system would be recycled to the extent feasible. The components would be deconstructed and recycled or disposed of safely in accordance with contemporary practices and regulations applicable at the time of decommissioning, and the Project area could be converted to other uses in accordance with applicable land use regulations in effect at the time of closure. As required by BLM ROW regulations, a detailed Decommissioning and Reclamation Plan (Decommissioning Plan) will be developed in a manner that protects public health and safety, is environmentally acceptable, and conforms to FERC authority under the FPA.

Decommissioning Plan. Conditions are likely to change over the course of a lifespan of 50 years or more, and a final Decommissioning Plan would be developed in the future prior to facility closure based on conditions as they occur at that time. The reclamation measures provided in the Decommissioning Plan would be developed to ensure protection of the environment and public health and safety and to comply with applicable laws, ordinances, regulations, and standards.

In general, the Project Decommissioning Plan for BLM-managed lands would address:

- Proposed decommissioning and reclamation measures for the Project and associated facilities
- Activities necessary for site restoration/re-vegetation of developed areas, if removal of equipment and facilities is needed

- Procedures for reuse, recycling, or disposal of facility components; collection and disposal of hazardous wastes; and use or disposal of unused chemicals
- Costs associated with the planned decommissioning activities and the source of funding for these activities
- Conformance with applicable laws, ordinances, regulations, and standards

The Decommissioning Plan would be developed in coordination with the BLM, consistent with BLM regulations and submitted to the BLM for review and approval in consultation and concurrence with FERC prior to final closure of the facility.

Performance and Reclamation Bond. If the Project is approved, any ROW authorizations would include a required "Performance and Reclamation" bond to ensure compliance with the terms and conditions of the ROW authorization, consistent with the requirements of 43 CFR 2805.12(g). The "Performance and Reclamation" bond would consist of three components: (1) hazardous materials; (2) decommissioning and removal of improvements and facilities from BLM-managed lands; and (3) addressing reclamation, revegetation, restoration, and soil stabilization on BLM-managed lands.

2.3 Alternative B: No Action Alternative

Under the No Action alternative, the BLM would not approve a PA to the CDCA Plan, and would not issue a ROW grant for the construction and operation of the portions of the Project on federal lands managed by the BLM.

2.4 Alternatives Considered but Eliminated from Further Analysis

2.4.1 *BLM Approves a Land Use Plan and Issues a ROW Grant, With Modifications*

BLM considered alternatives of granting the ROW with modifications. One potential modification to the ROW grant would be for BLM to approve the land use plan amendment and issue the ROW grant for the gen-tie line in an existing utility corridor. One corridor is adjacent to the Desert Sunlight Solar Farm's gen-tie line. This existing gen-tie line lies parallel to, and west of, Kaiser Road, and then extends east in the vicinity of Desert Center to a point north of the Red Bluff substation from which it extends across Interstate-10 to its interconnection point at the Red Bluff substation.

This alternative is not suitable for selection because of existing and future gen-ties in the corridor heading south from the Desert Sunlight Solar Farm. The corridor is full, and there is no room for additional lines. BLM will not widen the corridor to accommodate another gen-tie line as the lands to the west of the corridor are an ACEC and California Desert National Conservation Lands (NCL). New transmission and interconnect (i.e. generation tie lines) lines are allowed in designated corridors only in NCL lands.

Another alternative considered by BLM involved realigning the project's gen-tie line and water supply pipeline within the CDCA Plan designated utility corridor (*see* Figure 1-2). The designated

corridor extends south and east of the Central Project Area, crossing the CRA and a small portion of the eastern-most boundary of the JTNP. This alternative was rejected as infeasible since it would require crossing more environmentally sensitive lands – including the DWMA, ACEC, NCL, and JTNP. This corridor is also unsuitable for the water supply pipeline that extends from three specific well sites located on private land in the Chuckwalla Valley.

Two additional alternatives were considered by BLM in preparation of this EA. The first includes limiting the ROW grant to those lands included within the Federal Power Act (FPA) reservation (the boundary of the FERC licensed project). The second includes granting a ROW limited to those lands identified in the original ROW application, rather than the most current amended ROW application. In each case, these alternatives were dismissed as being non-responsive to the ROW application, and because they do not satisfy the purpose and need of the ROW application to provide some limited flexibility to adjust the final footprint of the underground tunnel alignment and powerhouse in response to final engineering and geotechnical considerations.

In consideration of these alternatives and examination of the assessment that was undertaken in the selection of the preferred alternative in both the FERC FEIS and SWRCB EIR analyses, BLM concludes that the water supply pipeline and gen-tie line alignments for the FERC-licensed project also qualify as the preferred alternative for purposes of the BLM ROW.

2.4.2 *Alternatives Considered but Dismissed by FERC and the State Water Board*

Several alternatives for the Project were analyzed through the course of state and federal planning. The FERC-licensed gen-tie line route described in this EA was selected by FERC (and by the State Water Board in its FEIR) for the Project because it was determined to the be environmentally-preferred alternative after public scoping, agency consultation, technical studies, and analyses conducted over several years of planning. Specifically, the preferred alternative avoided the BLM designated Desert Wildlife Management Area (DWMA), (now also designated an ACEC and NCL lands), west and south of Kaiser Road, avoided land use impacts on the Lake Tamarisk community, and is collocated for most of its alignment with an existing transmission line. The FERC EIS and the State Water Board EIR describe alternatives considered for transmission but eliminated these from further analysis as they were determined to not be reasonable alternatives (FERC EIS pp. 40-41, and State Water Board, 2013 pp. 4-24 to 4-25, respectively).

Alternative transmission interconnections considered included:

- A gen-tie line to interconnect at the Devers Substation, near Palm Springs. This would have required a gen-tie line of 83 miles, through an already crowded transmission corridor. Obstacles to this alternative include cost for construction; difficulty of obtaining ROWs, particularly in the communities of Indio and Cathedral City; potentially notable impacts to the natural and human environment; and cultural resource concerns of the Aqua Caliente Band of Cahuilla Indians (FERC EIS p. 40).

- A gen-tie line to interconnect at the Midpoint Substation. This proposed route was 50.5 miles from the Project site to the point of interconnection. The proposed route crossed the Chuckwalla Valley Dune Thicket ACEC, and required a highly visible crossing of Interstate 10. The length of the route and issues associated with crossing these two areas made this route impractical (FERC EIS p. 41).

- Installation of gen-tie lines on existing transmission towers owned by the Metropolitan Water District. This is not a feasible alternative given the size of the towers, the size and weight of the new lines, and alignments of existing gen-tie lines in the area (FERC EIS p. 41).

- A gen-tie line route along Eagle Mountain Road to a substation site located north of the I-10 near Desert Center. This alternative was considered but dismissed due to cultural resource concerns related to the historic (World War II) Desert Training Center hospital site. In addition, this location may have conflicted with an existing high pressure gas line (FERC EIS p. 41). Further, BLM-managed lands on either side of Eagle Mountain Road are a designated DWMA, ACEC, and NCL, containing high quality desert tortoise habitat.

The State Water Board considered additional alternatives in their environmental review of the Project, including:

- A gen-tie line route along Eagle Mountain Road to a proposed western Red Bluff substation. This route was determined to have greater impacts to desert tortoise and cultural resources than either the Project or the eastern Red Bluff substation location. In addition, the Eastern Red Bluff substation location was selected by the BLM as the interconnection location for the proposed solar energy projects under development in the Chuckwalla Valley. Construction has been completed on the Eastern Red Bluff Substation. Therefore, interconnection of the Project at the Eastern Red Bluff site would have less environmental impact than any other possible interconnection location (State Water Board, 2013 pp. 4-48).

- A gen-tie line route east from the Central Project Area to Kaiser Road, then parallel (and west of) Kaiser Road to south of the town of Lake Tamarisk, then east for about 6 miles, then south to the Eastern Red Bluff substation site. This route would have greater impact to visual resources, cultural resources, desert tortoise, and designated DWMA than the proposed gen-tie line route (State Water Board, 2013 pp. 4-46 – 4-47). This route was selected and utilized by the Desert Sunlight Solar Farm, with BLM approval of a CDCA Plan Amendment.

The proposed ROW route under consideration in this EA for the gen-tie was identified in both the FERC EIS and the State Water Board's EIR as the environmentally superior alternative, taking into consideration a variety of resource concerns, engineering feasibility, location relative to other transmission lines and the existing Red Bluff substation. As to the Central Project Area, the FERC FEIS found it unlikely that another Project location would meet the physical requirements of access to high-voltage transmission, an existing, previously disturbed topography to hold the upper and

lower reservoirs with sufficient elevation and minimal distance to limit costs and environmental effects associated with developing pumped hydropower energy storage. FERC FEIS at A-8 to A-9.

CHAPTER 3:
AFFECTED ENVIRONMENT

3.1 Air Quality

The FERC EIS (pp. 253-261) describes the air quality standards that both California and the federal government have adopted for criteria pollutants. Areas can be designated as either in attainment, non-attainment, or unclassified. Table 3-1 depicts 2015 levels for state and federal criteria pollutants.

Table 3-1: Selected California and Federal Ambient Air Quality Standards (2015). (Source: CARB 2015; EPA 2015.)

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone (O3)	1 hour	0.09 ppm	No standard
Ozone (O3)	8 hour	No standard	0.075 ppm
PM10	24 hour	50 ug/m3	150 ug/m3
PM10	No standard	20 ug/m3	No standard
PM2.5	Annual	12 ug/m3	12 ug/m3
PM2.5	24 hour	No standard	35 ug/m3
Carbon monoxide (CO)	1 hour	20 ppm	35 ppm
Carbon monoxide (CO)	8 hour	9 ppm	9 ppm
Sulfur dioxide (SO2)	1 hour	0.25 ppm	75 ppb
Sulfur dioxide (SO2)	3 hour	No standard	0.5 ppm
Nitrogen dioxide	1 hour	0.18 ppm	100 ppb
Nitrogen dioxide	Annual	0.030 ppm	53 ppb

The proposed ROW and associated features are located in the Mojave Desert, an area monitored and managed by the South Coast Air Quality Management District (SCAQMD). As described in Table 3-2 (from the FERC EIS p. 257), air quality is not within established ambient pollutants levels for ozone (O_3) and respirable particulate matter ($PM_{2.5}$) in this area but in attainment for all other criteria pollutants (SCAQMD, 2015).

Table 3-2: Project Area Designations in 2010 under National Ambient Air Quality Standards and California Ambient Air Quality Standards.

Designation by:	CO	PM_{10}	$PM_{2.5}$	O_3	NO_2	SO_2	Pb
NAAQS (Source: EPA, 2010)	A	A	A	A	A	A	A
California AAQS (Source: CARB, 2010)	U	N	U	N	A	A	A

Notes for Table 3-2:
A – attainment
CO – carbon monoxide

N – non-attainment
NO_2 – nitrogen dioxide
O_3 –ozone
Pb – lead
$PM_{2.5}$ – fine particulate matter
PM_{10} – respirable particulate matter
SO_2 – sulfur dioxide
U – unclassified (treated as attainment)

3.1.1 *Climate Change*

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs, in reference to the fact that greenhouses retain heat. Principal GHGs include carbon dioxide (CO_2), methane, nitrous oxide, and sulfur hexafluoride from high-voltage power equipment; and hydrofluorocarbons and perfluorocarbons from refrigeration/chiller equipment. Because these different GHGs have different warming potential (i.e., the amount of heat trapped by a certain mass of a GHG), and CO_2 is the most common reference gas for climate change, GHG emissions often are quantified and reported as CO_2 equivalents (CO_2e). For example, sulfur hexafluoride, while representing a small fraction of the total GHGs emitted annually worldwide, is a very potent GHG, with 22,800 times the global warming potential of CO_2. Therefore, an emission of 1 metric ton (1,000 kilograms) of sulfur hexafluoride would be reported as an emission of 22,800 metric tons CO_2e. Large emissions sources are reported in million metric tons of CO_2e.

Emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations, widely believed to cause climate change globally. "*Climate change is a particularly complex challenge given its global nature and the inherent interrelationships among its sources, causation, mechanisms of action, and impacts*" (CEQ, 2016).

The California Air Resources Board (CARB) found that transportation was the source of 36 percent of the state's GHG emissions, followed by industrial sources at 21 percent, and electricity generation at 20 percent (CARB, 2016). The Project is a hydropower energy storage facility that will not emit GHGs during operation and can support the integration of non-GHG emitting renewable energy sources.

3.2 Biological Resources

3.2.1 *Vegetation*

Biological resources in the proposed gen-tie line and water supply pipeline and Central Project Area ROW include native and disturbed habitat, noxious species, wildlife, human subsidized predators, and special-status or sensitive species. The FERC EIS (pp. 115-144) defines these resources and describes results of surveys and records reviews for habitat and species presence or abundance. A

BO on federally-listed Threatened and Endangered Species was issued by the USFWS on April 10, 2012 (USFWS, 2012). The BO analyzes the effects of the Project on the threatened Sonoran desert tortoise (*Gopherus agassizii*) and its designated critical habitat in accordance with Section 7 of the ESA, as amended (16 U.S.C. 1531 et seq.).

Habitat types within the gen-tie line and water supply pipeline and Central Project Area ROW consists of Sonoran Creosote Bush Scrub, Desert Dry Wash Woodland, and disturbed habitat (FERC FEIS pp. 118-119). The majority of the Central Project Area is characterized as heavily disturbed land that was once the Eagle Mountain Mine. The Central Project Area consists of two mining pits, overburden piles, tailings piles and ponds, old access roads (paved and unpaved), and other features associated directly with the former mining operations, as well as parts of the old company town site (USFWS, 2012). Biological surveys of the Central Project Area conducted in May 2016 confirmed the heavily disturbed habitat conditions within the mined lands, with higher quality habitat in upland areas between the mine pits and tailings piles, and around the margins of the mine site.

Some of the linear components of the Project would occur on public land managed by the BLM. Eagle Crest conducted habitat and desert tortoise surveys along these portions of the linear components, and added surveys of the Central Project Area in May 2016. A joint site tour of the Central Project Area was conducted with USFWS and Eagle Crest in 2016. The proposed water supply pipeline route is largely within the proposed ROW corridor for the gen-tie line, though segments of the water line would be on private land. Upland areas along the proposed linear facilities are characterized by typical creosote bush scrub along with numerous annual plants that provide quality forage for desert tortoises. A mix of creosote bush scrub and microphyll woodlands typify the gen-tie line ROW between the Central Project Area and Kaiser Road, and the initial approximately 2 miles of the ROW that parallel the existing 161-kV gen-tie line. From that point to State Route (SR) 177, the proposed gen-tie line route runs through abandoned jojoba agricultural fields. Although desert tortoises have been documented transiently using jojoba fields, such lands are considered poor habitat. An existing dirt access road runs along the entirety of the proposed gen-tie line route between Kaiser Road and SR 177. A second dirt road exists within the proposed ROW corridor from SR 177 to the Red Bluff Substation (USFWS, 2012 p. 27).

Along the broad bajada (a broad slope of coalescing alluvial fans extending along the base of a mountain range) traversed by the proposed linear facilities, water drainage is primarily characterized by scattered, well-defined washes and networks of numerous narrow runnels. The runnels result from the sheet flow of water across broad areas with a gentle slope. Areas of broad plains with continuous runnels, high sheet flow, and intermittent, well-defined washes are mostly vegetated with desert dry wash woodland, characterized by microphyllous trees such as ironwood (*Olneya terota*) and blue palo verde (*Cercidium floridum*), with an occasional smoke tree (*Psorothamnus spinosus*) and catclaw (*Acacia greggii*), among other species (USFWS, 2012 p. 27).

As described in the FERC FEIS, noxious weeds, common wildlife, and human subsidized predators are found throughout the entire Project site. Special-status or sensitive species that have been

identified as either in the proposed gen-tie line ROW and/or may occur in the Project area are listed in Table 18 of the FERC EIS (pp. 126-138) and include:

- Species listed as threatened or endangered under the California Endangered Species Act (CA ESA)
- Species listed as threatened or endangered under the federal ESA
- Candidate species for state or federal listing
- Species designated as "species of special concern" or "sensitive" by state or federal agencies
- Plant species from LISTS 1A, 1B, and 2 of the California Native Plant Society

3.2.2 *Desert Tortoise*

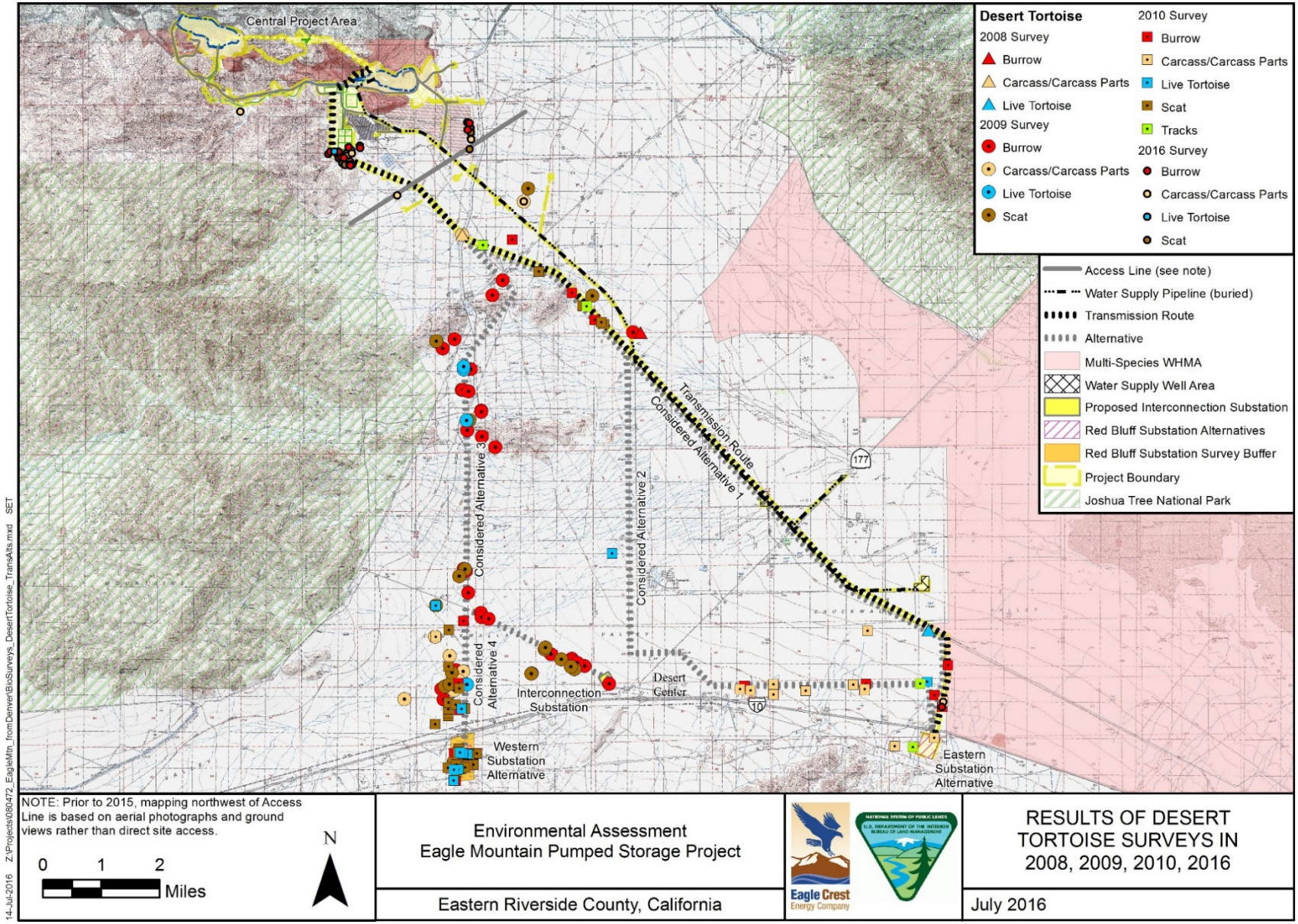
During survey years 2008, 2009, and 2010 eight burrows, five scat, two sets of tracks, and four carcass parts were found within 1,640 feet on either side of the proposed gen-tie line route. Of these, one burrow, two scat, both tracks, and all four carcasses were found within the 200-foot ROW. No live tortoises were observed in the proposed ROW. However, in 2008 non-protocol level surveys, a live tortoise was found within 80 feet of the 1,640-foot buffer around the gen-tie line ROW and approximately 4,000 feet north of I-10. The 1,640-foot buffer was chosen for analysis because that defines the extent of possible relocation areas. The Kaiser Road portion of the proposed waterline was surveyed in 2008 and 2010. Two burrows and two scat were found within 1,640 feet on either side of the proposed pipeline. No sign was observed on the proposed water supply pipeline route east of Kaiser Road (USFWS, 2012).

Sign was not evenly distributed along the entire route of the linear components, but rather was concentrated in two areas. Tracks, scat, carcasses, and numerous burrows were found between Kaiser Road and the Central Project Area (Figure 3-1). All types of sign, including the live animal, were found in the southeastern area of the gen-tie line route, north and south of I-10 near Red Bluff Substation and designated critical habitat. No sign was found on public lands in the roughly 6.5 miles east of Kaiser Road and north of the grouping of sign around the critical habitat near Red Bluff Substation. This segment includes some abandoned, private agricultural land that was not surveyed but is not likely tortoise habitat (USFWS, 2012). The distribution of sign closely correlates with habitat modeled as 0.5 or higher, on a scale of 0 to 1, with higher numbers representing more suitable habitat (Nussear et al., 2009).

Access to the Central Project Area was not granted by the previous landowner in earlier surveys years. Eagle Crest has now acquired the property, and a new survey of the Central Project Area and both the entire gen-tie line and water supply pipeline corridor was conducted in May 2016 (Appendix B of this EA). Sign of desert tortoise was less than in earlier years likely due to the ongoing drought cycle and continuing tortoise declines. In the area designed for the brine pond which also included the railroad berm and the gen-tie line inside the railroad berm, 10 burrows,

six scat, and three carcasses were observed. One carcass was observed in the mountain drainage south of Kaiser Road. Four burrows, seven scat, and one carcass were observed along the eastern edge of the southeast basin, next to the construction road leading to the Lower Reservoir. In the proposed gen-tie line ROW and associated buffers, two carcasses and three burrows were observed. Lastly, along the proposed water supply pipeline ROW, no sign was observed, however one carcass was found west of Desert Sunlight and north of Kaiser Road.

Figure 3-1: Results of Desert Tortoise Surveys along Gen-Tie Routes.



The USFWS made a density estimate of 4.0 tortoises/mi^2 along the gen-tie line route, concluding that the 200-foot ROW for linear components would be expected to support approximately two to three adult tortoises (16.4 miles of a 200-foot ROW, at 4.0 tortoises/mi^2) (USFWS, 2012 p. 32). The USFWS also found that a comparable density of tortoises likely would be found along the proposed water line, and that some or all of the tortoises found along the water supply pipeline route would be the same individuals as would be affected by the gen-tie line (USFWS, 2012 p. 32). The USFWS could not quantify the number of tortoises that may be present in the Central Project Area, however, they estimated that the number likely is small, due to the highly disturbed nature of the Project site as a mining site for over 100 years and poor connectivity among patches of potentially suitable habitat (USFWS, 2012 p. 33). This condition of the Central Project Area was confirmed in the May 2016 survey (Figure 3-1 and Appendix B).

In addition to subadult and adult desert tortoises, the Project site likely supports juvenile desert tortoises (i.e., less than 6.3 inches) and eggs. Estimating densities of juvenile desert tortoises is difficult because of low detection probabilities due to their small size and cryptic nature. However, based on a 4-year study of their population ecology, Turner et al., (1987) determined that juveniles accounted for 19 to 81 percent of the overall population. Using this range and the estimated maximum of three subadult and adult tortoises in the proposed linear components area, the USFWS estimated that the Project footprint may support between zero and 13 juveniles (USFWS, 2012 p. 33). The USFWS further estimated 17 eggs per year may be impacted by the Project (USFWS, 2012 p. 33).

3.2.3 *Nelson's Bighorn Sheep*

The Project is located in the Southern Mojave Metapopulation, adjacent to the Eagle Mountain population and near the Coxcomb population. The Central Project Area is located in BLM's Joshua Tree National Park Desert Bighorn Sheep Wildlife Habitat Management Area (FERC FEIS p. 141). Other populations in the Project vicinity include the Little San Bernardino Mountain population, located north of I-10 west of the Project, and the mountain populations of Chocolate, Orocopia, and Chuckwalla, south of I-10. The movement of individuals between these populations contributes to gene flow and promotes genetic diversity of the metapopulation. The construction of barriers between these populations, including I-10 and the Metropolitan Water District's canal, reduce this gene flow and could reduce fitness for populations that are isolated from the metapopulation (Epps et al., 2005).

Divine and Douglas (1996) conducted a 2-year radio telemetry study of the Eagle Mountain bighorn sheep population. This report provides maps showing locations of ewes and rams for the entire study period with locations mapped by season. Based on radio telemetry, Divine and Douglas (1996) identified two distinct ewe populations in the Eagle Mountains: one near the Central Project Area and one to the southwest, about 15 miles from the Central Project Area.

During the study, these populations did not mix; and rams generally occupied the area between the two ewe populations (FERC FEIS p. 141).

3.2.4 *Birds*

Several special-status raptor species, including golden eagle and prairie falcon, have the potential to occur in the central project area. Golden eagles nest in large trees in open cliff areas. Prairie falcon nest on vertical cliff faces. Foraging habitat for both species includes open areas where small and mid-sized animals are present. Nesting season for golden eagles in the southern part of their range (including the project area) can begin as early as late January and last through August (California Wildlife Habitats Relationship System, 2010a). Nesting season for the prairie falcon lasts from mid-February through mid-September with peak season from April to early August (California Wildlife Habitats Relationship System, 2010b)(FERC FEIS, pp. 143-144).

Golden eagle surveys were conducted in March and April 2010. The surveys covered mountainous areas within 10 miles of the proposed project. The surveyors located a total of 34 golden eagle nest sites distributed among nine active and five inactive eagle territories in the project region. Four of the (5-mile radius) territories identified overlap the Eagle Mountain Project area. Other raptor species encountered during the surveys include the American kestrel, barn owl, Cooper's hawk, great horned owl, long-eared owl, northern harrier, osprey, peregrine falcon, prairie falcon, red-tailed hawk and Swainson's hawk (FERC FEIS, pp. 144). Additional golden eagle surveys were conducted in 2012 and 2013 by consultants for the DSSF. These surveys were conducted on a 10-mile buffer area around the DSSF, an area which also includes most of the 10-mile area surrounding the Project. No golden eagle nests were found during the 2012-2013 surveys (Ironwood Consulting, 2015).

The burrowing owl is a BLM sensitive species that occurs in open arid areas. The owls generally occur in colonies and build nests in burrows, which are an essential component of burrowing owl habitat: both natural and artificial burrows provide protection, shelter, and nests for the owls. The burrows are typically constructed by other burrowing animals including kit fox, badger, and ground squirrel, but the owls also use human-made structures, such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement (California Burrowing Owl Consortium, 1993) (FERC FEIS, pp. 134).

During the 2009 biological survey, biologists located two owl burrows—one active and one inactive. One burrow was located on the proposed water pipeline ROW, the other was on the proposed transmission line ROW near the southern terminus (FERC FEIS, pp. 134). During the 2016 biological surveys, biologists noted one burrowing owl along the transmission line (*see* Appendix B, Figure 4-3).

Appendix B, Table 1 includes a listing of the special status species with potential to occur on the Project. No Federally-listed threatened or endangered birds are included on the list of species

with potential to occur on the Project. Swainson's hawk is the only State-listed threatened species observed on the Project. Gila woodpecker is a State-listed endangered species with potential to occur on the Project, but none have been observed during three years of field surveys.

3.3 Cultural Resources

The FERC EIS defines the archeological and historical legacy within the Central Project Area. The Area of Potential Effect (APE) is all lands within the Project boundary plus lands outside the Project boundary where Project operations may affect the character or use of historic properties and/or Traditional Cultural Properties (FERC FEIS p. 230). The BLM APE has been defined to include only the public lands for which a ROW grant application has been submitted, that is, the BLM-managed public lands within the Project boundary (Figure 3-2).

The FERC FEIS further describes the prehistoric background (10,000 B.C.-1900 A.D.) in three periods: Paleo-Indian, Archaic, and Late Prehistoric (FERC FEIS pp. 230-231). The Ethnohistory in the APE includes the Colorado River People, the Desert Cahuilla and the Chemehuevi cultures. The FERC FEIS describes these cultures in terms of how they hunted, traveled, and made homes (FERC FEIS pp. 231-232).

The historic background of the area begins with the founding of the Eagle Mountain mining operations in 1881. Ore mining operations for 35 years brought the railroad, people, housing structures, townsite, schools and highways to the area (FERC FEIS pp. 232-233). Desert Center, 10 miles south of the Project area, was founded in 1925, and is a waypoint along I-10 for travelers between Los Angeles and Arizona. Large-scale open pit mining ceased in 1983 (FERC FEIS p. 233).

The Colorado River Aqueduct was constructed between 1931 and 1941 to supply water from the Colorado River to southern California. The aqueduct project created other construction projects such as dams and canals, and is considered a pivotal component that allowed the enormous growth of Los Angeles. The aqueduct is recognized by the American Society of Civil Engineers as one of the "Seven Engineering Wonders of American Engineering" (FERC FEIS p. 233).

The Central Project Area is located in what was once the Desert Training Center/California-Arizona Maneuver Area (DTC/C-AMA) opened in 1942 and was the largest military training center ever created. The facility provided training in desert warfare through simulated combat theater operations until its closure in 1944 (FERC FEIS pp. 233-234).

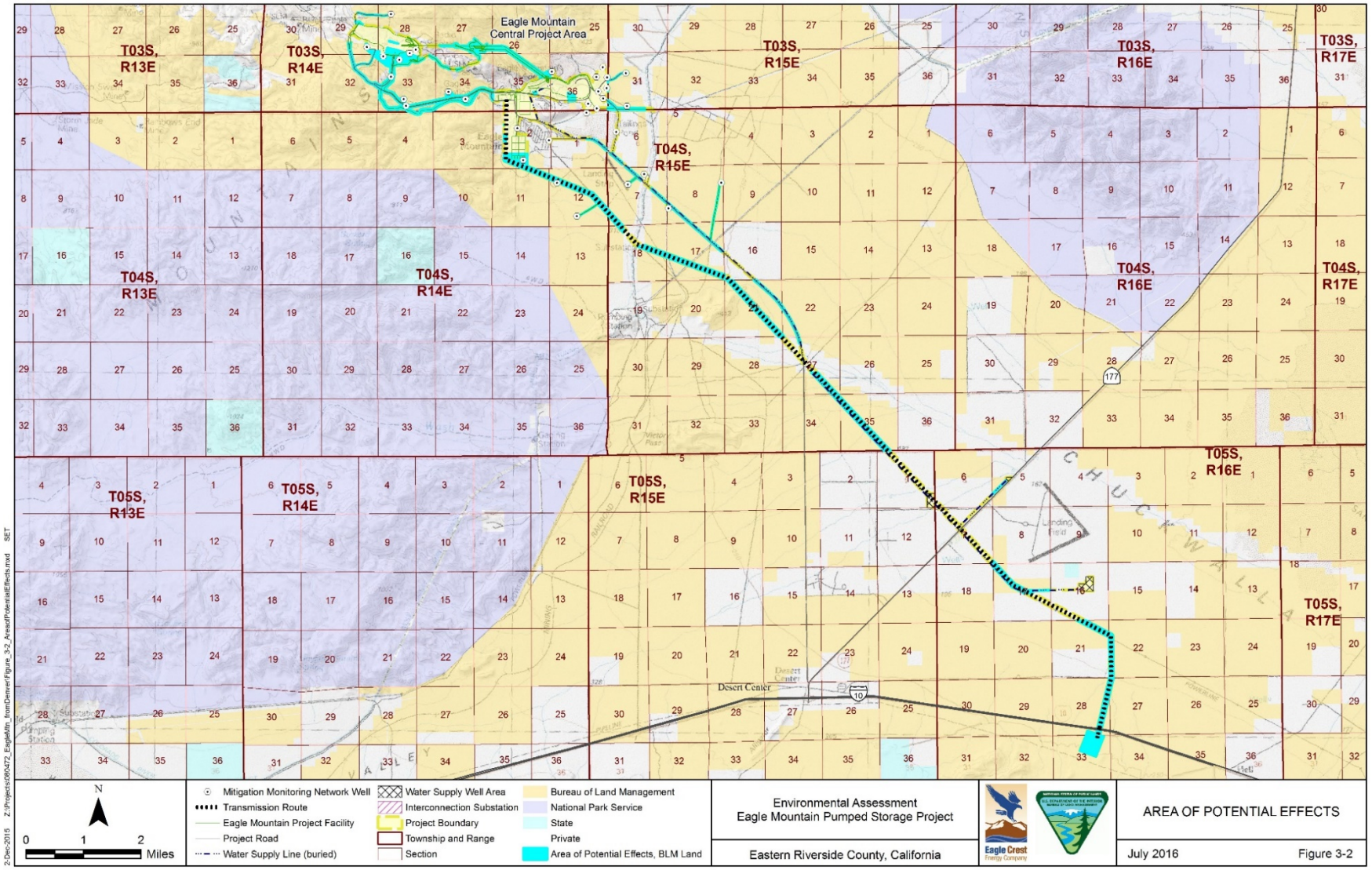
Eagle Crest conducted a BLM Class I records search and literature review, and BLM Class III field inventory for the APE alignment alternatives. Subsequently, FERC selected Transmission Route Alternative 1A, Red Bluff Substation Alternative 1A, and the originally proposed water well locations and pipeline routes for the Project that now constitute the Project APE.

The BLM Class I records search and literature review for several different interconnection gen-tie line route alternatives revealed 123 cultural resources sites recorded within a 1-mile radius of the APE. The FERC FEIS describes these sites and their eligibility for listing on the National Register (FERC FEIS pp. 235-236). In 2009, Eagle Crest conducted BLM Class III archaeological surveys of the accessible portions of the APE (FERC FEIS p. 235).

In 2010, a Class III inventory for the DSSF project was conducted (Chandler et al., 2010; Chandler et al., 2011; Chandler and Mason, 2011). One of the four inventoried gen-tie line alternatives for the DSSF project coincided with the chosen Eagle Crest Transmission Route Alternative 1A. That route was not chosen for the Desert Sunlight Transmission Line, however, in favor of a route along Kaiser Road. DSSF also employed the chosen Eastern Red Bluff Substation, entering from the west. The Project interconnection gen-tie line will enter the Eastern Red Bluff substation from the north. The DSSF project is now built and operating, including the Eastern Red Bluff Substation.

Only two cultural resources are located within or near this APE. Both are World War II era refuse scatters associated with the DTC/C-AMA: P-33-018391 (IMP-11903 (DS-494)) and P-33-018392 (IMP-11904 (DS-495)). Both are recommended as eligible for listing in the National Register of Historic Places (NRHP) under criteria A and D (ASM Affiliates, 2015).

Figure 3-2: Area of Potential Effect.



3.4 Geology and Soil Resources

The Project and associated features is located near the lower western edge of the Mojave Desert Physiographic Province of California. The area is surrounded by the Eagle Mountains, Chuckwalla Valley, Coxcomb Mountains, and Chuckwalla Mountains (FERC FEIS p. 47). Figure 6 in the FERC EIS depicts the geologic deposits in the proposed ROW as mostly Dune Sand, Alluvium, Quaternary Lake Deposit, Pleistocene Nonmarine, Tertiary Intrusive, and Mesozoic Granitic Rock (FERC FEIS p. 49).

Soils within the Project ROW areas have developed primarily on valley fill alluvium. The FERC EIS further describes soils as excessively drained fine sands, sands, gravelly sands, and cobbly sands (FERC FEIS p. 52).

The FERC FEIS describes potential geologic hazards in the Project vicinity as active faulting, landslides, liquefaction, and seismic settlement (FERC FEIS pp. 52-55). The Project site lies on the eastern edge of a region of high historical seismicity in southern California. The closest faults are the Hidden Springs fault 29 miles to the southwest; Hot Springs fault 30 miles to the southwest; San Andreas fault 33 miles southwest; and the mid-east portion of the Pinto Mountain fault, located 32.5 miles northwest (FERC FEIS p 52-53). Calculations of potential ground motion at the Project site during an earthquake estimated the highest horizontal peak ground acceleration (PGA) of 0.49 g (the acceleration due to Earth's gravity) that results from a magnitude 6.75 event. It is estimated that the site has a 2 percent probability of exceeding a PGA of 0.46 g in the next 50 years (FERC FEIS p. 54). Liquefaction can result in ground settlement, lateral spreading, and other disruptions at the ground surface. The sandy sediments associated with the alluvial fan and valley floor features in the Project area could have the potential for liquefaction and seismic settling (FERC EIS p. 55).

3.5 Hydrology and Water Quality

The FERC FEIS describes the affected environment for water in the Project area on pp. 64-82. The information from the FERC FEIS is summarized here. Information from the FEIS prepared by the BLM for the DSSF is also included in this summary, as cited. The Project's wells are located on private lands, and the groundwater to be pumped is under jurisdiction of the state of California. FERC consulted with the State Water Board and considered the Clean Water Act §401 certification issued by the State Water Board as a public interest recommendation under the FPA 10(a)(1) in preparation of its analyses for the FEIS; and relied upon the state's assessment of the Project regarding state water law, and in its development of License conditions related to groundwater quantity and quality (FERC License Section 50, p.11).

No water will be pumped from BLM-managed lands for use by the Project. BLM defers to the state with regard to regulation of the use of state water resources, as the legally authorized water agency for the state with the authority to control the amount of water consumed in the basin.

BLM's analysis of Project groundwater impacts relies on the analysis conducted by the State Water Board (letter from T. Raml, BLM to O. Biondi, State Water Board, April 19, 2013; Hogan, 2013).

3.5.1 *Surface Water Quantity*

The California Interagency Watershed Mapping Committee has developed a system for naming and delineating watersheds and subunits in California, beginning with 10 Hydrologic Regions that each covers millions of acres, and which are progressively subdivided into five smaller nested levels. The smaller nested levels in order of decreasing size are 1) Hydrologic Units (HU), 2) Hydrologic Areas, 3) Hydrologic Sub-Areas, 4) Super Planning Watersheds, and 5) Planning Watersheds. The Project is located in the Colorado Hydrologic Region, and is within the Chuckwalla HU and entirely within the Palen Hydrologic Area subdivision of the Chuckwalla HU. The Chuckwalla HU contains 1,268,650 acres and the Palen Hydrologic Area covers 419,660 of these acres. The Project is contained within the U.S. Geological Survey (USGS) 8-digit HU code 18100100, known as the Southern Mojave (BLM, Desert Sunlight FEIS, pp. 3.17-7 – 3.17-8).

The Project is located in the Eagle Mountains and western Chuckwalla Valley of the arid Mojave Desert of southeastern California. On average, about 3 to 5 inches of rainfall occurs annually. The region's very low precipitation, high evaporation, and permeable soils preclude the existence of perennial streams. In rare large rainfall events, substantial runoff occurs in washes, causing flash floods with a high potential for erosion (FERC FEIS pp. 64-65).

Eagle Creek, which is normally a dry wash, flows out of the Eagle Mountains generally along the southern side of the proposed Central Project Area. USGS operated a gage on Eagle Creek (Gage No. 10253600, Eagle Creek at Eagle Mountain) near the Project area from October 1, 1960, to September 30, 1966. Records from this gage, which had a drainage area of 7.71 square miles, indicate that flows were recorded on only 4 days during the 6 years when the gage was operational. The flows at this gage, which are representative of streams in the area, indicate a very flashy flow regime as shown by the large difference between the daily mean and the peak flow data. Under current highly disturbed conditions from the historical mining activities near the eastern mining pit, the majority of the flow in Eagle Creek enters the eastern mining pit where it accumulates and then evaporates quickly. Under current conditions, a drainage area of about 1.74 square miles currently flows into the central mining pit and about 2.85 square miles flows directly to the eastern mining pit. Water is temporarily retained in both mining pits after large rain events. The current drainage area of Eagle Creek at the point it flows into the eastern mining pit is about 7.3 square miles (FERC FEIS p. 65).

Before mining activities altered the drainage pattern, Eagle Creek (with a drainage area of 11.89 square miles) discharged into the Chuckwalla Valley, with an abrupt change in gradient where the wash emerged from the Eagle Mountains. As the flow emerged at high velocities from

the channeled wash area, the sediment bedload was deposited to form a braided alluvial fan where sheet flow and lower velocities occurred. The Colorado River Aqueduct, which carries water west to highly populated areas of southern California, is enclosed within a buried pipeline beneath the alluvial fan deposits of Eagle Creek to the east of the eastern mining pit (FERC FEIS p. 65).

The Chuckwalla Valley is a closed watershed with a total drainage area of about 663 square miles, with two central sinks that form the Palen Dry Lake and Ford Dry Lake. During substantial rainfall events, runoff from areas near the Project area reaches the Palen Dry Lake bed, forming a surface water feature that may persist for several weeks until lost by percolation and evaporation (FERC FEIS p. 66).

Eagle Crest's "closed-loop" pumped storage Project will not discharge into any navigable waters. In emergencies, when water from precipitation enters the Project's reservoirs beyond their capacity to absorb, the Project will discharge excess waters from the upper reservoir's spillway into the ephemeral Eagle Creek, where it will flow into the lower reservoir. In instances when the lower reservoir becomes full, any excess water that cannot be pumped back to the upper reservoir will be discharged from its spillway into an artificial channel, flowing downhill toward and over the Colorado River Aqueduct and onto an alluvial fan, where the water will either evaporate or be absorbed into the ground. Eagle Creek is not navigable and is not connected to any navigable or interstate waterway of any kind, and no showing has been made that any contaminants which may enter Eagle Creek or the alluvial fan could be transported to any navigable or interstate waterway (FERC License, Sections 48 and 49, pp. 10-11).

There are a few intermittent springs in the mountains within the northwest part of the Chuckwalla Valley. All of these springs appear to be hydrologically disconnected from the Chuckwalla groundwater basin since the springs are located in the mountains above the valley floors (FERC FEIS p. 66); *see also* NPS Memorandum (1994) regarding springs in Joshua Tree National Park ("*[I]t would appear unlikely these springs are hydrologically connected to the Pinto Basin or Chuckwalla Basin aquifers since they are located in the mountains above Pinto and Chuckwalla Basins*.")

3.5.2 ***Groundwater Quantity***

The Central Project Area is located in and adjacent to the Eagle Mountains on a bedrock ridge along the northwestern margins of the Chuckwalla Watershed. The central portions of the watershed contain the Palen and Chuckwalla valleys, with thick accumulations of alluvial sediments that comprise the Chuckwalla groundwater basin (FERC EIS p. 70).

The Chuckwalla groundwater basin receives both surface and subsurface inflow from the Orocopia groundwater basin to the west and from the Pinto groundwater basin to the north. The groundwater entering the Chuckwalla groundwater basin from the Pinto groundwater basin

passes through a gap in the bedrock about 6 miles north of the Central Project Area. A portion of the Pinto groundwater basin is within the Joshua Tree National Park, which is about 1.5 miles from the nearest boundary of the Central Project Area (FERC FEIS pp. 70-71).

The Chuckwalla groundwater basin drains east into the Palo Verde Mesa groundwater basin, which in turn drains into the Palo Verde Valley groundwater basin. The Colorado River forms the eastern edge of the Palo Verde Valley groundwater basin. Although the Cadiz groundwater basin is adjacent to the north side of the Chuckwalla basin, it is hydrologically disconnected due to mountains that block the flow of surface and subsurface flow between the two basins (FERC FEIS p. 70).

The FERC EIS discusses recharge sources and perennial yield of the Chuckwalla groundwater basin (FERC FEIS pp. 79-82). FERC estimated annual groundwater recharge as ranging from 9,600 to 15,000 acre-feet. The State Water Board EIR for the Project discusses recharge to the Chuckwalla groundwater basin in Section 3.3.2.9 of the State Water Board EIR. The State Water Board calculated 12,700 acre-feet per year as the estimated quantity of recharge in their analysis of potential groundwater impacts (State Water Board EIR, 2013 pp. 3.3-15). The BLM DSSF FEIS estimated annual inflow to the Chuckwalla groundwater basin to be between 13,719 and 14,571 acre-feet (BLM, DSSF FEIS, 2011; Table 4.17-1).

3.5.3 *Surface Water Quality*

Water quality in the area is influenced by the underlying geology, including steep mountainous terrain; unconsolidated deposits in the valleys; the disturbed mine area; and sparse vegetation. The combined effect of these conditions and the rare, but normally intense, short-duration rain events lead to high sediment loads during runoff events. Surface water quality has not been monitored during the rare runoff events (FERC FEIS p. 66).

3.5.4 *Groundwater Quality*

Groundwater quality in the Central Project Area is typical for desert areas of southern California. The measure of acidity or alkalinity (pH) ranges from about 7.4 to 8.5; total dissolved solids levels at 425 to 950 milligrams per liter (mg/L) are generally above the California maximum containment level of 500 mg/L (CH2M Hill, 1996); and sulfate and chloride are generally both below the maximum containment level of 250 mg/L (Kaiser Steel Resources, Inc., 1978). Boron, fluoride, and arsenic are commonly higher than recommended concentrations for drinking water. Samples from the wells in the Pinto and Chuckwalla groundwater basins had concentrations of boron at 600 and 938 micrograms per liter and concentrations of fluoride of 2.4 and 6.2 mg/L (Kaiser Steel Resources, Inc., 1978). Human-induced groundwater pollution is low due to the undeveloped nature of the Chuckwalla Valley area, the limited infiltration of surface water, and the extreme depth to groundwater (FERC FEIS p. 67).

3.6 Land Use

Much of the land surrounding the Project area is public land managed by the BLM, with NPS-managed lands within Joshua Tree National Park, lying 1.5 to 2.0 miles north and south of the Project boundary, and 5 miles or more west of the Project lands. Recently, NPS initiated a Boundary Study and published a Draft EA to determine whether federal land managed by BLM should be segregated, withdrawn, and transferred to NPS-management in Joshua Tree National Park (NPS, 2016). In the NPS Draft EA, NPS recognized that the Project lands had been withdrawn pursuant to FPA Section 24 and that the federally-licensed Project was a VER (NPS Draft EA pp. 13, 101, 106, and 110). NPS stated that the, "*…proposed addition would not include BLM-managed lands that have been previously withdrawn under the Federal Power Act for the Eagle Crest Energy Company's proposed Eagle Mountain Pumped Storage Project*" (NPS Draft EA p. 106).

BLM also recognizes the lands subject to the pending SF 299 application made by Eagle Crest that extend beyond the lands are now withdrawn, pursuant to FPA Section 24, and that those lands are now under consideration in this EA. These lands surround the Central Project Area and FERC-licensed Project boundary to provide some flexibility in the precise location of Project features as may be determined based upon final engineering and construction. It is understood that once the Project is built and the final Project footprint is precisely defined, the unused remainder of these lands would be relinquished, and would not be part of the final BLM ROW for the Project.

There are three small communities in the Project vicinity with fewer than 100 dwellings. Portions of the ROW would require easements from the Metropolitan Water District for water line and transmission line crossings of the Colorado River Aqueduct and related power infrastructure (FERC FEIS pp. 194-197). Figure 2-1 depicts the land ownership in the Project area.

The Central Project Area is on a site which consists of mountainous, rocky terrain that has been extensively disturbed as a result of past industrial mining activity. Kaiser's open pit iron ore mine operated on a full time basis from 1948 to 1983. Since that time, mining operations have involved processing of mine tailings and overburden rock on the site. The topography of the site is generally disturbed by mining operations and urban development associated with the townsite (CH2M Hill, 1996 p. 3.5-1). Inactive open pits, tailings piles, and remnant tailings ponds exist on the site. Remnants of the structures associated with the previous mining, including railhead, haul roads, and ore processing/refining facilities, still exist, although many of the ore processing and refining facilities have been removed (FERC FEIS p. 195). The area to the southeast of the East Pit (site of the proposed lower reservoir) is occupied by a coarse tailing pile from mining operations that is approximately 350 to 500 feet above the surrounding natural terrain. Terraces of overburden rock and alluvium reaching a height of 600 feet above the adjacent valley floor lie

immediately north and east of the pit. To the south and adjacent to the coarse tailings piles are dry settling ponds constructed with rock and earthen berms that rise up to 90 feet above the valley floor that contain fine tailings (CH2M Hill, 1996 p. 3.5-4).

The entire Project is located within the CDCA and the DRECP planning areas. The CDCA and DRECP are BLM's land use plans for approximately 12 million acres of public lands within the southern California desert area. The CDCA and DRECP Plans provide for the use and protection of the desert's natural, cultural, and aesthetic resources (FERC FEIS pp. 197-198). The BLM-managed lands within the Project boundary would be subject to DRECP CMAs and land allocations. A "crosswalk" analysis between the FERC License requirements and the DRECP designations, classifications, allocations and CMAs is included in Appendix A.

The CDCA Plan identifies designated corridors targeted for gen-tie lines, pipelines, and related structures such as substations and compression stations (Figure 1-2) and indicates that applications for these types of uses will be encouraged by BLM management to be located within designated corridors (BLM, 1980).

The CDCA Plan states that transmission lines above 161-kV that are outside of a designated corridor and water supply pipelines with a diameter of 12 to 24 inches require a PA. A PA stating that the transmission line and the pipeline are allowed outside of the designated corridor would be required for any portion of the Project alignment outside of the designated corridor.

Water Pipeline. The water supply pipeline corridor consists primarily of undeveloped desert land, previously farmed lands, and lands adjacent to an existing transmission line, existing roadway, the recently completed DSSF, and Metropolitan Water District lands containing the Colorado River Aqueduct and electrical transmission lines. The southern third of the proposed route would cross several private parcels with inactive agricultural fields. The remainder of the route would consist of federal land managed by BLM crossed by the existing transmission line and Eagle Mountain Road. As the proposed route approaches the Eagle Mountain area, it lies along the north side of the Eagle Mountain Road ROW and adjacent to the DSSF, and would cross the Colorado River Aqueduct and surrounding Metropolitan Water District lands and easement areas before entering the mine site and extending north to the lower reservoir (FERC FEIS p. 195).

Figure 1-2 shows the location of the water supply pipeline and the segments of the pipeline that are over 12 inches and on BLM-managed land and that are outside of the designated corridor.

Gen-Tie Line. The proposed route for the Project's double-circuit 500-kV gen-tie line would be located, in part, on public lands managed by the BLM. Total acreage for the proposed route is shown in Table 3-3, below. Exceptions include private lands within the Project boundary and along the gen-tie line route adjacent to the existing SCE 161 kV gen-tie line, and a crossing of land owned by the Metropolitan Water District as the route crosses the Colorado River Aqueduct

and existing gen-tie lines. The gen-tie corridor is 200-feet-wide for construction, operation, and maintenance of the proposed gen-tie line (FERC FEIS p. 197).

Table 3-3: Acreage of ROW within FERC Project Boundary for Linear Features of Project.

	Total Acreage of ROW	Acreage of ROW on BLM-managed land	Acreage of ROW on BLM-managed land outside the designated corridor
Water Pipeline	136.0*	81.4*	59.3*
Gen-Tie Line	759.6	504.1	369.6

Notes for Table 3-3:
*Values exclude 96.2 acres of water pipeline ROW that is shared with the gen-tie line ROW.
Approximately 41.1 of those shared acres are BLM-managed land, all outside the designated corridor.

3.7 Noise

The unit of measure for the effects of noise on sensitive areas is the A-weighted decibel scale (dBA) as it has been found these levels correlate with the human ear's reduced sensitivity to low frequencies (FERC FEIS p. 259). Table 28 of the FERC FEIS (p. 259) identified dBA levels of typical noise environments such as a military jet taking off and bird calls. The FERC EIS further describes three, time-averaged scales:

- Leq-the equivalent A-weighted sound level over a given period
- Ldn-average day-night-24-hour average sound level
- Lmax-maximum sound level measured over the measurement period

Ambient Leq noise measurements at the Eagle Mountain town site were measured between 38 and 63 dBA, depending on the distance of the measurement locations from Kaiser Road. Ambient Leq noise measurements were taken in the communities of Lake Tamarisk and Desert Center and were 54-60 and 66-70 dBA, respectively (FERC FEIS p. 261). The Eagle Mountain mining site is approximately 1.5 to 4 miles from the nearest sensitive receptor. Sensitive receptors would be present approximately 200 feet from the proposed gen-tie line along Kaiser Road. The closest Joshua Tree National Park boundary is located about 1.5 miles from the Project area (FERC FEIS p. 261).

3.8 Paleontological Resources

The geologic units within the Project area include Jurassic to Cretaceous-age plutonic intrusive rocks and Paleozoic and Precambrian metamorphic and meta-sedimentary rocks. Localized outcrops of Tertiary-age volcanic rocks are found principally at the northern end of the Chuckwalla Valley. Younger Pleistocene-age basalt is present in the north-central portion of the Eagle Mountains. Deposits of Quaternary-age alluvium fill the Pinto Basin and Chuckwalla Valley, locally reaching depths greater than 2,000 feet (FERC FEIS p. 46). Only the Quaternary older alluvium has any potential to yield paleontological resources.

3.9 Recreation

The FERC FEIS describes recreational resources in the vicinity of the Eagle Mountain Project area as dispersed opportunities on public lands primarily consisting of hiking and off-highway vehicle (OHV) use. It further describes the developed BLM-managed preserves or refuges in the surrounding area that include Ford Dry and Palen Dry lakes, the Chuckwalla Valley Dune Thicket and Alligator Rock, the Desert Lily Sanctuary, and the Chuckwalla Mountains wilderness area. Developed amenities in the surrounding area include a museum, golf course, and a campground (FERC FEIS p. 191-192).

Visitation to the area occurs primarily to the Joshua Tree National Park, but there is very little recreational use in the southeastern area of the Joshua Tree National Park adjacent to the Project boundary (FERC FEIS p. 204). The Joshua Tree National Park and wilderness areas have restrictions prohibiting OHV use, but BLM-managed lands have a long history of recreational OHV use in the areas surrounding the Joshua Tree National Park. BLM does not keep records of visitor use but maintains inventories of trails that are open or closed to OHV activity. There are no open trails within Riverside County, where riding off designated trails is permitted. BLM does not keep records of camping visitors but as noted in the NECO Plan that *"…this area receives little recreational use.*" (FERC FEIS p. 94). There is no publically accessible road access into the Joshua Tree National Park from the mine site.

3.10 Visual Resources

The Project is located approximately 10 miles north of Desert Center, California, and 66 miles east of Palm Springs, CA. The area is generally referred to as the western Sonoran Desert and includes the area between the Colorado River Basin and the Coast Ranges south of Little San Bernardino Mountains and the Mojave Desert (FERC FEIS p. 199). The FERC FEIS describes the aesthetics of the area as consisting of flat desert valleys bordered by highly eroded mountain ranges (FERC FEIS p. 200). The scenic quality rating of the Central Project Area is "low" and the scenic quality rating of the Chuckwalla Valley is "medium" (DRECP LUPA/FEIS Figure III.20-1).

The Project area is located in the Chuckwalla Valley which consists of flat and gently sloping topography adjacent to the Eagle Mountains. The FERC FEIS describes the visual aesthetics that characterize the natural landscape as well as the man-made features found within the area such as gen-tie line corridors, OHV tracks, stormwater drains, structures, and transportation corridors (FERC FEIS p. 202). BLM and the U.S. Department of Energy have identified lands within the Chuckwalla Valley and Eagle Mountain areas as Visual Resource Inventory Class II and III, indicating high and moderate visual values, respectively (FERC FEIS p. 201 and DRECP LUPA/FEIS Figure IV.20-2).

The mountainous landscape of the Project reservoir site is dominated by the major hard rock mining operations and extensive deep mine pits. Mined areas are highly disturbed, consisting of a series of four large open pits, tailing piles, fine tailings "ponds", and remains of processing facilities (FERC FEIS p. 201) (Photo 3-1). The mining pits vary in size, with the East Pit (proposed site of the lower reservoir) and Central Pit (proposed site of upper reservoir) being approximately 400 feet deep. Terraces of overburden and tailings reach a height of as much as 600 feet above the surrounding terrain. Remnants of plant operation and equipment areas are present on the site (Photos 3-2 – 3-4). A residential area (i.e., the townsite), which once provided housing for hundreds of mine employees, is located to the south of the mine (CH2MHill, 1996 p. 3.10-7) (Photos 3-1 and 3-5). A former, privately-operated prison was also located on the site, with buildings and razor wire fencing still remaining. Additional human-made disturbances that stand out visually from the mine site include roads, a railroad, gen-tie lines, the Colorado River Aqueduct, and its related Eagle Mountain Pump Station.

Photo 3-1: Central Project Area, Showing Lower Reservoir, Remnants of Eagle Mountain Townsite, and Tailings Piles.

Photo 3-2: Central Project Area, Showing Remnants of Processing Facilities and Mining Pit.

Photo 3-3: Central Project Area, Showing Proposed Location of Upper Reservoir, Photo Taken During April 2016 BLM/USFWS Site Review.

Photo 3-4: Central Project Area, Proposed Lower Reservoir Site.

Photo 3-5: Central Project Area, Street Level View of Townsite with Tailing Piles in Background.

The EIS prepared for the Eagle Mountain landfill project concluded that, "*…the modifications in the mined areas contribute to the uniqueness of these landforms within the region. These features are not, however, visually compatible with the adjacent form, line color, and texture of the surrounding mountains. The overall visual quality is low*." (CH2MHill, 1996, p. 3.10-8).

The FERC FEIS describes five key viewpoints where the Project features would be visible: Kaiser Road, Eagle Mountain Road, I-10 near Desert Center, SR 177 east and west of Lake Tamarisk, and the Joshua Tree National Park (FERC FEIS pp. 202-204).

3.11 Socioeconomics

Riverside County is located in southern California and stretches from the Colorado River and Arizona border in the east to Orange County and within 14 miles of the Pacific Ocean to the west. The socioeconomic study area encompasses cities within approximately 60 miles of the Eagle Mountain Project area. The FERC FEIS list populations in the surrounding cities between

years 1980 and 2007 (Table 3-4) (FERC FEIS p. 246). Updated population statistics for 2016 are included in Table 3-4 (California Department of Finance, 2016).

Table 3-4: Population for Cities Surrounding the Project Area.

Area	1990	2000	2007	2016
Blythe	8,428	20,465	22,625	19,813
Cathedral City	30,085	42,647	52,115	54,26
Coachella	16,896	22,724	38,486	45,407
Indio	36,793	49,116	77,146	88,058
Palm Desert	23,252	41,155	49,752	49,335
Palm Springs	40,181	42,805	46,858	46,654
Riverside County	1,170,413	1,545,387	2,031,625	2,347,828

The FERC FEIS describes employment and income based on Riverside County and U.S. Census Bureau statistics for the year 2006. In 2006, education, health, and social services employed the most people in Riverside County (FERC FEIS pp. 247-248). Riverside County employment industries are listed in Table 3-5 with number of individuals and percentage of the whole for 2015. Government education and health industries ranked the highest in employment sectors in 2015 (California Employment Development Department, 2016).

Table 3-5: Riverside County Annual, Not Seasonally Adjusted, Employment by Sector for 2015.

Industry	Individuals	Percentage
Total farm and mining	13,400	2
Construction	52,800	7
Manufacturing	41,300	6
Wholesale trade	23,600	3
Retail trade	88,500	12
Transportation and warehousing, and utilities	33,900	5
Information	6,400	1
Finance, insurance, real estate, and rental and leasing	20,800	3
Professional and scientific	19,000	3
Educational and health	95,300	13
Arts, entertainment, and recreation	10,700	1
Government	113,800	15
Administrative support and waste	40,100	5
Healthcare and social services	87,700	12
Accommodation and food service	72,600	10
Other services	21,600	3
Total	**741,500**	

In addition to basic services, the county offers K-12 schools, law enforcement, fire departments, and emergency medical services (FERC FEIS p. 250).

Employment and Income

The Riverside County Economic Development Agency (RCEDA) reports the unemployment rate from 1997 to 2014 as above the state and national averages. The RCEDA reports a civilian labor force in 2014 of 1,011,500 residents with 928,200 employed and an unemployment rate of 8.2 percent. The county experienced an unemployment rate as high as 14.7 percent in 2010 and a low of 5 percent in 2006 (RCEDA, 2016).

Environmental Justice

In BLM's Desert Harvest Solar Project FEIS (2012) (p. 3.16-1), environmental justice concerns were considered for Riverside County, and defined as either:

- The minority or low-income population of the affected area is greater than 50 percent of the affected area's general population; or
- The minority or low-income population percentage of the affected area is meaningfully greater (50%or greater) than the minority or low-income population percentage in the general population of the jurisdiction or other appropriate unit of geographic analysis.

The BLM reports in Table 3.6 (Table 3.16-1 of the Desert Harvest FEIS) that in 2000, Riverside County had a higher percentage of black or African American, American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, Some Other Race, and Hispanic minority populations than the state average for that same year. In 2010, Riverside County had a higher percentage of Hispanic populations than the state (Desert Harvest FEIS p. 3.16-2).

The U.S. Census Bureau (2016) reports the national median household income for state of California is $61,489 for years 2010-2014 and median income for Riverside County is $56,592. The U.S. Census Bureau (2016) also reports that 16.4 percent of the state and 17.1 percent of the county are below the poverty level. The RCEDA (2016) reports taxable sales within the county were $30,056,467 in 2013.

Table 3-6: Population by Percentage Race/Ethnicity (Table 3.16-1, from Desert Harvest FEIS, 2012).

	2000				2010		
Percent Race/Ethnicity	**California**	**Riverside County**	**Census Tract 458**	**Block Groups 3, 5, 6**	**California**	**Riverside County**	**Census Tract 469**
White	46.70%	51.04%	27.92%	26.71%	40.1%	39.7%	42.68%
Black or African American (not Hispanic)	6.44	5.98	20.68	21.39	5.8	6.0	1.66
American Indian and Alaska Native (not Hispanic)	0.53	0.66	0.84	0.78	0.4	0.5	0.59
Asian (not Hispanic)	10.77	3.57	1.31	1.34	12.8	5.8	0.59
Native Hawaiian and Other Pacific Islander (not Hispanic)	0.31	0.21	0.34	0.35	0.3	0.3	0.10
Some other race (not Hispanic)	0.21	0.16	1.21	1.26	0.2	0.2	0.20
Two or more races (not Hispanic)	2.67	2.17	0.85	0.88	2.6	2.2	1.91
Hispanic of all races	32.38	36.21	46.83	47.29	37.6	45.5	52.28
All minorities	50.43	46.63	70.00	71.15	57.02	60.5	55.41

CHAPTER 4:
ENVIRONMENTAL CONSEQUENCES

4.1 Alternative A: Proposed Action

4.1.1 *Air Quality*

In Tables 4-1 and 4-2 (FERC EIS pp. 263-264), the FERC FEIS estimates the annual and daily emissions for construction of the entire Project, and Table 4-3 (FERC FEIS p. 265) estimates emissions from operation. Construction activities for the entire Project are expected to exceed the SCAQMD CEQA threshold for emissions of nitrogen oxides (NO_x) in 3 out of the 4 years (estimated without application of proposed mitigation measures); (FERC EIS p. 264). Consequently, the Project's NO_x emissions from construction are potentially significant if unmitigated. Emissions during operation or maintenance of the Project would be minimal, and would not exceed SCAQMD CEQA thresholds (FERC EIS pp. 264-265).

Table 4-1: Estimated Annual Construction Emissions (tons).

Year	CO	VOC	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO_2	N_2O	CH_4
2012	59.0	7.46	54	2.83	2.54	0.08	7,998	0.05	0.68
2013	57.8	7.86	57	2.95	2.64	0.09	9,021	0.05	0.71
2014	60.2	7.67	51	2.79	2.49	0.09	9,297	0.07	0.72
2015	15.8	1.66	10	0.61	0.54	0.025	1,931	0.03	0.15
Maximum	60.2	7.86	57	2.95	2.64	0.09	9,297	0.07	0.72
Percent of Mojave Desert Air Basin regional emissions	0.05	0.02	0.06	0.004	0.02	0.003	NA	NA	NA

Notes for Table 4-1:

CH4 – methane
CO – carbon monoxide
CO_2 – carbon dioxide
NA – not available
N2O – nitrous oxide
NOx – nitrogen oxides
PM2.5 – particulate matter greater than 2.5 microns in diameter
PM10 – particulate matter greater than 10 microns in diameter
SO2 – sulfur dioxide
VOC – volatile organic compound

Table 4-2: Daily Construction Emissions (pounds).

Year	CO	VOC	NO_x	PM_{10}	$PM_{2.5}$	SO_2
2012	454	57	417	21.7	19.6	0.62
2013	444	60	436	22.7	20.3	0.71
2014	464	59	392	21.4	19.1	0.73
2015	121	13	74	4.7	4.2	0.16
Maximum	464	60	436	22.7	20.3	0.73
CEQA threshold	550	75	100	150	55	150
Exceed CEQA	No	No	Yes	No	No	No

Effects of Operations on Air Quality

Project operation would have minimal direct effects on air quality. The indirect effects could be beneficial if power from the pumped energy storage Project replaces or supplements fossil-fueled peaking generation facilities (FERC FEIS p. 265).

During operations, air pollutant emissions associated with Project maintenance activities would be minimal, and would not exceed SCAQMD CEQA thresholds for operation. Table 4-3 provides the estimated operation-related annual emissions associated with maintenance of the Project (FERC EIS p. 265)

Table 4-3: Annual Operational Emissions (tons).

CO	VOC	NO_x	PM_{10}	$PM_{2.5}$	SO_2	CO_2	N_2O	CH_4
0.57	0.01	0.05	0.01	0.01	0.00	102	0.00	0.01

Valley Fever

Valley Fever (*coccidiomycosis* or "*cocci*") is an illness caused by a fungus found in the soil and dirt of some areas of the southwestern United States, parts of Mexico, and Central and South America. In California, the fungus is found in every county, but particularly in areas of the San Joaquin Valley (southern Central Valley). The fungi's spores can be stirred into the air by anything that disrupts the soil, such as farming, construction, and wind. Construction of the Project has the potential to increase windblown dust, thus increasing risks of Valley Fever.

Climate Change

The maximum energy requirement to refill the proposed upper reservoir would be about 1,600 MW, generally consumed during off-peak periods. Eagle Crest states that this energy would normally be provided by wind (typically with excess generation during nighttime conditions) and solar facilities during off-peak hours (generally on weekend days or from over-generation during peak periods) and by general base-load natural gas-fired combined-cycle electrical generation during the nighttime hours. In this manner, the Project would act like a storage system for the energy generated during the off-peak hours, and for over-generation of renewable power during peak periods. During peak energy demand periods when renewable sources are not available, and as needed for transmission grid stability, up to 1,300 MW of generation would occur. In this manner, the Project would

eliminate the need for up to 1,300 MW of simple-cycle natural gas (fossil-fueled) peaking facilities during peak periods, and decrease emissions associated with the fossil-fueled facilities (FERC FEIS p. 266).

The pump-back power that would be required would be greater than the power that would be generated by the facility, however, due to the timing and source of power from which pump-back power (generally from power plants with low air emissions) is derived, and the displacement of other peak power sources (generally natural gas peaking plants with higher emissions), overall emissions of CO_2 would be reduced by the system operation. The emission analysis in the FERC FEIS (Table 4-4) compares two scenarios for maximum and minimum displacement. The difference in the scenarios is that pump-back power is assumed to be generated by renewable sources in the maximum displacement scenarios and by natural gas combined-cycle power plants in the minimum displacement scenarios. Overall emissions of CO_2 would be reduced by overall system operation (FERC EIS p. 266).

Table 4-4: Annual Electrical Generation Offset of CO_2 Emissions. Source: FERC EIS Table 32.

Source	Generation Type	Gigawatt hours per year	Annual CO_2 (metric tons)
Pump-back power	Renewable	2,883	0
	Combined-Cycle	2,883	1,065,796
Generation (Displaced)	Simple Cycle	2,278	1,115,751

Air Quality Mitigation Measures. The FERC License for the Eagle Mountain Project, Article 423, requires Eagle Crest to prepare an Air Quality Monitoring and Protection Plan.

Article 423 states,

> *Within 18 months of license issuance, the licensee shall file with the Commission for approval, an air quality monitoring and protection plan.*
>
> *The plan shall include, at a minimum: (1) provisions for establishing a record of baseline (pre-construction) air quality in the Project area and monitoring of air quality during Project construction; (2) a provision to identify acceptable thresholds or air quality standards to be met during Project construction; (3) a provision to adjust construction activities in the event monitoring results indicate the Project exceeds established air quality standards are occurring; and (4) an implementation schedule.*
>
> *The licensee shall develop the plan after consultation with the South Coast Air Quality Management District and the National Park Service. The licensee shall include with the plan documentation of consultation, copies*

> *of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.*
>
> *The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.*

The Air Quality Monitoring and Protection Plan was prepared in consultation with the SCAQMD and NPS, and was filed with FERC on December 19, 2015, and approved April 18, 2016.

The two air pollutants of concern for the Project are NOx and PM_{10}. The primary concern for emissions will be to reduce visible and fugitive dust emissions from Project construction. Control of NOx emissions will also be important, because unmitigated emissions exceed SCAQMD CEQA significance thresholds. The approved Air Quality Monitoring and Protection Plan has three components: a Fugitive Dust Control Plan, a Vehicle Emissions Reduction Plan, and a proposed Cooperative Monitoring Plan. The focus of the Project Air Quality Protection Plan is to reduce and control Project emissions to avoid contributing to any exceedance of an air quality standard.

The Fugitive Dust Control Plan will implement the air quality mitigation measures for fugitive dust (Enhancement measures AQ-1 – AQ-5) included in the FERC FEIS, p. 295. The Fugitive Dust Control Plan will follow the SCAQMD Rule 403 and 403.1 Implementation Handbooks, as applicable for Large Operations. The Fugitive Dust Control Plan will reduce the risks of Project construction to increase incidences of Valley Fever. Water or BLM-approved dust palliatives will be applied during construction to the ROW, dirt roads, trenches, spoil piles, and other areas where ground disturbance takes place to minimize dust emissions and topsoil erosion. Dust palliatives will be nontoxic to wildlife and native plants.

The Project contracting documents (specifications) will require the contractor to develop and implement a Vehicle Emission Reduction Plan that includes additional air quality mitigation measures. In addition, the contractor will be required by the specifications to use electrical drops in place of temporary electrical generators, and substitute low- and zero-emitting construction equipment and/or alternative fueled or catalyst equipped diesel equipment wherever economically feasible.

The proposed Cooperative Monitoring Plan will be developed if the NPS signs a cooperative agreement allowing installation of monitors within the Joshua Tree National Park. The Cooperative Monitoring Plan calls for monitoring nitric oxide (NO) and NOx concentrations at two locations for 1

year prior to commencing construction, and during the 2 years of maximum construction activity. If the data indicates NO, or NOx from the Project may be affecting air quality at the Pinto Wells ozone site, additional NOx control measures will be developed and implemented at the Project. Specific measures will be developed based on operations concurrent with affecting measurements.

Residual Impacts after Implementation of Mitigation. The SCAQMD has rules developed to protect, maintain, and improve air quality in the Project area. If Project construction and operations follow SCAQMD rules and procedures, as well as the Project-specific Air Quality Monitoring and Protection Plan, the air quality standards will be met.

4.1.2 *Biological Resources*

4.1.2.1 *Vegetation*

Effects to biological resources during construction and operation of the Project were described in the FERC FEIS (pp.144-170; 177-189). Specific effects to habitat associated with gen-tie line ROW construction would include disturbance to 3.4 acres of Sonoran Creosote Bush Scrub, 1.6 acres of Desert Dry Wash Woodland, and 1.7 acres of disturbed areas (FERC, 2011).

Vegetation Mitigation Measures. The FERC License for the Eagle Mountain Project includes Article 410, which requires Eagle Crest to prepare an Invasive Species Monitoring and Control Plan. That Plan was developed by Eagle Crest in consultation with the USFWS, BLM, NPS, the State Water Board, and CDFW and filed with FERC on February 19, 2015. The Invasive Species Monitoring and Control Plan was modified and approved by FERC November 19, 2015.

The FERC License for the Eagle Mountain Project includes Article 412, which requires Eagle Crest to prepare a Special Status Plants Protection Plan. That Plan was developed by Eagle Crest in consultation with the USFWS, BLM, NPS, the State Water Board, and CDFW and filed with FERC on February 19, 2015. The Special Status Plants Plan was approved by FERC May 16, 2016.

The FERC License for the Eagle Mountain Project includes Article 409, which requires Eagle Crest to revise the Revegetation Plan, previously prepared by Eagle Crest in consultation with the USFWS, BLM, NPS, the State Water Board, and CDFW. This Plan will be revised and filed with FERC no later than 90 days prior to the start of construction, as required by the FERC License.

The Worker Environmental Awareness Program (WEAP) developed by Eagle Crest in consultation with the USFWS, BLM, NPS, the State Water Board, and CDFW and filed with FERC October 27, 2009 was approved by FERC (Article 418).

Residual Impacts after Implementation of Mitigation. Construction of the Project would have unavoidable effects on local vegetation (FERC FEIS, p. 146). Operation of the Project gen-tie line and water supply pipelines would have little, if any, effect on vegetation. Operation of the Project reservoirs would add water to areas currently void of vegetation. Implementation of the WEAP will ensure the potential for inadvertent effects on sensitive species is reduced (FERC FEIS, p. 148). Eagle

Crest's Revegetation Plan includes a variety of measures that would promote successful revegetation in a desert ecosystem. Revising the Revegetation Plan to include use of weed-free materials and continued irrigation of transplants (as required by Article 409 of the FERC License) will increase the potential for successful revegetation (FERC FEIS, p. 148). The Invasive Species Monitoring and Control Plan (approved on November 19, 2015) requires criteria be developed for success of weed control measures and adaptive management to further reduce effects of noxious and invasive weeds (FERC FEIS, p. 151).

4.1.2.2 *Desert Tortoise*

The USFWS BO found that the proposed Eagle Mountain Project is not likely to jeopardize the continued existence of the desert tortoise or destroy or adversely modify designated critical habitat (USFWS, 2012 p. 48). The USFWS concluded that the Central Project Area may support a few tortoises. The USFWS further found that the disturbance of up to 10.48 acres of habitat from construction of the gen-tie line, water supply pipeline, and associated stub and access roads may result in accidental death or injury of subadults, adults, and juvenile desert tortoises and eggs from crushing, trampling, or burial (USFWS, 2012 p. 50).

Along linear components and associated access roads, the USFWS anticipates the Project would impact up to three subadult and adult desert tortoises, up to 13 juveniles, and up to 17 eggs per year during the life of the Project. However, because of the imprecise nature of this estimate, the actual number of individuals that may be moved out of harm's way along the linear components is unknown. Capture or collection, relocation, and release will be conducted by a USFWS-approved biologist following a USFWS-approved protocol, therefore these activities are not expected to result in the direct injury or death of any relocated tortoises. Capture and collection for the purposes of relocation of a greater number of individuals than are expected to be present would not adversely affect the tortoise population as a whole (USFWS, 2012 p. 51).

Desert tortoise habitat loss is expected to total 59 acres of permanent loss and 29 acres of temporary disturbance (Table 4-5). These figures include 47.7 acres of desert tortoise habitat in the area of the proposed brine ponds.

Loss of native habitat for the sole purpose of construction (as opposed to operation and maintenance) is temporary, but should be considered semi-permanent for the Colorado Desert. Natural regrowth is constrained by limited and unpredictable precipitation and can require several decades to approach pre-disturbance conditions as demonstrated in the Central Project Area mined lands. During this time, the habitat is essentially unavailable for use by native wildlife. As such, all surface disturbances during construction that results in the removal or displacement of vegetation and soil should be considered semi-permanent (FERC, 2011 p. 69).

Under the CDCA NECO Plan, lands are categorized in terms of quality of habitat, and are assigned a 5:1 or 1:1 acquisition ratio. Desert Wildlife Management Area (DWMA) lands and critical habitat are assigned 5:1 compensation ratios and other suitable habitat is 1:1 (USFWS, 2012 p. 15). Similarly,

under the DRECP, different land management designations require different compensation ratios. Eagle Crest would minimize impacts to habitat through the purchase and conservation of the required number of acres of desert tortoise habitat lands within 2 years of authorization of the right-of-way.

Desert Tortoise Mitigation Measures. BLM has consulted with the USFWS and FERC, and concluded that, specific to the Central Project Area, the brine ponds will be relocated to a site in an already disturbed area that was once the trailer park for the town of Eagle Mountain (Figure 4-1). Relocating the brine ponds will result in a reduction of impact to desert tortoise habitat of 47.7 acres. Of these 47.7 acres of desert tortoise habitat, 12.2 acres are located on BLM-managed lands. The relocated brine ponds will be entirely on private land.

Conservation Measure 21 in the BO requires Eagle Crest to minimize impacts to desert tortoise habitat through the purchase and conservation of desert tortoise habitat in a manner consistent with the BLM NECO Plan, and CDFG's fully mitigated standard, in accordance with Eagle Crest's desire to pursue a consistency determination under section 2080.1 of the California Fish and Game Code. According to the NECO Plan, all lands within a DWMA are considered Category 1 desert tortoise habitat, with an acquisition ratio of 5:1. All occupied lands outside a DWMA are considered Category 3 habitat, with a 1:1 acquisition ratio. Critical habitat outside of DWMAs also requires a 5:1 acquisition ratio.

The USFWS estimated that the pumped storage project would disturb (permanent and semi-permanent disturbance) 0.1 acre of DWMA and 0.4 acres of critical habitat - a combined total of 0.5 acres - and an estimated 87.5 acres of Category 3 Habitat. However, relocating the brine pond results in a reduction of Category 3 habitat to 39.8 acres (Table 4-6).

In accordance with this estimate, and assuming the brine ponds will be relocated outside of desert tortoise habitat, Eagle Crest will acquire, protect and transfer title of 42.3 acres of desert tortoise habitat lands and will also provide funding for the initial improvement and long-term maintenance and management of the acquired lands.

Numerous additional mitigation measures are proposed for reducing impacts to the desert tortoise from construction and operation of the Project and include WEAP (filed with FERC October 27, 2009 and approved in the FERC License Article 418), compensatory acquisition of desert tortoise habitat at the ratios specified in the BO, pre-construction and removal surveys, monitoring during and post construction, predator monitoring, exclusion fencing and the Desert Tortoise Clearance and Relocation/Translocation Plan (FERC FEIS pp. 177-189) (filed with FERC October 27, 2009 and approved in the FERC License Article 415).

Figure 4-1: Proposed Relocation of Brine Pond Outside Desert Tortoise Habitat.

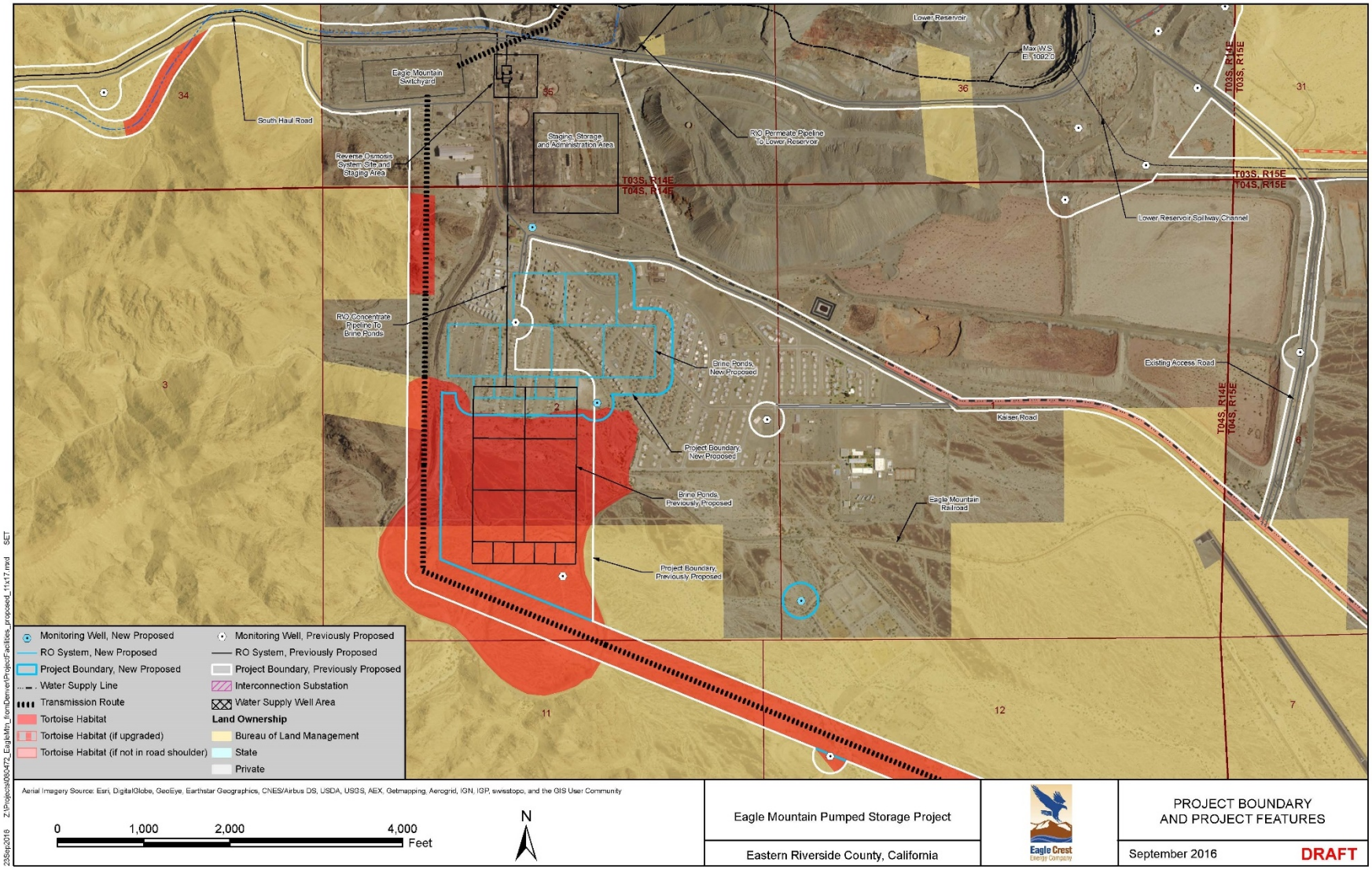


Table 4-5: Estimated Acreage of Temporary and Permanent Disturbance in Desert Tortoise Habitat on the Eagle Mountain Pumped Storage Hydroelectric Project [a]

Project Element	Proposed ROW		ROW with Relocated Brine Ponds	
	Temporary	Permanent	Temporary	Permanent
Central Project Area[b]	6.3	55.8	6.3	8.1
Transmission Line[c]	2.4	3.2	2.4	3.2
Water Pipeline	20.3	0	20.3	0
Project Total	29	59	29	11.3

Notes for Table 4-5:

[a] Calculations are based on assumptions used in Table 4 in FERC FEIS, 2011, p. 61

[b] Calculations based on May 2016 field surveys.

[C] Tower pads are considered temporary disturbance; stub roads are considered permanent

Table 4-6: Estimated Compensation Acreage for Desert Tortoise Habitat

	Proposed ROW			ROW with Relocated Brine Ponds		
	Category 1 (5:1 ratio)	Category 3 (1:1 ratio)	Total	Category 1 (5:1 ratio)	Category 3 (1:1 ratio)	Total
Disturbance Acres	0.5	87.5	88.0	0.5	39.8	40.3
Compensation Acres	2.5	87.5	90.0	2.5	39.8	42.3

The following terms and conditions were required in the BO in order to minimize the impact of incidental take on the desert tortoise. These terms and conditions are non-discretionary, and were included in the FERC License as requirements for Eagle Crest.

The following terms and conditions implement reasonable and prudent Measure 1:

2. Protocol-level surveys shall be conducted by a qualified biologist with experience surveying for desert tortoise and its sign.

3. Surveys shall be conducted in accordance with the USFWS's most recent guidance for pre-Project protocol-level surveys (completed May 2016).

4. Results of tortoise surveys shall be submitted to the USFWS and CDFW within 2 months of their completion and at least 6 months prior to initiation of any activities that would result in ground disturbance (Biologist's report completed and included in Appendix B to this EA; submitted to USFWS August 2016).

The following terms and conditions implement reasonable and prudent Measure 2:

1. Any designated staff members that will be capturing, handling, relocating, or monitoring tortoises will be approved by the USFWS and CDFW. The Applicant shall assign at least one Authorized Biologist to the Project. The Applicant shall submit the résumé of the proposed Authorized Biologist(s), with at least three references and contact information, to the USFWS. The Authorized Biologist must meet the following minimum qualifications:

    a. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;

    b. Three (3) years of experience in field biology or current certification of a nationally recognized biological society, like the Ecological Society of America or The Wildlife Society;

    c. At least a year of field experience with biological resources in the desert;

    d. Meet or exceed the current Authorized Biologist qualifications set forth by the USFWS and demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS.

    e. Possess a California ESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise; or

    f. In lieu of any of the above requirements, the résumé shall demonstrate to the satisfaction of the USFWS and CDFW that the proposed Authorized Biologist has

the appropriate training and background to effectively implement the conservation measures.

2. No fewer than 45 days prior to the start of site mobilization or construction-related ground disturbance, the Applicant shall submit the name(s) of the Authorized Biologist(s), along with a completed Desert Tortoise Authorized Biologist Request Form to the USFWS and CDFW for review and final approval. In addition, the Applicant shall submit the name(s) of all Biological Monitors, their resumes, and at least three references to CDFW for approval.

If an Authorized Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the USFWS and CDFW at least 10 working days prior to the termination or release of the preceding Authorized Biologist. In an emergency, the Applicant shall immediately notify the USFWS to discuss the qualifications and approval of a short-term replacement while a permanent Authorized Biologist is proposed to and approved by the USFWS and CDFW.

3. The Authorized Biologist shall have all of the duties outlined in Conservation Measure 3. In addition, the Authorized Biologist's duties shall include the following, as needed:

    a. Clearly mark sensitive biological resource areas and verify personally or use Biological Monitors to check for compliance with all impact avoidance and minimization measures, including checking all exclusion zones to ensure that signs, stakes, and fencing are intact and ensuring Project activities are limited to authorized areas of disturbance.

    b. Remain on site daily in areas located outside of desert tortoise exclusion fencing while vegetation salvage, grubbing, grading, or any other ground-disturbing activity is taking place to ensure conservation measures are properly implemented.

    c. Notify the Applicant and USFWS of any non-compliance with any of the conservation measures or terms and conditions of this BO.

The following terms and conditions implement reasonable and prudent Measure 3:

1. Temporary and permanent exclusion fencing around the desalination ponds and reservoirs will completely enclose the facilities. No setbacks for wildlife will be included.

2. Fencing will be installed in accordance with Conservation Measure 9, and will adhere to the USFWS's specifications for desert tortoise fencing where applicable.

In addition to the terms and conditions of the BO, the FERC License required a series of biological resource management plans to protect and mitigate impacts to biological resources. The following plans have been developed by Eagle Crest and reviewed by regulatory agencies, including BLM, USFWS, NPS, and CDFW. Comments to the natural resource management plans were incorporated and the final plans submitted to FERC for review and approval. Completed resource management plans include:

- Special-status Plants Protection Plan (approved May 16, 2016)
- Invasive Species Monitoring and Control Plan (approved November 19, 2015)
- Predator Monitoring and Control Plan (approved May 19, 2016)
- Avian Protection Plan (approved May 17, 2016)
- Wildlife Protection Plan (approved June 6, 2016)
- Desert Tortoise Clearance and Relocation/Translocation Plan (approved with issuance of the FERC License)

Additional requirements of the FERC License include:

Article 411. Couch's Spadefoot Toad Protection Plan.

> *The Eagle Crest shall conduct pre-construction surveys on Project lands not previously surveyed for Couch's spadefoot toads, after the Eagle Crest obtains site access. Surveys shall be consistent with the Northern and Eastern Colorado Desert Coordinated Management Plan and conducted using methodologies filed by the BLM on May 10, 2013.*

Article 416. Desert Tortoise Habitat Mitigation Plan.

> *At least 60 days prior to start of construction, but not later than submittal of the final contract plans and specifications and supporting design report required by Article 302, Eagle Crest shall file with the Commission for approval, a desert tortoise habitat mitigation plan for Project- related effects on Category I and Category III desert tortoise habitat. For purposes of this article, Category I desert tortoise habitat includes lands within a Desert Wildlife Management Area (DWMA), and Category III desert tortoise habitat includes lands outside the DWMA.*
>
> *The plan shall include, at a minimum: (1) map(s) identifying the acres of disturbance, the acreage and location of mitigation lands, and plans for acquiring the lands; (2) a provision to file revised Exhibit G drawings according to sections 4.41(h) and 4.39 the Commission's regulations incorporating the lands into the Project boundary; and (3) an implementation schedule.*

Article 418. Worker Environmental Awareness Program.

> *The Worker Environmental Awareness Program, filed on October 27, 2009, is approved and shall be implemented with the following additional requirement: include information about Coachella Valley milkvetch, including identification characteristics, in the training program.*

The FERC License requires that wildlife plans be developed in consultation with the BLM, USFWS, and NPS, SWB, and CDFW (License Articles 409 through 418):

> *Eagle Crest develop these plans after consultation with the USFWS, BLM, National Park Service, California State Water Resources Control Board [State Water Board], and California Department of Fish and Wildlife. Eagle Crest shall include with the plans documentation of consultation, copies of comments and recommendations on the completed plans after they have been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plans. Eagle Crest shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plans with the Commission. If Eagle Crest does not adopt a recommendation, the filing shall include Eagle Crest's reasons, based on Project-specific information.*
>
> *FERC reserves the right to require changes to the plans. Land-disturbing activities shall not begin until the Eagle Crest is notified by the Commission that the plans are approved. Upon FERC approval Eagle Crest shall implement the plan, including any changes required by FERC.*

Residual Impacts after Implementation of Mitigation. The Applicant proposes measures that would provide multiple layers of protection for desert tortoise from Project effects including pre-construction surveys and clearance surveys, extensive monitoring and management programs, and acquisition of compensation habitat lands (FERC, FEIS, p. 182). These measures would ensure protection of ESA species and habitat and would be under the direction of USFWS and BLM, including consultation with NPS and CDFW, throughout construction and operation of the Project. The habitat compensation program will provide additional protection of species and habitat as areas would be removed from consideration for other projects. Monitoring of Project construction and operation will insure that Project resource protection plans are implemented.

4.1.2.3 *Nelson's Bighorn Sheep*

During the construction period, extensive use of heavy machinery including earth movers, dump trucks, cement trucks, and tunnel boring equipment would increase noise levels and increase human presence in this area compared to current conditions. These temporary activities could

disturb bighorn sheep populations that spend much of the year in the mountainous areas surrounding the Central Project Area. Construction of Project roads and desert tortoise exclusionary fencing, as well as increases in artificial lighting, also have the potential to disrupt migratory paths for Nelson's bighorn sheep moving between available water sources and to breeding and lambing grounds. The potential for vehicular collisions is also a concern (FERC FEIS, p. 159).

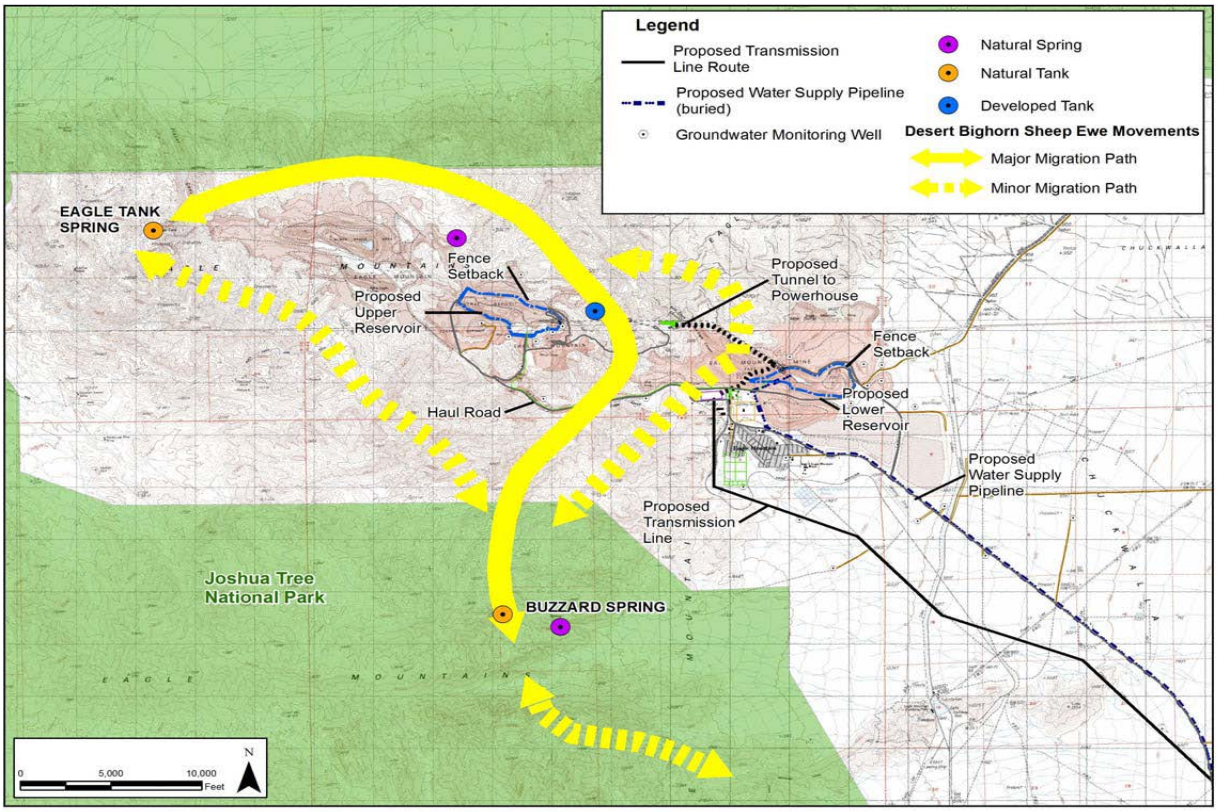
While the construction period would increase human presence and noise levels over current conditions, the Central Project Area has been heavily mined over the past several decades. FERC concluded that Project construction activities would not create a migratory barrier, and effects of Project construction on Nelson's bighorn sheep populations would be minor and temporary (FERC FEIS, p. 160). FERC further concluded that vehicular activity or road maintenance would not affect bighorn sheep safety or create barriers to movement in the Project.

Sheep have been observed crossing the haul road and appear to use the ridges leading from the extreme northern ridges to the haul road as crossing zones across the Central Project Area. Sheep also use the northwestern section of the mine, as well as the area west of Placer Canyon (Divine and Douglas, 1996) (Figure 4-2) (FERC FEIS, p. 141). Project operations would create reservoirs in existing mine pits. Currently, the pits are open to bighorn sheep and these animals are known to enter the pits to access water following rains. Installation of fences around the reservoirs as proposed by Eagle Crest would prohibit this access. However, the reservoirs themselves are small relative to distances bighorn sheep travel between watering sources or between populations within the metapopulation. Additionally, sheep traveling through the Central Project Area are most likely to use undisturbed habitat between the upper and lower reservoir. The Project would not create new disturbance in these areas and Project activity centers near the powerhouse, switchyard, evaporations ponds, and administrative offices are unlikely to disturb sheep located in other parts of the Central Project Area (FERC FEIS, p. 161).

Bighorn Sheep Mitigation Measures. To reduce the effects of Project construction on Nelson's bighorn sheep, Eagle Crest's desert tortoise exclusion fencing along Project roads would be limited to 3 feet in height so as not prevent Nelson's bighorn sheep movement. These fences would be removed following construction. The Fencing Plan is described in the Wildlife Protection Plan required by FERC License Article 414 and approved June 6, 2016.

Facility lighting is necessary to provide security for Project facilities and increase safety for night workers. The Facility Lighting and Night Sky Monitoring Plan, required by the FERC License Article 421 and approved August 3, 2015, requires measures to limit effects of lighting by using light hoods, minimizing light sources, and using low-light bulbs would minimize such effects on bighorn sheep to minor levels.

Figure 4-2: Desert Bighorn Sheep Ewe Migratory Routes in the Central Project Area (*Source*: FERC FEIS Figure 13, page 142).



Residual Impacts after Implementation of Mitigation. Increased noise and human presence could have minor and temporary effects on bighorn sheep during construction (FERC FEIS p. 160). Project operations would create reservoirs in existing mining pits. Currently the pits are open to bighorn sheep. Installation of required fences will prohibit access of bighorn sheep (FERC FEIS p. 161).

4.1.2.4 *Birds*

Several sensitive raptor species, including prairie falcon and golden eagle, could suffer effects of project construction if there are active nests near activities proposed in the central project area. Loud staccato noises and vehicle noise could disrupt nesting activities or cause nest abandonment. The FERC license requires Eagle Crest to conduct pre-construction surveys in the Central Project Area to determine whether any active golden eagle or prairie falcon nests are present. If surveys identified active nests, Eagle Crest would provide protective 0.25-mile-radius buffer around the nest sites (FERC FEIS, pp. 164).

The proposed project gen-tie line has potential to affect raptors or other species due to in-flight collisions with conductors or electrocution. For example, biological monitoring of avian mortality conducted by the DSSF on their gen-tie line in the Chuckwalla Valley found a total of

13 avian mortalities over a 2-year monitoring period. None of the avian mortalities associated with the DSSF gen-tie line were of State or Federally-listed species (Ironwood, 2015).

Additional perching or nesting sites associated with the transmission line could have beneficial effects on some raptor species, but could also cause increased predation on local wildlife (FERC FEIS, pp. 165).

In its comment letter filed on March 12, 2010, USFWS recommends that Eagle Crest ensure compliance with Avian Power Line Interaction Committee (APLIC) recommendations and develop an avian protection plan that meets USFWS guidelines. USFWS also recommended co-locating the new line with existing lines in the project area. Eagle Crest would design and construct raptor-friendly transmission lines in strict accordance with the industry standard guidelines set forth in Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006 (APLIC, 2006) (FERC FEIS, pp. 165). The APLIC provides industry standards for electric transmission system design measures aimed at reducing effects on birds. These standards include spacing conductors such that they are beyond the wing span of large birds to prevent electrocution, as well as measures to increase line visibility to reduce potential for collisions. Eagle Crest would construct the transmission line in compliance with these standards (FERC FEIS, pp. 165).

Constructing new gen-tie line support towers would increase perching and nesting structures for birds, including desert tortoise predators. However, constructing these new towers in areas where similar towers already exist would limit the spatial distribution of these resources. While the new towers would still present potential nesting and perching structures, the proximity of these structures to the existing structures could limit their suitability. Both ravens and other raptors nest in defended territories and are not likely to nest near pre-existing nests. Therefore, constructing the new line adjacent to existing lines would limit the creation of new nest sites. The gen-tie alignment would be co-located with existing structures and removed from mountainous nesting habitat (FERC FEIS, pp. 165-166).

The FERC License required an Avian Protection Plan to protect and mitigate impacts to avian resources. The plan was developed by Eagle Crest and reviewed by regulatory agencies, including BLM, USFWS, NPS, and CDFW. Comments to the Avian Protection Plan were incorporated and the final plans submitted to FERC for review and approval. The Avian Protection Plan was approved on May 17, 2016.

> Article 413. Avian Protection
>
> *To reduce hazardous interactions between birds and the project's overhead transmission lines, the licensee shall file with the Commission for approval, a transmission line avian protection plan within 6 months of license issuance. The plan shall include, at a minimum: (1) a transmission*

line design that considers: (a) adequate separation of energized conductors, ground wires, and other metal hardware; (b) adequate insulation of conductors; and (c) compliance with industry standard guidelines set forth in Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006, by Avian Power Line Interaction Committee, Edison Electric Institute, and Raptor Research Foundation; (2) methods for surveying and reporting project-related avian mortality; (3) provisions for a worker education plan pertaining to avian–power line interactions; (4) procedures for managing nesting on power line structures; (5) a schedule for implementing the plan; and (6) a provision for filing reports of any accidental avian collisions with power lines.

Nesting Migratory Birds

To protect nesting migratory birds from project construction activities, the licensee shall file with the Commission for approval, a nesting migratory bird protection plan within 6 months of license issuance. This plan shall include, at a minimum: (1) identification of any land-disturbing activities in vegetated habitat on project lands that would occur between January 15 and July 30; (2) identification of appropriate protection buffer distances for nesting birds on project lands; (3) methodologies for conducting pre- construction surveys to identify active bird nests on project lands; (4) methods for flagging nest locations and providing protective buffers around active nests; (5) a schedule for implementing the plan; and (6) a schedule for filing reports on the surveys.

Nesting Raptors

To protect nesting raptors from project construction activities, the licensee shall file with the Commission for approval, a nesting raptor protection plan within 6 months of license issuance. The plan shall include, at a minimum: (1) methodologies to conduct pre-construction surveys to identify any prairie falcon or golden eagle nests within 1 mile of proposed construction activities; (2) a schedule for implementing the plan; and (3) a schedule for filing reports, prior to the start of project construction, on the locations of nests along with any necessary protection buffers and/or timing restrictions on construction activities to minimize disturbance to nesting raptors.

Residual Impacts after Implementation of Mitigation. The Applicant proposes measures that would provide multiple layers of protection for avian species from Project effects including pre-

construction surveys, extensive monitoring and management programs. These measures would ensure protection of avian species and would be under the direction of USFWS and BLM, and in coordination with NPS and CDFW, throughout construction and operation of the Project. Monitoring of Project construction and operation will insure that Project resource protection plans are implemented.

4.1.3 *Cultural Resources*

Construction and operation activities of the Project have the potential to affect known and unknown cultural resources. Site P-33-018391 is located approximately 187 feet from the gen-tie line and water supply pipeline ROW and will be avoided through stipulations of the ROW permit. Additional protective measures through establishment of a staked and flagged "environmentally sensitive areas" may be warranted if for any reason a ROW variance is required for access roads or other Project elements that may come closer, although this is not anticipated. Site P-33-018392 is located immediately adjacent to the proposed ROW and can be protected through establishment of a monitored and marked "environmentally sensitive area" as specified in the HPMP (ASM Affiliates, 2011) and referenced in the Programmatic Agreement. All 24 cultural resources within the Red Bluff Substation access roads, and related tie lines, have already been previously evaluated and treated as a result of the DSSF project (Chandler et al., 2011). The Project's interconnection gen-tie line enters the substation from the north where no cultural resources were identified within the substation property. No other cultural resources were documented along other parts of the gen-tie line or water conveyance system.

As a requirement of the FERC licensing of the Project, Eagle Crest, with cooperation from and consultation with the California SHPO, BLM, and interested Tribes, developed a HPMP. The FERC FEIS describes the proposed measures contained in the HPMP for managing known and unknown cultural resources in the area (FERC FEIS pp. 242-243).

Cultural Resources Mitigation Measures. The FERC License, Article 425, states,

> *…the licensee shall implement the Programmatic Agreement Between the Federal Energy Regulatory Commission and the State of California Historic Preservation Officer for Managing Historic Properties that May be Affected by Issuing of a License to Eagle Crest, for the Eagle Mountain Pumped Storage Hydroelectric Project in Riverside County, California (FERC No. 13123-002), executed on September 27, 2011, and including but not limited to, the Eagle Mountain Pumped Storage Hydroelectric Project FERC No. 13123 Historic Properties Management Plan (HPMP), filed on March 4, 2011. In the event that the Programmatic Agreement is terminated, the licensee shall continue to implement the provisions of its approved HPMP. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license.*

As specified in the HPMP, Eagle Crest's implementation of review procedures prior to ground-disturbing activities and protocols for future cultural resources field investigations would ensure that cultural resources are considered during Project planning and that appropriate studies are undertaken. Further, Appendix A of the HPMP contains protocols to be followed if previously unknown cultural resources or human remains are identified during Project activities. Implementation of these measures would ensure that new discoveries are treated appropriately.

Residual Impacts after Implementation of Mitigation. Implementation of the HPMP would effectively mitigate impacts to cultural resources (FERC FEIS pp. 244- 245). Eagle Crest's proposal to appoint a historic properties management coordinator would ensure that the requirements of the HPMP are followed. Additionally, annual reporting to agencies and affected Tribes on the status of overall cultural resources management provides a forum for parties to discuss the HPMP and provide recommendations about management of cultural resources (FERC FEIS p. 244). No cultural resource impacts would remain that would not be mitigated to a minimal level.

4.1.4 *Geology and Soil Resources*

The FERC FEIS discusses potential environmental impacts to geology and soils (FERC FEIS pp. 46-63). That information is summarized here.

There are no active faults in the Project vicinity (FERC FEIS p. 56). The gen-tie lines would be suspended far above ground, and effects on the overall Chuckwalla Valley floor would be minimal (FERC FEIS p. 61). Impacts to soils in the gen-tie line ROW from tower placement and from the new access roads would be permanent.

The water supply pipeline – an underground pipe ranging from 12 to 24 inches in diameter and totaling approximately 15.3 miles – would also impact soils. Construction activities would include excavation of existing soils, placement of the water pipe, and burial with the excavated soil material. Soil layers would be permanently disturbed and the pipe would be permanently buried. In the event of damage to the gen-tie line and/or pipeline from an earthquake, emergency measures would be undertaken to restore service to the Project. These activities would include mobilization of emergency equipment to specific areas to excavate and replace damaged structures.

Liquefaction can occur when loose, saturated sandy soils are subjected to earthquakes. In its License Application, Eagle Crest provides the screening criteria from the Southern California Earthquake Center (SCEC) for determination of liquefaction hazards (SCEC, 1999). Based upon SCEC standards, a liquefaction assessment is not required (FERC FEIS p. 58).

Construction-related activities and on-going Project operations have the potential to trigger slope failures and/or rock falls on unstable slopes within and possibly adjacent to the proposed

reservoirs, facilities, and along linear features (e.g., roads) where construction involves earth moving (FERC FEIS p. 62).

Potential subsidence impacts are discussed in Section 4.1.5.2 below.

Geology and Soils Mitigation Measures. The FERC License, Article 302, states,

> *Article 302. Contract Plans and Specifications. At least 60 days prior to start of construction, the licensee shall submit one copy of its final contract plans and specifications and supporting design report to the Commission's Division of Dam Safety and Inspections (D2SI)–San Francisco Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI). The submittal must also include as part of preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sedimentation Control Plan. The Soil Erosion and Sedimentation Control Plan shall include measures to:*
>
> *(1) preserve vegetation where feasible and to protect nearby existing vegetation that is not required to be disturbed or removed, by use of temporary fencing or other measures;*
>
> *(2) minimize the exposure of disturbed soil to wind and water erosion;*
>
> *(3) slope roadways and excavations away from washes, and clear loose soils and pre-existing sediments in areas where haul roads will cross surface washes;*
>
> *(4) install riprap at the washes;*
>
> *(5) build small earthen embankments within washes to slow or divert surface water;*
>
> *(6) install silt fences in work areas near a wash to prevent sediment from entering the wash during rain storms;*
>
> *(7) limit earth moving activity on windy days;*
>
> *(8) apply water to disturbed soil areas of the project site to ensure excessive runoff does not occur and to control wind erosion and dust;*
>
> *(9) implement complementary sediment controls to intercept and filter out soil particles mobilized by surface runoff;*

(10) limit the tracking of soils to paved surfaces by construction vehicles (track-out);

(11) stabilize graded surfaces; and

(12) limit surface area disturbance to 15 acres per day.

Residual Impacts after Implementation of Mitigation. The Project's Erosion and Sediment Control Plan, including Best Management Practices implementation and preparation of a Storm Water Pollution and Prevention Plan and a Monitoring Plan, would address this potential Project-related effect by adhering to industry standards. The measures outlined in the plan would minimize the potential of soil erosion of disturbed surfaces and of sediment transport in and near the construction areas (FERC FEIS, p. 61).

The Project's transmission lines and water supply pipelines in the upper Chuckwalla Valley would be situated to the west of the sand transport corridor. Because water supply pipelines would be installed underground and transmission lines would be suspended far above ground between towers spaced adequately far apart, minimal effects on the overall aeolian (relating to or arising from the action of the wind) system that involves the wind-driven transport of predominantly sand-sized particles and maintains active sand dunes on portions of the valley floor would be expected (FERC FEIS, p. 61).

The Project's proposed subsurface investigations would evaluate slope stability as an integral part of final engineering and design. Proposed measures to remove or grade the identified unstable slopes in the reservoirs would minimize slope failure potential. The final engineering investigations will additionally consider the potential effects of Project-related blasting and borings on slope stability (FERC FEIS p. 62).

4.1.5 *Hydrology and Water Quality*

4.1.5.1 *Surface Water Quantity*

The FERC FEIS discusses potential environmental impacts to surface water quantity (FERC FEIS pp. 83-88). That information is summarized here.

The local springs in the Eagle Mountains are upgradient from the Project area and not hydrologically connected to the nearby groundwater basins. As such, Project pumping from the Chuckwalla groundwater basin would not affect the mountain perched groundwater systems that feed these springs (FERC FEIS p. 108).

Runoff events in the Project area are very rare and normally are of short duration with a limited amount of volume, as indicated by the historical gaging on Eagle Creek. Construction of the Project and operation would result in changes to the amount of flow that reaches Eagle Creek

during the rare events when runoff occurs in the area. Under current conditions, both existing mining pits retain the stormwater runoff that is directed to their locations. Under operational conditions, this stormwater would be added to water in the reservoirs, creating a possible excess amount of water in the reservoirs, depending on operational conditions and the amount of inflow (FERC FEIS p. 84).

Storm events producing inflows less than 200 acre-feet could be stored in the two reservoirs to reduce the amount of make-up water needed. The 200 acre-feet could be stored in the lower reservoir without overtopping the proposed spillway, so normal operations could continue with inflow volumes less than 200 acre-feet. The upper reservoir could temporarily accommodate about 1,000 acre-feet without overtopping the spillway crest (FERC FEIS p. 84).

A 100-year flood event would add about 2,000 acre-feet to the reservoir system. It would require about 2 days to remove this water from the two reservoirs following specified operational procedures. FERC found that it is likely that with minor operational changes and spillways designed for larger events than the 100-year event, no major effects on the Project area are likely from a 100-year event (FERC FEIS pp. 84-85).

The Probable Maximum Flood (PMF) event (10,000-year event) is estimated to add 11,520 acre-feet to the reservoir system with an estimated recurrence interval of about once every 10,000 years. In the event of a PMF type event, operational changes would be needed for about 12 days to discharge the excess that would accumulate in the reservoirs (FERC FEIS p. 85). Excess water would likely be discharged onto BLM-managed lands where it would evaporate or be absorbed into the ground. Germination of weeds and other non-native vegetation could occur as a result of the excess water. The Invasive Species Management Plan (approved November 19, 2015) would need to be updated to include measures for managing weeds on the alluvial fan in rare excess water events.

Eagle Crest estimated hydraulic capacity at key locations of the Eagle Creek channel using available topographic mapping and aerial photos to provide estimated channel slopes and widths and to estimate flow depths and velocities at key locations. Based on the results from this analysis, the existing Eagle Creek channel should be adequate to convey PMF flows for existing and proposed conditions due to an increase in flow depth of about 0.4 foot and a velocity increase of about 0.9 foot per second, or about 5 percent. However, FERC noted that substantial geomorphological changes are likely during these exceptionally large flood events, which could change the location and conveyance capacity of the channel. FERC's calculations indicate a flow velocity in Eagle Creek capable of moving a large amount of sediment, gravel, and boulders and causing substantial erosion of existing and proposed structures and streambed conditions (FERC FEIS p. 86).

Surface Water Quantity Mitigation Measures. Article 309 of the FERC License requires Eagle Crest to perform an Inflow Design Flood and Hazard Classification study that includes:

(1) an incremental hazard evaluation to determine the effects on downstream structures in the event of a dam failure; (2) a recommendation for the Project's hazard potential classification; and (3) an assessment of the adequacy of the Project's spillway capacity. The adequacy of the Project's design to control the spill flow will be addressed by the [FERC required] Board of Consultants (Article 304). The appropriate design flood should factor in the hazard potential of downstream structures and inhabitants. The design flood will be determined by the Commission's Division of Dam Safety and Inspections based on the recommendations of the Board of Consultants upon completion of the Inflow Design Flood and Hazard Classification Study required by Article 309 (FERC License, Sections 97 and 98).

The FERC FEIS stated that more detailed analysis would be needed during final design of the Project, to assess channel capacity in Eagle Creek and the design of the lower reservoir spillway. The FERC License addressed this concern in Article 206, which requires that Eagle Crest file a revised Exhibit F drawing revising the design of the lower reservoir spillway channel to safely convey anticipated flood flows across the Colorado River Aqueduct (Article 206).

To ensure that any design changes would not increase the environmental effects of releasing excess water from the reservoirs, the design flood determination would be included in a Supporting Design Report, which will be reviewed and commented on by the Commission prior to start of construction. A likely dam break analysis and analysis design of flood conditions will be included in the Emergency Action Plan, which is required to be submitted at least 60 days prior to initial filling of the reservoir in accordance with Part 12, Subpart C of the Commission's regulations.

Residual Impacts after Implementation of Mitigation. Normal Project operations could continue with flood inflow volumes less than 200 acre-feet. No major effects on the Project area are likely from flood flows (FERC FEIS p. 84).

The PMF event is estimated to add 11,520 acre-feet to the reservoir system. The estimated recurrence interval of this event is about once every 10,000 years. In the event of a PMF type event, operational changes would be needed for about 12 days to discharge the excess that would accumulate in the reservoirs (FERC FEIS p. 84).

4.1.5.2 *Groundwater Quantity*

The FERC FEIS discusses potential environmental impacts to groundwater water quantity (pp. 96-109); that information is summarized below. Information from the State Water Board FEIR for the Project (pp. 3.3-1 – 3.3-43), is also referenced below. The information from the FERC FEIS and State Water Board FEIR was updated by BLM as described below.

FERC concluded that pumping groundwater in excess of annual recharge would potentially result in lowering of the water table and reduction of groundwater outflow from the Chuckwalla

groundwater basin. A groundwater balance was developed for evaluating the Project's effect on groundwater supplies. Over the life of the Project, initial pumping, along with existing water uses (e.g., agricultural and domestic water supply), would exceed recharge of the basin by about 4,600 acre-feet per year for the first 4 years (FERC FEIS p. 96). Similarly, the State Water Board found that during the initial fill, groundwater use will exceed recharge by approximately 4,800 acre-feet each year, so groundwater levels are expected to decrease during this period (State Water Board, 2013 pp. 3.3-26).

Following this initial period, recharge would exceed Project pumping and existing water uses by about 1,700 acre-feet per year because pumping would then be reduced to only provide make-up water for evaporative losses (FERC FEIS p. 96). Total groundwater use by the Project over a 50-year period, including water use for construction, was estimated at 109,620 acre-feet (FERC FEIS p. 96). [*See also* Section 6.2 below with discussion of the updated water budget to reflect current conditions and an updated list of projects from that used in the FERC FEIS and State Water Board EIR.]

Groundwater modeling indicates a predicted maximum groundwater drawdown of 50 feet at the pumping wells during the initial 4 years, but the drawdown would decrease and then level off at about 14 feet thereafter. A maximum drawdown of about 6 feet is projected to occur at distances of 1 mile from the pumping wells. Along the Colorado River Aqueduct in the Upper Chuckwalla and Orocopia valleys, the modeled maximum drawdown was about 3.6 to 4.3 feet. Groundwater levels could be lowered by about 3 to 4 feet at the mouth of the Pinto groundwater basin, with the amount of drawdown being less than this farther from the Project area in the interior of the Pinto groundwater basin. Groundwater modeling also estimated that after 50 years of Project pumping, inflow from the Pinto groundwater basin would decrease by about 30 acre-feet per year compared to pre-Project conditions. Compared to maximum historical drawdown levels (over 100 feet) near Desert Center or at the mouths of the Orocopia Valley (presumed to be minimal) and Pinto Valley (about 15 feet), the maximum drawdown caused by the Project's supply wells would be far less than occurred under historical conditions, especially in areas more than 1 mile from the supply wells. However, the drawdowns could potentially exceed maximum historical conditions specifically beneath the Colorado River Aqueduct by 5 feet in the Upper Chuckwalla Valley and by 4 feet in the lower Orocopia Valley (FERC FEIS p. 104 and State Water Board, 2013 p. 3.3-28).

FERC found that adjacent wells that were active during, or have remained active since, the 1980s would likely not experience adverse production, requiring well modification or replacement as a result of Project pumping. Project-induced drawdown, either during the initial fill period or during the continued Project operation, would not exceed historical drawdown levels.

In addition to potential Project effects on groundwater levels, the pumping induced groundwater depression could locally alter groundwater flow directions. Currently, groundwater flow is

generally from the west and north and toward the south and east (California DWR, 1979; CH2M Hill, 1996). Project pumping is expected to temporarily increase the pumping depression near Desert Center, particularly during the initial reservoir filling period; however, Project effects are not expected to substantially alter groundwater flow directions throughout the Chuckwalla groundwater basin (FERC FEIS p. 107; State Water Board, 2013 pp. 3.3-29 – 30).

The initial reservoir filling during the first 3 to 4 years of Project operation would result in groundwater overdraft and lowered water table levels because Project pumping is expected to exceed recharge rates during this period. However, in the long-term, the effect of groundwater withdrawal by the Project should not cause the aquifer to be overdrafted. Project withdrawals over 50 years of Project operation would total about 109,620 acre-feet [*now estimated to be less than 100,000 acre-feet*] or – assuming no recharge – about 1 percent of the recoverable water in the Chuckwalla groundwater basin (estimated to be between 9.1 and 15 million acre-feet [California DWR, 1975; California DWR, 1979, as cited in California DWR, 2004]). At the end of the potential 50-year License period, the aquifer storage, or cumulative change, would increase by about 74,000 acre-feet because recharge of the basin would exceed groundwater withdrawals for the majority of this period (FERC FEIS p. 98; State Water Board, 2013 p. 3.3-26).

FERC and the State Water Board (State Water Board FEIR p. 3.3-33) found that in the first 3 to 4 years of Project operation, the water table will drop notably because of the large amount of pumping required for the initial fill of the lower reservoir. However, in the long term, the effect of the groundwater withdrawal by the Project should not cause the aquifer to be overdrafted nor cause the groundwater table to decline below maximum historical drawdown levels. Article 403 of the FERC License requires Eagle Crest to develop a groundwater monitoring plan, with monthly monitoring during the first 4 years of pumping (i.e., the initial fill period); quarterly monitoring for the next 7 years, which should capture the maximum water table decline; and semi-annual monitoring thereafter, for the term of the License when changes to groundwater levels are expected to be small. Article 404 requires groundwater quality monitoring in the vicinity of the Project's reservoirs, desalination ponds, seepage recovery wells, and water supply wells over the term of the License (FERC License Section 76).

In 2006, the U.S. Bureau of Reclamation was directed to identify groundwater that may be considered Colorado River water, which led to the U.S. Geologic Survey's (USGS) development of the Accounting Surface Method. The USGS's Colorado River Accounting Surface Method estimates that the accounting surface is between 238 and 240 feet above mean sea level (msl) in the Chuckwalla Valley groundwater basin. The actual groundwater level in the basin near the Project's proposed water supply wells is about 450 feet above msl, or about 210 feet above the accounting surface. The maximum projected drawdown at the Project's wells is 50 feet, leaving the water table at its lowest point still 160 feet above the accounting surface. In other words, because the Project's groundwater pumping will retain a groundwater water level that at its lowest

point, will still be 160 feet above the accounting surface at the water supply wells, the Project will not have the potential to consume any groundwater that could be interpreted to be lower Colorado River water (FERC License, Section 68). Groundwater use by the Project will not have an adverse effect on the Colorado River Accounting Surface and, in turn, would not result in an unauthorized diversion of the Colorado River (FERC FEIS, p. 104). The draft Accounting Surface rule was later withdrawn by the Bureau of Reclamation in November 2011 (USBR, 2011).

Subsidence could potentially occur as a result of Project pumping if drawdown levels are substantial (defined as greater than historical levels that were known not to have caused subsidence), causing the subsurface stratum to collapse. Subsidence could also potentially occur as a result of hydrocompaction of sediments wetted from reservoir seepage (FERC FEIS, p. 108). There has been no reported evidence of subsidence in the Project area (or along the Colorado River Aqueduct) to date, nor will the Project lower water table elevations below historical levels. Therefore, under proposed conditions, the potential for subsidence caused by Project water supply pumping is concluded to be low (FERC FEIS p. 109).

The Project's reservoirs would occupy two open, former mining pits that are underlain by bedrock and alluvium. As such, some seepage from the reservoirs is expected. Based on these hydrogeologic conditions in the Project area, seepage could cause groundwater levels to locally rise, specifically beneath the nearby Colorado River Aqueduct. The rise of groundwater from seepage could potentially pose a subsidence risk from hydrocompaction in the Project area and vicinity. Up to 1,600 acre-feet of water is estimated to potentially seep from the Project facilities annually if only limited seepage control improvements were made (State Water Board, 2013; FERC FEIS p. 101).

The seeped water would generally flow down-gradient in an eastward direction toward the Chuckwalla groundwater basin; however, it is possible that some of the water could follow bedrock fractures or fault traces that direct groundwater in other directions. Groundwater modeling results predict that groundwater levels beneath the lower reservoir could rise by about 4 to 12 feet, while levels in the vicinity of the Colorado River Aqueduct could increase by 3 to 6 feet, not including groundwater drawdown caused by Project pumping. The proposed seepage control measures would consist of lining the reservoirs with fine tailings, lining the eastern portion of the lower reservoir (underlain with alluvium) with fine tailings and roller-compacted concrete, and installing a series of wells located downgradient from each reservoir for seepage monitoring and pump-back recovery. The water conveyance tunnels between the reservoirs would be lined with concrete and, in some locations with steel, to prevent seepage from those features. Monitoring groundwater levels throughout the groundwater basin area, with emphasis on the areas downgradient from the proposed reservoirs and brine disposal ponds, will allow detection of seepage to prevent effects on local and regional groundwater resources. In addition, this information will be used to detect changes in groundwater levels beneath the Colorado River

Aqueduct and provide information to help determine adaptive management procedures that would need to be implemented (FERC FEIS p. 101).

Groundwater Quantity Mitigation Measures. FERC found that the construction and monitoring measures and mitigation measures proposed for the Project are likely to be sufficient to control potential reservoir seepage effects on groundwater levels in the Project area (FERC FEIS p. 102). Article 405 of the License requires Eagle Crest to use reservoir liners to control seepage, and to conduct aquifer testing to confirm that aquifer characteristics like seepage are as expected. The Aquifer Testing Plan required by Article 405 was developed by Eagle Crest in consultation with the State Water Board, the BLM, NPS, Metropolitan Water District, and Kaiser and filed with FERC on February 19, 2015. FERC modified and approved the Aquifer Testing Plan on March 16, 2015. Article 405 also requires Eagle Crest to develop a Seepage Management and Monitoring Plan detailing the location and pumping capacity of the seepage recovery wells and the final design of the reservoir liner. The article also requires that the Seepage Management and Monitoring Plan include the installation of observation wells to monitor the groundwater levels below the Colorado River Aqueduct, a program to regulate the rise in groundwater levels below the aqueduct, and the filing of annual reports.

In addition, the FERC License requires development of a Groundwater Quality Monitoring Plan (Article 404) and the protection of groundwater at the desalination ponds (Article 406). Articles 404, 405, and 406 reserve FERC authority to direct Eagle Crest to modify Project structures or operations, or conduct other appropriate actions if groundwater quality and groundwater level monitoring indicates that such actions are necessary to protect groundwater quality and land uses within the Project area.

A network of existing and new monitoring wells would be established to confirm that Project pumping throughout operations would be maintained at levels that are in the range of historical pumping in the Chuckwalla Aquifer, and that water table elevations remain above minimum historical levels. During the initial fill pumping period, the groundwater levels would be monitored on neighboring properties whose water production may be impaired by Project groundwater pumping. If Project pumping is determined to adversely affect these wells, Eagle Crest has committed to replace or lower the pumps, deepen the existing wells, construct a new well, and/or compensate the well owner for increased pumping costs.

Residual Impacts after Implementation of Mitigation. Implementation of the FERC License requirements would effectively monitor and manage groundwater levels in the Upper Chuckwalla groundwater basin (FERC FEIS p. 98). The long-term effect of groundwater withdrawal by the Project should not cause the aquifer to approach depletion or permanent overdraft, and should retain water table elevations above historical minimum levels. Project withdrawals over the 50-year License period would total less than 1 percent of total recoverable water in the Chuckwalla groundwater basin [not accounting for any natural recharge]; (FERC FEIS p. 98). At the end of the 50-year License period, the aquifer storage, or cumulative change,

would increase by about 74,000 acre-feet because the recharge of the basin would exceed groundwater withdrawals for the majority of this period (FERC FEIS p. 98). Articles 404, 405, and 406 reserve FERC authority to direct modification of Project structures or operations, or conduct other appropriate actions if groundwater quality and groundwater level monitoring indicates that such actions are necessary to protect groundwater quality and land uses within the Project area.

4.1.5.3 *Surface Water Quality*

The FERC FEIS discusses potential environmental impacts to surface water quantity (pp. 88-95). That information is summarized here.

Without treatment, the water quality in the reservoirs would diminish because salinity levels would increase due to evaporative losses from the reservoirs. The Project will treat a sufficient volume of reservoir water with reverse osmosis to maintain water quality comparable to the source water. Reverse osmosis systems are capable of desalinating water and producing mineral-free water. The water treatment system should prevent degradation of water quality from salinity increases that would occur otherwise (FERC FEIS, p. 89).

FERC anticipated that the time required to concentrate dissolved solids in the reservoir to levels considered a degradation of water quality would take longer than any reasonable reverse osmosis system downtime scenario involving maintenance or repair. In addition to removing salts from the water, most other contaminants (e.g., microbes), nutrients, and minerals would be removed as well. Therefore, eutrophication is not expected to occur because the water quality in the reservoirs would be maintained (FERC FEIS p. 90).

The interaction between water stored in the reservoirs and the surrounding exposed mine pit material could affect water quality by exposing minerals to surface water and oxygen. When the common mineral iron disulfide or pyrite is exposed, it reacts with oxygen and water (oxidizes) to form sulfate and acidic conditions (FERC FEIS p. 91). Existing data suggest that acid generation would be limited due to the lack of sulfide minerals onsite and buffering capacity of the site material and groundwater. Implementation of the required Phase 1 Pre-Design Site Investigation Plan will provide the data necessary to make quantitative determinations about the Project's effect on this aspect of water quality (FERC FEIS p. 94). The Site Investigation Plan requirements are included in Article 401 of the FERC License.

The reverse osmosis system would not be designed for treating the pH of the water; however, in the event of an observed drop in pH, a new treatment module would be added to accommodate buffering agents to treat water returning to the lower reservoir. In addition, the permeable membranes in the reverse osmosis system would filter any metals, precipitates (solids separated out of solution as a result of a chemical reaction), and the microbes involved in the chemical reaction that results in acid production (FERC FEIS p. 94).

Surface Water Quality Mitigation Measures. Article 401 of the FERC License requires Eagle Crest to conduct site investigations to determine potential water quality impacts to the reservoirs and groundwater associated with ore-body contact. Article 402 requires Eagle Crest to test excavated material for acid producing potential and if necessary dispose of it outside the reservoir. Article 406 requires Eagle Crest to operate the reverse osmosis desalination facility to maintain the reservoir equivalent to water quality of the source groundwater. FERC concluded that the testing and disposal requirements combined with the treatment system, and the seepage recovery system, will protect water quality both in the reservoir and in the groundwater (FERC License, Section 75). The FERC License includes Article 406 to address water quality.

Article 406 states,

> *…at least 6 months prior to the start of project construction, the licensee shall file for Commission approval, a reverse osmosis and desalination facilities construction and operation plan.*
>
> *The plan shall include, at a minimum:*
>
> *(1) a provision to construct and operate reverse osmosis and desalination facilities to treat the water in the upper and lower reservoirs to maintain, at a minimum, dissolved solids concentrations at the same concentrations as the source water from the project's water supply wells;*
>
> *(2) a provision to monitor the water quality of the project's upper and lower reservoirs;*
>
> *(3) a description of the steps to be taken in the event that reservoir water quality degrades to levels below that of the project's water supply wells monitored under Article 404;*
>
> *(4) a description of the steps to be taken in the event that monitoring under Article 404 demonstrates that the water quality of the seepage recovery wells degrades below pre-project operation groundwater baseline levels;*
>
> *(5) provisions for monitoring well placement and a monitoring program to ensure limited leakage through the desalination pond linings;*
>
> *(6) the specifications on the design of the desalination ponds, including a description of the liners;*
>
> *(7) a description of the steps to be taken in the event that monitoring indicates that the water from the desalination ponds has leaked into the groundwater;*
>
> *(8) a provision for filing annual monitoring reports; and*
>
> *(9) an implementation schedule.*
>
> *The plan shall be developed after consultation with the California State Water Resources Control Board, the Bureau of Land Management, and the National Park Service. The licensee shall include with the plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities*

> *above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.*
>
> *The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.*
>
> *The Commission reserves the right to direct the licensee to modify project structures or operations, or conduct other appropriate actions if the monitoring results or other applicable information indicate that such actions are necessary to protect groundwater quality and land uses within the project area.*

Eagle Crest estimates that about 2,500 tons of salt would be removed from the reservoirs each year and that these solids produced from the evaporation and solidifying ponds would need to be removed once every 10 years. The removal in 10-year intervals, as proposed, would require about 1,250 truck trips. A Transportation Plan developed in consultation with resource agencies and filed for Commission approval would ensure the transport of this quantity of material does not negatively affect other resources (e.g., noise levels and air quality) on a recurring basis (FERC FEIS p. 332).

Residual Impacts after Implementation of Mitigation. The water quality monitoring plan required in FERC License Article 406 will include steps to be taken in the event of water quality degradation in the reservoirs or groundwater. If Project operations are detected to have potentially detrimental effects on the quality of groundwater, the monitoring measures proposed by Eagle Crest, combined with the additional measures that will be included in the comprehensive water quality monitoring plan, would allow for surface and groundwater quality degradation and effects to be identified soon after they are detected. The water quality monitoring plan will also identify procedures and actions for Eagle Crest to follow to consult with agencies about additional measures that will be implemented to address any adverse effects on water quality (FERC FEIS p. 95).

4.1.5.4 *Groundwater Quality*

The projected changes in groundwater levels and flow direction and the great depth to groundwater levels and limited natural infiltration, indicate that changes in the chemical or

physical qualities of the groundwater are not expected due to the Project's expected groundwater withdrawal rates. In addition, the aquifer in the area where pumping will occur is unconfined and changes in the groundwater level would not cause a comingling of previously separated aquifers (FERC FEIS p. 108).

Groundwater Quality Mitigation Measures. To protect groundwater quality that may be affected by reservoir seepage, the License requires Eagle Crest to install and operate a reverse osmosis desalination facility and desalination ponds to remove the concentration of dissolved solids that may accumulate in the reservoirs as a result of evaporation. The License requires Eagle Crest to file annual reports on all aspects of potential Project impacts including reservoir seepage well levels and water quality, aquifer water level monitoring wells, and water supply well production and drawdown (FERC License Section 32). Article 404 requires the development of a Groundwater Quality Monitoring Plan.

> *Article 404. Groundwater Quality Monitoring Plan. Within 18 months of license issuance, the licensee shall file with the Commission for approval, a groundwater quality monitoring plan to monitor for any adverse effects of seepage from the project's reservoirs and evaporation ponds on groundwater quality.*
>
> *The plan shall include, at a minimum:*
>
> *(1) provisions to establish two years of pre-project operation baseline groundwater quality monitoring data in the vicinity of the project's reservoirs, desalination ponds, seepage recovery wells, and water supply wells;*
>
> *(2) provisions to monitor groundwater quality in the vicinity of the project's reservoirs, desalination ponds, seepage recovery wells, and water supply wells over the term of the license;*
>
> *(3) specific sampling locations, methods, and frequency;*
>
> *(4) constituents to be analyzed (e.g., salinity, odor, and trace metals);*
>
> *(5) a provision for filing annual monitoring reports; and*
>
> *(6) an implementation schedule.*
>
> *The licensee shall prepare the plan after consultation with the California State Water Resources Control Board, the Bureau of Land Management, the U.S. Geological Survey, the National Park Service, and the Metropolitan Water District of Southern California. The licensee shall*

> *include with the plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific reasons.*
>
> *The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.*
>
> *The Commission reserves the right to direct the licensee to modify project structures or operations, or conduct other appropriate actions if the monitoring results or other applicable information indicate that such actions are necessary to protect groundwater quality.*

The Groundwater Quality Monitoring Plan was completed in consultation with the State Water Board, BLM, USGS, NPS, and MWD as required, and was approved by FERC on January 20, 2016.

Residual Impacts after Implementation of Mitigation. The Groundwater Quality Monitoring Plan required in Article 406 includes steps to be taken in the event of water quality degradation in the reservoirs or underlying groundwater. If the Project has seepage losses that could lead to a detrimental effect on the quality of groundwater, the monitoring measures included in the comprehensive Groundwater Quality Monitoring Plan provide that surface and groundwater quality effects will be identified soon after they develop, triggering implementation of additional actions and treatment measures to address those effects on water quality (FERC FEIS p. 95).

4.1.6 *Land Use*

The location of the Project's upper and lower reservoirs is in the lower of two former mined pits. The proposed new usage in this area would be consistent with its historical usage as an industrial mining operation, therefore is it not likely to conflict with the existing CDCA Plan (FERC FEIS p. 211).

The proposed gen-tie line and water supply pipeline ROW is located on lands managed under the DRECP and CDCA Plans. A CDCA PA is required because the Project linear features are outside the corridors identified in the existing CDCA Plan (FERC FEIS p. 212). The transmission line is above the 161 kV limit for lines outside a designated corridor and the

pipeline diameter is above the allowable size outside a designated corridor (Figure 1-1). The CDCA contemplates PA in these situations. CDCA Plan (1980, p. 95). The majority of the utility ROW would be located adjacent to an existing 160-kV gen-tie line in the Chuckwalla Valley with lines crossing I-10 to connect to an existing Red Bluff substation servicing the DSSF project.

The DSSF project environmentally superior alternative gen-tie line route was adjacent to, but south of, an existing SCE gen-tie line. The FERC-approved Project corridor for the Project uses the same gen-tie line corridor proposed for the DSSF project, adjacent to, but north of, the existing SCE gen-tie line.

Residences along travel routes may experience some temporary impacts from construction noise and emissions, as discussed in Section 4.1.1 Air Quality and 4.1.7 Noise, of this EA. Construction activities would include minimization measures to mitigate impacts. Operation activities would be consistent with historical industrial use.

With the adoption of the CDCA PA, the ROW grant would fully conform to BLM's Land Use Plan. With respect to the DRECP, a comparison of the DRECP CMAs with the FERC License requirements was done to determine if additional conservation measures would be required (Appendix A). The FERC License requirements satisfy the majority of the DRECP LUPA/FEIS CMAs. BLM will include some additional conservation measures (DRECP CMAs) that were not requirements in the FERC License as a condition to the Project ROW grant. Other DRECP CMAs or land management goals were determined to be inapplicable to the Project since they would unreasonably interfere with a federally-licensed VER (Table 1-3). Table 4-6 describes the CMAs that BLM would include as conditions of the ROW.

Table 4-7: DRECP CMAs that would be made a condition of BLM granting the ROW on BLM lands.

DRECP CMA No.	CMA Description
LUPA-BIO-8: General Closure and Decommissioning Standards	All activities that are required to close and decommission the site (e.g., renewable energy activities) will specify and implement project-specific closure and decommissioning actions that meet the approval of BLM, and that at a minimum address the following: • Specifying and implementing the methods, timing (e.g., criteria for triggering closure and decommissioning actions), and criteria for success (including quantifiable and measureable criteria). • Recontouring of areas that were substantially altered from their original contour or gradient and installing erosion control measures in disturbed areas where potential for erosion exists. • Restoring vegetation as well as soil profiles and functions that will support and maintain native plant communities, associated carbon sequestration and nutrient cycling processes, and native wildlife species. • Vegetation restoration actions will identify and use native vegetation composition, native seed composition, and the diversity to values commensurate with the natural ecological setting and climate projections.[12]
LUPA-BIO-IFS-3:	All culverts for access roads or other barriers will be designed to allow unrestricted access by desert tortoises and will be large enough that desert tortoises unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.
LUPA-BIO-IFS-6:	When working in areas where protocol or clearance surveys are required (see Appendix D), biological monitoring will occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.
LUPA-BIO-IFS-7:	A designated biologist (*see* Glossary of Terms) will accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.
LUPA-PALEO-1	If not previously available, prepare paleontological sensitivity maps consistent with the Potential Fossil Yield Classification for activities prior to NEPA analysis.
LUPA-PALEO-2:	Incorporate all guidance provided by the Paleontological Resources Protection Act.
LUPA-PALEO-3:	Ensure proper data recovery of significant paleontological resources where adverse impacts cannot be avoided or otherwise mitigated.
LUPA-PALEO-4:	Paleontological surveys and construction monitors ground disturbing activities that require an EIS.[13]

[12] The "General Closure and Decommissioning Standards" apply only to Project-specific closure and decommissioning obligations. Mining-related closure and reclamation standards are contained in existing BLM and County of Riverside reclamation plans.

DRECP CMA No.	CMA Description
Chuckwalla ACEC Actions	**Management Action Description**
Trails and Travel Management	Management Actions: Stopping, parking, and vehicle camping are allowed no more than 100 feet from the centerline of an approved route of travel. Where wilderness areas would be closer to an approved route than the indicated standard, stopping, parking, and vehicle camping are allowed only to the boundary. Management Action: Areas are designated as "washes closed zones" wherein vehicle use would be restricted to specific routes, including navigable washes that are individually designated "open" or "limited".

[13] The ECE project is sited and designed in a manner to have a very low potential for any effects on paleontological resources. The previously mined lands, in which the reservoirs and underground power system works will be placed, are deeply excavated and have no potential for paleontological resources. The powerline tower foundations are a relatively small footprint (estimated excavation total of 0.12 acres) and excavated by drilling methods that do not lend themselves to recovery of intact materials. The water pipeline will be excavated to a depth of about 6 feet, with a trench of about 6 feet in width (estimated excavation total of 8.73 acres). Most of the pipeline route lies adjacent to existing roads (SR 177 and Kaiser Road) and to an existing transmission corridor, and cross previously disturbed lands. The valley floor lands crossed by the pipeline are composed of sedimentary deposits with some potential to contain paleontological resources. For that reason, the BLM ROW will include a requirement for a paleontological resources monitor to be present during the trench excavation for the water pipeline for proper data recovery of significant paleontological resources consistent with the Paleontological Resources Protection Act.

4.1.7 *Noise*

Construction of the Eagle Mountain Project would have a temporary effect on ambient noise levels. Table 4-7 (FERC EIS p. 268) estimates Lmax of rock drill and dump truck noise at 50 feet compares it with the estimated dBA at the closest residence.

Table 4-8: Minimum Distances and Lmax Noise Levels (in dBA) at Sensitive Land Uses.

Project Component	Closest Distance to the Sensitive Land Use	L_{max} at 50 feet (rock drill/ dump truck)	L_{max} at Closest Residence (rock drill/ dump truck)
Reservoir sites	4 miles (residences)	98/88	32/22
Reservoir sites	2 miles (Joshua Tree National Park)	98/88	43/33
Pipeline/gen-tie line	200 feet (residences)	98/88	83/73

Notes for Table 4-7:

- Lmax – the maximum sound level measured over the measurement period

As indicated, maximum estimated construction noise at the Eagle Mountain mining site would be 32 and 22 dBA during drilling and for dump trucks. Noise levels at the boundary of the Joshua Tree National Park would be up to 43 dBA and 33 dBA. These noise levels would likely not be audible to nearby residences or Joshua Tree National Park (FERC FEIS p. 268).

Noise levels during construction of the Project ROW would be adverse, but would proceed linearly away from the sensitive receptors, lasting not more than a few days or weeks at each location. Noise would increase along Kaiser Road as a result of an increase in traffic from additional construction vehicles (FERC FEIS p. 269).

Normal operation of the Eagle Mountain Project would result in a minimal increase in road traffic from employees commuting to the site. The Project's powerhouse will be located underground. During the expected time when Eagle Crest plans to remove the salt from the reverse osmosis system evaporation ponds at 10-year intervals, noise levels would be noticeably higher from the movements to and from the site of the required haul trucks.

The corona noise at the edge of the proposed 500-kV gen-tie line ROW is estimated to range from 37 to 43 dBA at a sensitive receptor site 200 feet away (FERC EIS p. 270).

Impacts from noise would be minimal during construction and operation of the Project's facilities since most of the operational equipment will be located deep underground. At certain times such as during wet conditions (which is rare in the desert) and during salt removal, noise impacts would be noticeable to sensitive receptors in the area. However, these impacts are temporary and occur in rare instances.

4.1.8 *Paleontological Resources*

Elsewhere in southern inland California, older Pleistocene sediments have yielded fossil resources. The potential for this unit to contain paleontological resources is dependent on its depositional context and lithology. The Pleistocene alluvium (Quaternary older alluvium) in the Project area is composed of alluvium and fanglomerate with sediments possibly derived from the Brawley Formation or Ocotillo Conglomerate/Palm Springs Formations, which could themselves contain fossils (Division of Geological Sciences at the San Bernardino County Museum 2009, cited in the DSSF FEIS, p. 3.7-2).

The Brawley Formation and Ocotillo Conglomerate/Palm Springs Formations themselves do not occur near the Project area or proposed ROW lands. To be present in the region of the Project, any fossil resources would have to have been eroded from these formations (i.e., separated from any depositional information and value), transported, and deposited with the sediments of the Quaternary older alluvium. This transport and deposition would result in fragmentation and reduction of any fossil resources of notable scientific value. Therefore, the recent Holocene alluvium and the Pleistocene older alluvium (Qoa) at the surface in the region of the Project have a low potential to contain notable fossil resources (Eberhart/United Consultants 2007, cited in the DSSF FEIS, p. 3.7-2). However, if there are any cohesive beds of fine-grained sediments with characteristics of lake or low-energy fluvial deposition lying unexposed beneath the surface, these beds could have a higher potential for paleontological resources.

Paleontological Mitigation Measures. The required HPMP developed between FERC and the SHPO, and in consultation with BLM, states that:

> *Paleontologists at the San Bernardino County Museum (SBCM) will be consulted as to the potential for paleontological resources to be located within the project boundaries, based on their reference maps of previous discoveries. The results of the SBCM review will be provided to the BLM, Palm Springs Resource Area, geologist for review and comment. If recommended by the BLM geologist, a field reconnaissance of any areas of high potential will be undertaken. If marine or non-marine fossil deposits are exposed during construction, an SBCM paleontologist will be dispatched to evaluate the finds and in consultation with BLM, will make recommendations for mitigation of impacts, including recovery and documentation. Any recovered fossils will be curated at the SBCM.*

Residual Impacts after Implementation of Mitigation. The HPMP requirement to address newly discovered paleontological resources that may be identified on federal lands satisfies the recent paleontological law enacted by Congress in March of 2009. Although Section 106 has no provisions for protecting paleontological resources, such resources should be protected in any

case, and it is appropriate to use an HPMP to reference the protection of such resources because they are similar in nature to archeological resources (FERC FEIS p. 245).

4.1.9 *Recreation*

Construction activities for the reservoirs and Project ROW would occur in the Central Project Area and along Eagle Mountain Road, respectively. There are no recreational activities within the proposed Central Project Area. Access to the existing road under the Desert Sunlight 230-kV gen-tie line is currently restricted. Access may be limited or delayed on Eagle Mountain Road as this will be the primary road used for moving equipment and materials to the Project site.

The Joshua Tree National Park property lies near the Project lands on three sides (north, west, and south) with the closest Joshua Tree National Park boundary located 1.5 miles from any Project features. However, there is no public access between the Joshua Tree National Park and the Project, and visitation to the Joshua Tree National Park's southeastern boundaries is low (FERC EIS p. 204). Impacts to recreational users from construction and operation of the Project would be low as the Project area and mine site has been closed to public assess for many decades. During construction, Eagle Crest would coordinate construction schedules with BLM to ensure the public was aware of access issues along Eagle Mountain Road (FERC FEIS p. 205).

4.1.10 *Visual Resources*

Construction of the Project's gen-tie line and water supply pipeline would occur within a 200 feet ROW, spanning a total of 16.4 miles, and require use of heavy machinery during construction and for development of some new access roads (FERC FEIS p. 218). Additionally, segments of the Project ROW would be in close proximity to Eagle Mountain Road, thus creating numerous points where the proposed gen-tie line would be highly visible to motorists and local residents (FERC FEIS p. 222). The Eagle Mountain gen-tie line and water supply pipeline ROW would be located in Class II and Class III designated areas, adjacent to an existing 160-kV gen-tie line corridor that runs south, crossing I-10 to an existing substation in a Class II designated area. The Red Bluff substation serves the existing DSSF project.

No change is expected to the Project area BLM class categories. Visual impacts during construction would be temporary, as equipment would be on site for excavation, drilling, blasting, and erecting towers (FERC FEIS pp. 221-227).

Construction and operation of the Eagle Mountain Project would use two existing mine pits from the now defunct Eagle Mountain Mine operations. The additional elements in the viewshed would include reservoirs, dams, new power lines, fences, brine ponds (evaporation ponds for the RO system), graded and revegetated landscapes, and buildings (FERC FEIS p 218).

Visual Resources Mitigation Measures. Articles 420 and 421 of the FERC License require Eagle Crest to prepare a Facility Lighting Design and Night Sky Monitoring Plan and a Visual Effects Protection Plan.

Article 420 states,

> *Within one year of license issuance, the licensee shall file with the Commission for approval, a facility lighting design and night sky monitoring plan. The plan shall include, at a minimum: (1) provisions for establishing the baseline night sky condition prior to project construction; (2) a provision for limiting light pollution by focusing light on project facilities; (3) provisions for reducing the casting of light into adjacent native habitats; (4) a provision for evaluating facility lighting effects on the night sky; (5) modifying facility lighting based on monitoring results; and (6) an implementation schedule.*
>
> *The licensee shall develop the plan after consultation with the California Department of Fish and Wildlife, Bureau of Land Management, U.S. Fish and Wildlife Service, and the National Park Service. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project- specific information.*
>
> *The Commission reserves the right to require changes to the plan. Project construction shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.*

Article 421 states,

> *Within 18 months of license issuance, the licensee shall file with the Commission for approval a Visual Effects Protection Plan. The plan shall include, at a minimum: (1) a provision to utilize existing roads and construction laydown and staging areas for project construction where possible; (2) a provision to combine and organize staging areas and areas needed for equipment operation, material storage, and assembly for*

> *construction to minimize the total footprint needed; (3) a provision to reduce the amount of side-cast soils for construction of the water supply pipeline to decrease the color contrast with the surrounding landscape; (4) a provision to employ visual mitigation in the design of the transmission line to minimize visual effects, such as specifying materials with a dull finish and landscape appropriate colors; and (5) an implementation schedule.*
>
> *The licensee shall develop the plan after consultation with Riverside County, the Bureau of Land Management, and National Park Service. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agency's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project- specific information.*
>
> *The Commission reserves the right to require changes to the plan. Project construction shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.*

The Facility Lighting Design and Night Sky Monitoring Plan was developed in consultation with the CDFW, BLM, USFWS, and NPS and filed with FERC June 19, 2015 and approved by FERC August 3, 2015.

The Visual Effects Protection Plan was developed in consultation with Riverside County, BLM, and NPS and filed with FERC December 19, 2015 and approved by FERC April 18, 2016.

Residual Impacts after Implementation of Mitigation. Construction of the proposed transmission alignment across BLM-managed land would introduce new cultural modification into the landscape, but not enough of a modification to justify lower Visual Resource Management (VRM) class ratings (FERC FEIS p. 222). Under Eagle Crest's proposal, the reservoirs, dams, spillway, fencing, substation, reverse osmosis plant, brine ponds, and storage area would introduce new and different uses into the historical Eagle Mountain iron ore mine. Very limited portions of Project features near the reservoirs would be visible from areas within the Chuckwalla Valley; however, the details would be difficult to ascertain because the features would be in the viewers' middle ground and within the already disturbed Eagle Mountain mine

site (FERC FEIS p. 225). The Visual Effects Protection Plan, required by Article 421, will reduce these impacts to the extent possible.

Night sky monitoring, required by Article 420, would provide the data necessary to understand the potential changes to the night sky due to Project security lighting. Findings from the monitoring will result in design or product selection that minimizes light pollution from Project sources. Incorporation of low-light emitting policies and design elements would prevent further degradation of the dark night sky in close to the Joshua Tree National Park, thereby preserving wilderness qualities in areas out of direct sightlines of the proposed facilities (FERC FEIS p. 225).

4.1.11 *Socioeconomics*

Construction of the Project is expected to occur over a period of 4 years. The total construction workforce payroll cost for the Project is estimated to be $58 million. The Project would have a beneficial effect on local employment and income as most of the labor pool would come from within the county. Short-term housing is abundant in the county, as are schools and medical facilities (FERC EIS p. 251).

The Project would contribute to the revenues of county and local governments through the payment of property taxes and sales and use taxes. Property taxes are estimated to rise to approximately $8,390,000 per year by the time construction is complete (FERC FEIS p. 251). The FERC FEIS further estimates Project sales tax revenue and other benefits from construction (FERC FEIS p. 252).

Operation of the Project is expected to have a positive benefit to the local county with the purchases of supplies and parts within the region. There would be no displacement of residences or businesses due to the construction and operation of the facilities (FERC FEIS pp. 252-253).

4.1.12 *Environmental Justice*

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (EPA, 2015). The Project would result in an environmental justice effect if both of the following are true: (1) there is an unavoidable adverse impact to humans, and (2) the affected area contains a minority or low-income population.

In 2010, the U.S. Census Bureau reported Riverside County had 46 percent Hispanic and 40 percent white compared to 37 and 40 percent, respectively, for the state (Desert Harvest, p. 3.16-2). Although minority and low-income populations exist near the Project area, none would be adversely affected by the construction and operation of the ROW. The location of the ROW is primarily in a remote and arid region, unpopulated, and extending approximately 10 miles north of the community of Desert Center. Environmental impacts associated with the construction of the

ROW would be minimal, temporary and far removed from the population. The Project location was chosen due to the availability of two large inactive mining pits, and other factors unrelated to economic status of the surrounding rural community. There are no adverse impacts from the construction and operation of the Project that would disproportionately affect minority and low-income populations within the Project area. Additionally, the Project would bring jobs and other increased economic activity to the area (FERC EIS p. 253).

4.2 Alternative B: No Action

Under the no action alternative, the BLM would not grant a ROW to Eagle Crest for the linear features and portions of the Central Project Area located on lands managed by the BLM, and the CDCA Plan would not be amended to allow for the construction of the transmission interconnection to the Red Bluff substation, or the water supply pipeline from the Project's wells to the lower reservoir. The detrimental environmental impacts associated with construction and operation of the Project would not occur under the no action alternative.

The beneficial environmental impacts of the Project would also not occur. Beneficial impacts of the Project include the electrical generation offset of CO2 emissions, as described in Table 4-4. The Project's potential beneficial impacts on climate change of reducing CO2 emissions by approximately 50,000 to more than one-million tons per year, would not occur with the no action alternative. The Project's additional benefit of enhancing the integration of a higher percentage of renewable solar and wind generation sources as required to meet state of California RPS would also not occur with the no action alternative. Storage of surplus renewable generation and power generation for transmission grid operations, needed to correct for the intermittent nature of solar and wind generation, would also not be available with the no action alternative.

CHAPTER 5:
OTHER NEPA CONSIDERATIONS

5.1 Unavoidable Adverse Effects

The preferred alternative as analyzed in the FERC FEIS found the following unavoidable adverse effects (FERC FEIS pp. 334-335):

- Reclamation of existing rock and ore materials from both recoverable and bedrock sources present within the Central Project Area would not be possible once the Project is constructed and is in operation.
- Project pumping to initially fill the reservoirs would exceed natural recharge rates in the groundwater basin by about 4,600 acre-feet for each of the 4 years causing temporary overdraft of the aquifer and drawdown of groundwater levels.
- About 1,700 acre-feet per year of the groundwater used to fill and maintain the reservoirs would evaporate.
- Visual impacts of the Project structures, especially the transmission line and substation, would be irreversible but would be limited by mitigation measures and the recommended route and location.
- Construction of the Project would eliminate 109.5 acres of currently undisturbed desert habitat.
- The proposed use of private lands for portions of the Project could limit the feasibility of that land for other uses.

5.2 Short-Term Benefits vs. Long-Term Productivity

Under the preferred alternative, (1) the Project would provide a dependable source of electrical energy for the region (4,308,000 MW hours annually); (2) the 1,300 MW of electric capacity would come from a renewable resource that would not contribute to atmospheric pollution; (3) pumped storage projects store power during off-peak periods can provide rapidly during on-peak periods and could provide a valuable addition to the stability of the regional electrical grid; and (4) the recommended environmental measures proposed by Eagle Crest (which are now formally prescribed in the FERC License conditions), would adequately protect and enhance environmental resources affected by the Project. The overall benefits of the preferred alternative would be worth the additional costs of the proposed and recommended environmental measures (FERC FEIS p. 27).

5.3 Irretrievable Commitment

Physical resources would be used by the gen-tie and water supply pipeline, including the use of steel and/or wood for the transmission structures, concrete for the structural foundations, and a variety of metals and other materials for the conductors. Many of these materials, particularly the metal components of the gen-tie, have value as scrap, and would most likely be recycled or reused upon decommissioning of the Project. As such, only a portion of the physical materials that would be used can be considered irretrievably committed or permanently lost.

Water would be used for filling the reservoirs and for concrete mixing and dust abatement during construction. Water would also be used during operation to make up water lost from the reservoirs to evaporation. Water lost to evaporation is irretrievably lost for other beneficial uses.

Fossil fuel would be burned and permanently lost during construction of the Project, and limited amounts of fossil fuel would be similarly lost during operation and maintenance activities over the life of the Project. This fossil fuel, once used, would be irretrievable.

The site's use as a pumped storage facility may limit the capacity to recover further iron ore however, the remaining deposits contain low average iron content, and no ore processing facilities remain on the site. Furthermore, using rail to transport material would require substantial reconstruction for reoperation. Therefore, future iron mining is not a probable future project within the Project boundary (State Water Board pp. 5-3 – 5-4).

The Project would use part of the fine tailings stored on-site to create a reservoir liner or construction of a low-permeability central core in the embankments proposed for the Upper Reservoir site. Recycling of the large volumes of mine tailings around the site would be a significant benefit over the long-term. None of these changes are irreversible, but resources will be committed for the life of the Project (State Water Board pp. 5-3 – 5-4).

The Project will convert disturbed land to industrial use with reservoirs, transmission structures, and other related components; however, these changes would only occur over the life of the Project. This impact could be reversed if the reservoirs were reclaimed [drained] and transmission line is dismantled at the end of the Project. The Project duration is estimated at 50 years based in part on FERC licensing, permitting, market conditions, and various other components which are unknown at this time.

In summary, the Project would have no significant irretrievable commitments (State Water Board pp. 5-3 – 5-4).

CHAPTER 6:
CUMULATIVE EFFECTS

As required under NEPA and the regulations implementing NEPA, this section analyzes potential cumulative impacts from past, present, and reasonably foreseeable future actions combined with the Proposed Action within the Cumulative Effects Study Area specific to the resources for which cumulative impacts may be anticipated. A cumulative impact is defined (40 CFR 1508.7) as,

> *…the impact which results from the incremental impact of the action, decision, or Project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."*

Based on review of the License Application and agency and public comments, FERC identified hydrology and water quality, biological resources (including federally-listed threatened and endangered species), land use, recreation, visual resources, and air quality as having the potential to be cumulatively affected by the proposed Project in combination with other past, present, and foreseeable future actions. These resources were selected because of the potential that they could be cumulatively affected by the development of this Project in addition to other residential and agricultural groundwater uses, the Colorado River Aqueduct, the once proposed Eagle Mountain landfill (now cancelled), proposed solar energy and wind energy developments, and other actions that we identify in our analysis. BLM has added an analysis in this EA of cumulative impacts to cultural resources as well.

The cumulative effects study area (CESA) of the analysis defines the physical limits or boundaries of the proposed action's effect on the resources. Because the proposed action would affect the resources differently, the CESA for each resource may vary.

The CESA for water resources would be the Chuckwalla Valley Aquifer and potentially adjacent, hydrologically connected aquifers, such as the Pinto Basin Aquifer. This CESA was selected because the groundwater to be used for this Project, as well as other reasonably foreseeable projects, would be withdrawn from the Chuckwalla Valley Aquifer, and cumulative groundwater-level effects may extend to adjacent basins.

The CESA for terrestrial resources would be lands above the Chuckwalla Valley Aquifer and Pinto Basin Aquifer, which includes portions of Joshua Tree National Park. This broad area was identified to address the potential for subsidence related to groundwater withdrawal to cumulatively effect terrestrial plants and wildlife. Other Project effects would also be limited to this geographic area.

The CESA for recreation, land use, and aesthetics is the greater Chuckwalla Valley from the Coxcomb Mountains to the east, the Chuckwalla Mountains to the south and Joshua Tree National Park to the north and west. This area offers the recreation opportunities, landscapes, and the visual resources, which are typical of the region, and may also be cumulatively affected by other reasonably foreseeable projects.

The CESA for other resources, including geological resources and soils; terrestrial and threatened and endangered species; cultural; socioeconomics; and air quality and noise, is that portion of the Chuckwalla Valley and I-10 corridor sufficient to encompass all Eagle Crest Project facilities, as well as construction and operation effects.

The temporal scope of the cumulative effects analysis in the FERC FEIS includes past, present, and future actions and their respective effects on each resource that could be cumulatively affected. The temporal scope looks 50 years into the future, based on the term of the FERC License, concentrating on the effect on the resources from existing and reasonably foreseeable future actions. The historical discussion limited, by necessity, to the amount of available information for each resource. Present resource conditions were based on the License Application, agency comments, and comprehensive plans.

6.1 Air Quality and Climate Change

The Project's potential air quality effects are described in Section 4.1.1, including the mitigation measures required to be implemented to reduce the Project's individual impacts. In the FERC FEIS (p. 270), FERC described that, given the progress and locations of other projects, construction of the solar projects would be removed from cumulative actions due to their locations and distances from the Project. The Project is expected to have negligible cumulative effects on air quality since it will not be constructed concurrent with the nearby solar power projects, and the potential emissions related to the landfill project have been eliminated because the landfill project has been cancelled. Because construction of the Project would result in a temporarily notable construction-related effect for NO_X in the 2 years expected to construct the Project. The Project would also be considered to have a notable cumulative air quality impact for NO_X, as a precursor to ozone formation, in those 2 years. However, because of the temporary nature of construction activities and implementation of proposed measures, the severity and frequency of these effects would be limited. Based on the location and timing of the Project, the CO, PM10, and PM2.5 effects are not likely to be cumulatively notable (FERC FEIS p. 270).

In the long term, the cumulative effects of the solar projects and the energy storage Project are a significant benefit to regional air quality by reducing the need for fossil-fueled energy sources, and a benefit globally in significantly reducing GHG emissions. The Project's impacts on potential climate change are beneficial, since the Project will reduce CO_2 emissions by approximately 50,000 to more than 1 million tons per year, varying with pump-back power source. The Project has an additional benefit of enhancing the integration of a higher percentage of renewable solar and wind generation sources as required to meet state of California RPS through storage of surplus renewable generation,

and by providing power generation for transmission grid operations needed to correct for the intermittent nature of solar and wind generation, therefore further reducing GHG emissions.

6.2 Hydrology and Water Quality

The FERC FEIS (pp. 110-115) estimated the cumulative effects of the Project on groundwater, in addition to existing and proposed (reasonably foreseeable) groundwater uses. The FEIS found that future groundwater use in the basin would have the potential to cumulatively exceed recharge by up to 3,200 acre-feet per year over the 50 years of the withdrawals for the Project. By 2046, the aquifer storage, or cumulative change, would have been reduced by about 95,300 acre-feet, equal to about 1 percent of the total groundwater in storage in the basin (estimated to be 9.1 to 15 million acre-feet).

The FERC FEIS was published in 2012. At that time, 14 solar projects were planned with water use estimates of about 17,742 acre-feet for construction plus 2,506 acre-feet per year during operation (FERC FEIS p. 112). Since the FEIS was published, many of the solar projects that were planned for the area are no longer under consideration. Table 6-1 shows the current list of four planned or operating solar projects with annual average water usage of 1,850 acre-feet per year.

Water usage estimates are also lower due to the cancellation of the Eagle Mountain landfill project and an updated schedule for the implementation of the pumped storage Project timing. Total cumulative water usage estimates are about 114,560 acre-feet lower than previously calculated (Table 6-2).

A revised water balance was developed based on these changes in regional water use. The balance considers the timing of water use by projects and calculates the cumulative change in aquifer storage. The revised estimate indicates that outflows will exceed inflows from the start of the initial fill in 2020 until 2042 with a maximum reduction in aquifer storage of about 4,200 acre-feet and will recover to pre-Project conditions by 2046. The maximum reduction in storage represents 0.03 to 0.05 percent of total groundwater in storage and an average reduction of groundwater levels of 0.3 feet basin wide (Table 6-3).

These estimates only consider changes to solar, landfill, and Project use. Other previously documented projects and activities such as agriculture and aquaculture usage may be considerably less than originally estimated as well. Evidence for changes to these water uses are likely lower based on observations of idle jojoba fields, palm orchards, and fish ponds, but have not been documented or quantified at this time, and were therefore not reduced for this updated assessment.

Table 6-1: Updated Solar Water Use Estimates.

Project Serial Number[1]	Project Status	Project Name	Total Construction Water Usage (acre-feet)	Construction Period (months)	O&M Water Usage (acre-feet per year)	O&M Period (years)	Average Annual Water Use (acre-feet per year)
CACA 048649	In operation	Desert Sunlight	1500	26	2.3 [1]	27.8	52
CACA 048810	FEIS	Palen Solar Power	1130	34	201	27.2	220
CACA 048880	In operation	Genesis Solar	1368	36-39 [2]	1644	27.0	1525
CACA 049491	Approved	Desert Harvest	400-500 [2]	24	39	28.0	53
						Total	**1850**

Notes for Table 6-1:

Revision based on updated information from BLM website.

[1] Includes an additional 50 acre-feet over the life of the Project based on the variance request.

[2] For ranges of values, the value that yielded the highest water usage was used.

Table 6-2: Updated Chuckwalla Groundwater Basin Cumulative Water Use Estimates.

	2012-2013 Water Use Estimate (acre-feet)[4]	2016 Updated Water Use Estimate (acre-feet)	Difference (acre-feet)
Solar Projects[1]	123,841	55,502	-68,339
Landfill Project[2]	41,765	0	-41,765
Project[3]	109,620	105,164	-4,456
		Total	**-114,560**

Notes for Table 6-2:

[1] Updated based on average yearly water use over 30-year License period.

[2] No longer under consideration

[3] Updated use based on initial fill start in 2020 and end of License in 2064.

[4] Water use estimate from FERC EIS, 2012

Table 6-3: Cumulative Change in Groundwater Levels Estimated by Year.

Year	Cumulative Change (AF)	Cumulative Change in Groundwater Levels (Feet)
2015	23,866	1.59
2016	25,446	1.70
2017	26,849	1.79
2018	27,945	1.86
2019	29,377	1.96
2020	22,739	1.52
2021	16,101	1.07
2022	9,462	0.63
2023	2,824	0.19
2024	1,872	0.12
2025	1,536	0.10
2026	1,201	0.08
2027	866	0.06
2028	530	0.04
2029	195	0.01
2030	-140	-0.01
2031	-475	-0.03
2032	-811	-0.05
2033	-1,146	-0.08
2034	-1,481	-0.10
2035	-1,817	-0.12
2036	-2,152	-0.14
2037	-2,487	-0.17
2038	-2,823	-0.19
2039	-3,158	-0.21
2040	-3,493	-0.23
2041	-3,828	-0.26
2042	-4,161	-0.28
2043	-2,849	-0.19
2044	-1,537	-0.10
2045	-186	-0.01
2046	1,165	0.08
2047	2,717	0.18
2048	4,269	0.28
2049	5,821	0.39
2050	7,373	0.49
2051	8,925	0.59
2052	10,477	0.70
2053	12,029	0.80
2054	13,581	0.91

6.3 Biological Resources

6.3.1 *Desert Tortoise*

The FERC FEIS found that collocating gen-tie lines for the proposed Eagle Mountain Pumped Storage Project and DSSF project within the same corridor would reduce potential effects on desert tortoise. The support structures for each gen-tie line would likely provide nesting areas for ravens, a desert tortoise predator. Ravens exhibit territorial nesting behavior and aggressively defend their nesting area from other large birds, including other ravens, within a 2-mile radius from an active nest (USFWS, 2008). Such territorial nesting behavior and limited geographical distribution of the proposed support structures could reduce the number of potential nest sites created by the new gen-tie lines if the lines were located along the same corridor.

However, the DSSF project constructed their gen-tie line along Kaiser Road. As described in Section 2.1.3.1, the alternative of collating the gen-tie line with the DSSF gen-tie line is not a feasible alternative because that utility corridor is full, and there is no room for additional lines. BLM will not widen the corridor to accommodate another gen-tie line as the lands to the west of the corridor are an ACEC and NCL. New transmission and interconnect (i.e. generation tie lines) lines are allowed in designated corridors only in NCL lands. Therefore, some cumulative effects from the development of additional perch locations for ravens may occur.

In order to reduce impacts from predators, Article 417 of the FERC License requires Eagle Crest to develop a Revised Predator Monitoring and Control Plan. Article 417 states,

> *…within six months of license issuance, the licensee shall revise and file for Commission approval, its Predator Monitoring and Control Plan filed on March 11, 2011, to monitor and control the effects of increased predator activity on desert tortoise caused by the presence of the project. The plan shall include the follow additional items: (1) a provision for surveys for canine activity in the project area; (2) a provision for surveys for canine predation on desert tortoise; (3) a survey schedule that includes two annual pre-construction baseline surveys, two annual surveys during construction; and surveys in years 1–5, 7, and 10 following the initiation of reservoir filling; (4) agency consultation following the completion of the surveys; (5) development of mitigation measures to be implemented if surveys indicate increases in desert tortoise predator activity and increases in desert tortoise predation as a result of project-related effects such as introducing a water source and increased human activity; (6) development of a survey schedule for the remainder of the license term if surveys indicate a need for mitigation measures; (7) an implementation plan; and (8) a schedule for filing reports on the results of surveys.*

> *The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service, Bureau of Land Management, National Park Service, California State Water Resources Control Board, and California Department of Fish and Wildlife. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.*
>
> *The Commission reserves the right to require changes to the plan. Land-disturbing activities shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval the licensee shall implement the plan, including any changes required by the Commission.*

The Revised Predator Monitoring and Control Plan was developed in consultation with the BLM, USFWS, NPS, and CDFW, and modified and approved by FERC on May 19, 2016.

FERC's FEIS (p. 188) found that Eagle Crest's proposed measures to study effects of the Project on ravens and other desert tortoise predators and implement control measures as needed would ensure the collective effects on ravens are not substantially greater than the effects of the landfill and solar facilities alone. The landfill project has been cancelled, so there will be no cumulative effects from the landfill.

At the time FERC prepared their FEIS, there were 14 solar projects, totaling about 123,600 (± 35,000) acres, proposed in the Chuckwalla Valley. FERC noted that there is little certainty as to how many of these projects will be constructed. At this time, there are two commercial scale solar projects in the area that have been developed and are in operation, and two others still in development (Table 6-1). Compared to the scale of the solar projects, the effects of the proposed pumped storage Project on desert tortoise habitat in the Chuckwalla Valley (about 88.3 acres) would be very small.

The Project entails construction of a buried water supply pipeline and a gen-tie line across a designated 'linkage zone' for desert tortoise. These Project features will have no impact on desert tortoise movement, and therefore no cumulative impacts to desert tortoise movement within the linkage zone.

6.3.2 *Nelson's Bighorn Sheep*

The FERC FEIS analyzed the cumulative effects of the energy storage Project combined with the Eagle Mountain landfill and proposed solar projects. FERC found that construction and operation of both the proposed energy storage Project and the Eagle Mountain landfill could affect desert bighorn sheep in the Central Project Area. However the Eagle Mountain landfill project was subsequently cancelled after the FERC FEIS was completed. The proposed solar projects analyzed in the FERC FEIS would be located on the valley floor and are not expected to affect desert bighorn sheep (FERC FEIS p. 169).

6.4 Land Use

The FERC FEIS found that in the Desert Center area, five large-scale solar projects have been proposed, totaling more than 30,500 acres, with many more solar energy projects proposed for the greater Mojave Desert. (Since the time the FERC FEIS was prepared, the number of proposed solar projects has decreased, with two projects in operation and two additional projects in development.) These projects would contribute to the conversion of the rural desert landscape to a landscape potentially filled with utility-grade solar projects and appurtenant facilities, including gen-tie lines. Construction and operation would result in increased traffic and possibly a long-term demand for more services in the Lake Tamarisk and Desert Center areas, further contributing pressure for more land use conversions. Additional congestion and human development in the area would add pressure to the dispersed recreation opportunities throughout the area (FERC FEIS p. 228).

Construction of Eagle Mountain Project within the Project ROW would add to the cumulative effects on land use because the construction of 16.4 miles of gen-tie line with dozens of towers, and the buried water supply pipeline, would contribute additional energy infrastructure into the Chuckwalla Valley. Siting the lines outside the existing BLM-designated corridor as proposed would contribute to some amount of incremental erosion of the large open spaces the designated corridors are designed to preserve (FERC FEIS p. 229).

Development of the Project would contribute to conversion of the landscape with more human-made energy infrastructure, although, in contrast with the solar projects, the pumped energy storage Project is sited in previously disturbed land with impacts from decades of industrial-scale mining, a railroad, and abandoned townsite, and with linear facilities collocated to the extent possible with existing roads and transmission lines. The energy storage Project could also have positive effects on the growing renewable energy industry due to its energy storage capabilities. Procuring and developing energy storage is required by California law (AB 2514, signed September 29, 2010). For example, energy generated from other renewable sources (e.g., wind at night or solar during off-peak hours) could be stored and used to meet energy demand when other renewable sources may not be available. There is a growing concern related to the need for large-scale energy storage systems to better balance the electrical grid in light of the higher

percentages of renewable energy required by California law in order to reduce the emissions of GHG which is also as required by California law (FERC FEIS p. 228).

6.5 Recreation

Development and operation of the Project in addition to other reasonably foreseeable potential projects, including the solar projects, may have an effect on the wilderness experiences of visitors to the remote eastern margins of Joshua Tree National Park (FERC FEIS p. 228), and for aesthetics reasons explained in Section 6.7, below. There is no current recreational usage of the Central Project Area, so the Project will have no other impact on recreation, either alone or cumulatively.

6.6 Cultural Resources

Solar project development, along with the development of the pumped energy storage Project, could have a cumulative impact on cultural resources. However, with the implementation of the Project-specific HPMP, existing and inadvertent discoveries would be protected and/or preserved in perpetuity (FERC EIS, p. 333). Planning decisions in the DRECP LUPA/FEIS and ROD will protect cultural resources and limit the development of renewable energy in many areas of the desert.

Two historic resources were found in the vicinity of the gen-tie line and water supply pipeline ROW. No other cultural or historic resources have been identified within the Project APE. The archaeological sites will not be directly or indirectly impacted by the Project. The cumulative analysis below includes a qualitative assessment of the potential data contributions of these sites to important regional research themes in order to evaluate whether impacts to any of these sites, or sites like them inadvertently encountered during construction and operation of the Project or reasonably foreseeable actions, would constitute an adverse cumulative impact to cultural resources.

The two historic sites identified in the Project impact area consist of World War II era refuse scatters associated with the DTC/C-AMA: P 33 018391 (IMP 11903 (DS 494)) and P 33 018392 (IMP 11904 (DS 495)). As described in Eagle Crest's HPMP, archival research will be conducted at the Patton Museum at Desert Center and appropriate World War II era sources to identify the date and function of artifacts recovered from the testing program. The relationship of the site to other DTC/C-AMA sites will also be established to determine the source of desert training activities that produced this assemblage and what significance they had in understanding the training program. Possible sources of the embossed metal covers include practice mines or ration cans. Although none of historic sites will be directly or indirectly impacted by the Project, if they, or sites like them, were to be impacted by the construction of the Project, or any reasonably foreseeable actions, the loss of these sites would not be an adverse impact and would not result in a cumulative adverse effect to cultural resources.

6.7 Visual Resources

Utility-scale solar projects are a cumulative human development that has the potential to be more visible to Joshua Tree National Park users in the reasonably foreseeable future. Thousands of solar panels or reflection mirrors are proposed to be constructed in the Chuckwalla Valley, which could reflect the sunlight and catch the attention of Joshua Tree National Park visitors. The development of these projects and the associated security lighting would also contribute to the degradation of night-sky conditions to Joshua Tree National Park visitors to the area overlooking the valley (FERC FEIS p. 229).

More than 60 percent of the ROW route would cross through BLM-managed lands with VRM Class III designations while the remainder is Class IV. Some of these lands are now being used for large-scale solar projects. The vertical forms of the lattice towers would be visible, but difficult to discern in middle and background view distances as a result of the scale, existing towers, and variable texture of the valley landscape. The route would affect foreground views of travelers on SR 177 but these would be in addition to the existing SCE 160-kV line along the road sides.

Four large scale solar projects are in various stages of development and operation in the Chuckwalla Valley. These projects would contribute to the conversion of the rural desert landscape to one potentially filled with utility-grade solar projects and appurtenant facilities including transmission lines. Development of the Project would contribute to conversion of the landscape to one filled with more human-made energy infrastructure although the Project is largely located on previously disturbed industrial land. The Project, however, would also have positive effects on the growing renewable energy industry due to its energy storage capabilities (FERC FEIS p. 228).

The Project’s gen-tie line ROW would create an incremental increase of the visual effect caused by the existing Desert Sunlight 230-kV gen-tie line and existing solar energy generation facility (FERC FEIS pp. 221-227).

CHAPTER 7:
CONSULTATION AND COORDINATION

This is a Draft Plan Amendment/EA that will be available for public comment for a period of 30 days from the date of publication on the BLM's ePlanning website. After the comment period has closed, the BLM will compile public comments and address those comments that show substantive content. The BLM will then publish the Proposed Plan Amendment/EA and Draft Decision Record (DR) for the ROW. The Proposed Plan Amendment will have a 30-day protest period. Prior to the DR becoming final, all protests must be resolved. Instructions on how to file a protest will included in the publication of the Proposed Plan Amendment/EA.

Unlike the planning decision, implementation decisions included in this Draft PA/EA are not subject to protest under the BLM planning regulations, but are subject to an administrative review process, through appeals to the Office of Hearings and Appeals (OHA), Interior Board of Land Appeals (IBLA) pursuant to 43 CFR, Part 4, Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations once the BLM resolves the protests to land use planning decisions and issues DR.

7.1 FERC's Formal Section 7 Consultation

In 2005 FERC granted a preliminary permit to Eagle Crest. In a letter dated September 17, 2007, Eagle Crest requested from the USFWS, information about threatened and endangered species that may occur in the Project area. The USFWS responded in a letter on November 17, 2007, identifying desert tortoise and four sensitive species as potentially occurring in the Project area. In 2008, FERC designated Eagle Crest the non-federal representative for ESA Section 7 informal consultation with the USFWS and required Eagle Crest to prepare a draft Biological Assessment. Dialogue among Eagle Crest, FERC, and USFWS continued throughout 2008 to 2010. On December 23, 2010, FERC submitted a request for initiation of ESA Section 7 formal consultation and submitted their DEIS as their Biological Assessment. In a letter dated January 31, 2011, the USFWS requested additional information prior to initiating formal consultation. Eagle Crest submitted a draft revised Biological Assessment to FERC and USFWS on February 21, 2011.

Throughout this process, Eagle Crest was not granted site access to land owned by Kaiser Ventures LLC. As a result, Eagle Crest was unable to conduct surveys of the proposed Central Project Area during the FERC licensing process.

FERC submitted a request for initiation of ESA Section 7 formal consultation and a final Biological Assessment on April 21, 2011, which included responses to the issues articulated in the USFWS' January 2011 letter. The USFWS responded with a letter dated May 20, 2011, expressing concerns with the unusual circumstances of the Project proposal and the ability to issue a BO on the basis of the data provided. The USFWS proposed initiating early consultation, which would result in production of a preliminary BO. By regulation (50 CFR § 402.11(e)), the contents and conclusions of a preliminary BO are the same as for a BO issued subsequent to formal consultation, except that the incidental take statement provided with a preliminary BO does not exempt the take of listed wildlife.

The USFWS met with FERC on July 6 and 20, 2011, to discuss the early consultation approach outlined in the USFWS May 20, 2011, letter. Because FERC was in the final phase of the licensing process on the Project, FERC indicated its preference to receive a final BO with the accompanying incidental take statement, with the acknowledgement that once the Applicant has secured site access and conducted site-specific surveys for the various resources, re-initiation of formal consultation on desert tortoise may be necessary. Moreover, FERC agreed that it would include in any issued License language authorizing the reopening of the License to allow the integration of new information or changed circumstances. Pursuant to these conversations, in a September 1, 2011, letter, the USFWS initiated formal consultation, effective July 20, 2011.

On November 3, 2011, the USFWS requested a 30-day extension of the consultation deadline. Because the request was made within 45 days of the original due date, the Applicant's consent was required in addition to that of the federal action agency. Eagle Crest agreed to the extension in a November, 2011, letter. On November 9, 2011, the USFWS requested to extend this by an additional 30 days. Eagle Crest agreed to this in a letter on November 14, 2011. FERC did not respond to either extension request. On January 27, 2012, the USFWS requested an additional 45-day extension. In a January 31, 2012, letter, Eagle Crest concurred in the requested extension if the USFWS participated in a weekly conference call with Eagle Crest and their consultants, with which the USFWS agreed. On February 8, 2012, FERC issued a letter denying the USFWS' January 27, 2012, extension request, and requested that the USFWS issue the BO as soon as possible.

Although USFWS analyzed components of the Project across land managed by the BLM that require a ROW permit from the BLM, BLM was not a participating federal action agency in the 2011 to 2012 consultation. In 2016, the BLM requested an amendment to the FERC BO to include the BLM as a participating federal agency. Because the effects analysis remains the same, the BLM is requesting concurrence from the USFWS that the BO issued to FERC is adequate for the BLM purposes of ESA Section 7 consultation for the BLM ROW grant. FERC will issue a letter to FWS requesting re-initiation of consultation on the BO and include the BLM as a Cooperating Agency to the BO.

BLM utilized information contained in the BO as one basis for this EA. In addition, BLM, in an ESA Section 7 informal consultation process, consulted with USFWS on the requirements of the USFWS BO (2012) and conducted a joint site tour (with BLM, USFWS, and Eagle Crest representatives) of the Central Project Area on April 13, 2016. Supplemental biological surveys for desert tortoise, as required by USFWS in the BO, were conducted in the Central Project Area and Project linear corridors during May, 2016, confirming the desert tortoise conditions that had been described in the 2012 BO (Appendix B). BLM is continuing the ESA Section 7 consultation process as necessary.

7.2 National Historic Preservation Act, Section 106

Section 106 of the NHPA, as amended, 54 U.S.C. 306108, through its implementing regulations codified in "Protection of Historic Properties" (36 CFR Part 800), requires federal agencies to take into account the effects of proposed undertakings on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. It has been determined that the Project would constitute an "undertaking" as defined in 36 CFR Part 800.16(y) and involve the types of activities that could affect historic properties (36 CFR Part 800.3(a)). The BLM, as lead federal agency for the Project, has the statutory responsibility for compliance with the provisions of Section 106 of the NHPA (*see* 36 CFR Part 800.2(a)(2)). 36 CFR Part 800.1(a) defines the purpose and goal of the Section 106 process as follows:

The Section 106 process commences at the early stages of Project planning and seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess the undertaking's effects and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties.

The steps in the Section 106 process are briefly described below. Following the description of the steps is a summary presenting the BLM's compliance with the process to date, including Government-to-Government consultation with Tribes.

Step 1: Initiation of the Section 106 Process. The agency official shall determine whether the proposed federal action is an undertaking as defined in 36 CFR Part 800.16(y) and whether it has the potential to cause effects on historic properties. The agency official shall coordinate the steps of the Section 106 process with other concurrent reviews for the undertaking and plan for involving the public in the Section 106 process. The agency official shall also identify the appropriate SHPO, Tribes, and other consulting parties to be included in the consultation process.

Step 2: Identification and Evaluation of Historic Properties. The agency official shall determine and document the APE, as defined in 36 CFR Part 800.16(d), in consultation with the SHPO.

Historic properties within an undertakings APE are identified with input from the SHPO, Tribes, and other consulting parties. Historic properties include resources which are listed on or eligible for listing on the National Register of Historic Places (NRHP). In evaluating for NRHP eligibility, the agency official applies the criteria for eligibility for listing found at 36 CFR Part 60.4, in consultation with the SHPO (36 CFR Part 800.4).

In general, NRHP eligibility criteria include:

> *The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:*
>
> *a) are associated with events that have made a significant contribution to the broad patterns of our history; or*
>
> *b) are associated with the lives of persons significant in our past; or*
>
> *c) embody the distinctive characteristics or a type, period, method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
>
> *d) have yielded, or may be likely to yield, information important in prehistory or history.*

Step 3: Assessment of Effects. The agency official shall apply the criteria of adverse effects to historic properties identified within the APE (36 CFR 800.5 (a)) to determines whether or not the undertaking will affect historic properties. The agency official must assess whether such effects will be adverse by applying the criteria of adverse effect as outlined at 36 CFR Part 800.5(a)(1). An effect is deemed to be adverse when the undertaking may "*…alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association*" (36 CFR Part 800.5(a)(1)). The agency official must seek concurrence from the SHPO on agency findings of effect.

Step 4: Resolution of Adverse Effects. Through consultation with the SHPO, Tribes, other consulting parties, and the ACHP, if they elect to participate, the agency seeks to resolve adverse effects from a proposed undertaking through the development of a Memorandum of Agreement (MOA) (36 CFR 800.6) or Programmatic Agreement (36 CFR Part 800.14). The agency official must notify the ACHP of its adverse effect determination and its intent to resolve such adverse effects through the development of an MOA). The ACHP may elect to participate in the consultation to resolve the adverse effect.

The purpose of consultation at this phase of the process is to develop measures to resolve adverse effects to historic properties through avoidance, minimization, or mitigation. The resolution measures will be implemented through an Agreement. Agreements include the specific adverse effects resolution measures, address post-review discoveries and unanticipated effects, specify curation requirements, include reporting requirements, and provide other administrative provisions. Consulting parties, including the ACHP, SHPO, Tribes, the Applicant, and other parties as appropriate, are invited to participate in this consultation, the development of the Agreement, and are invited to sign the Agreement.

7.2.1 *Section 106 Consultation for Eagle Mountain Pumped Storage Project*

The BLM sent a letter on August 22, 2013 to the California SHPO to notify the SHPO of the Project and to initiate formal NHPA Section 106 consultation on the Project. The letter also requested that the SHPO combine consultation on the results of identification efforts with consultation on the determinations of eligibility and findings of effect. The letter then defined the APE and proposed identification efforts for the Project. The SHPO responded in a letter dated October 3, 2013, in agreement with the BLM-defined APE and identification efforts, and approval of BLM's request to combine consultation. On July 30, 2015, the BLM sent the BLM determinations of eligibility and findings of effect to the SHPO for review and concurrence. The BLM found that there would be no effect to historic properties from the Project. SHPO concurred with the BLM determinations and findings in a letter dated August 21, 2015. Because the BLM has found that there would be no effects to historic properties from the Project, no Agreement document is required for the Project.

The BLM sent a notification letter on July 30, 2015 to the ACHP regarding the Project. In this letter, the BLM invited the ACHP to participate in the Section 106 process in accordance with 36 CFR Part 800.2(b)(1). On August 18, 2015, the ACHP sent a letter to the BLM electing not to participate in the Section 106 consultation for the undertaking.

7.2.2 *Native American Tribal Consultation*

The BLM consults with federally-recognized Tribes in a Government-to-Government manner in accordance with several authorities, including Executive Order 13175, NEPA, NHPA, and the American Indian Religious Freedom Act. Under Section 106 of the NHPA, the BLM consults with Tribes as part of its responsibilities to identify, evaluate, and resolve adverse effects to historic properties from BLM undertakings. To date, BLM has identified and invited 15 Tribes to consult on the Project, including: the Aqua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, Cabazon Band of Mission Indians, Cahuilla Band of Mission Indians, Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Fort Yuma Quechan Tribe, Morongo Band of Mission Indians, Ramona Band of Mission Indians, San Manuel Band of Mission Indians, Soboba Band of Luiseno Indians, Torres-Martinez Desert Cahuilla Indians, and Twenty-Nine Palms Band of Mission Indians.

The BLM holds Section 106 consulting party meetings that offer a forum for providing Project updates, presenting the results of cultural resources studies, and openly discussing and sharing ideas about Project information and other Project concerns. In addition, individual Government-to-Government meetings with Tribes provide a separate forum for Tribes to share information and concerns openly and candidly in an individual context, apart from other consulting parties, and about other issues not necessarily related to the Section 106 process. To supplement these activities, additional good faith efforts are made by the BLM pursuant to Section 106, as part of the Government-to-Government consultation process. Information and concerns brought to light during the consultation process are summarized below.

The BLM invited Tribes to consult on the Project on a Government-to-Government basis by letter dated August 22, 2013. The letter included (1) information about the application submitted by Eagle Crest Energy for a ROW grant, (2) explained the FERC role in the overall Project, (3) further explained the BLM's role in the environmental review process for the ROW grant application, and (4) invited Tribes to consult in a Government-to-Government manner pursuant to Executive Order 13175, the Executive Memorandum of April 29, 1994, and other relevant authorities laws and regulations including Section 106 of the NHPA. The letters requested assistance in identifying any issues or concerns about the Project, including the identification of places of cultural or religious significance that might be affected by the Project. The letters also included an invitation to participate in a Section 106 consulting parties meeting to further discuss the Project.

The BLM held a Section 106 consulting parties meeting for all consulting parties, including the 15 invited Tribes, on September 26, 2013. The purpose of the meeting was to further discuss the Project and the BLM's role in the process. Representatives from the Colorado River Indian Tribes and the Fort Yuma Quechan Tribe attended the meeting.

In a response letter dated October 1, 2013, the Tribal Historic Preservation Officer of the Agua Caliente Band of Cahuilla Indians reported that the Project is within the Tribe's traditional use area and requested additional information, including maps and cultural reports. The Agua Caliente Band of Cahuilla Indians also requested a formal Government-to-Government meeting with the BLM, which was held on December 19, 2013.

The BLM sent follow up letters to the 15 identified Tribes on July 30, 2015, reiterating its invitation for them to enter into Government-to-Government consultation and to continue Section 106 consultation. This letter also: (1) provided an update on the environmental review process and cultural resources identification efforts; (2) made copies of the BLM Class III Archaeological report available; (3) summarized the BLM's determinations of eligibility for cultural resources within the APE; and (4) summarized the BLM's findings of effect for historic properties.

Responses were received from six Tribes, the Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, San Manuel Band of Mission Indians, Soboba Band of Luiseno Indians, and Twenty-Nine Palms Band of Mission Indians requesting additional information and copies of the Class III Archaeological report. Non-confidential copies of the report were sent to all six Tribes and the Agua Caliente Band of Cahuilla Indians.

As part of its consultation under Section 106 of the NHPA, the American Indian Religious Freedom Act, and Executive Order 13175, the BLM acknowledges the traditional importance and value of traditional cultural properties (TCPs) and other resources of cultural or religious significance to the Tribes as an integral part of Tribes' history and cultural continuity. To date, the BLM has not received information regarding the presence of TCPs or other resources of cultural or religious significance in the Project vicinity from the Tribes. Government-to-Government consultation with the Tribes is ongoing.

The HPMP will also provide for continuing tribal participation and the proper treatment of prehistoric human remains, should any be found during construction. The BLM may also require the development and implementation of a Long Term Management Plan for cultural resources. To encourage consistency in implementation, these conditions may be incorporated into any Historic Properties Treatment Plan, HPMP, or other cultural resources compliance plans developed by FERC in accordance with the Programmatic Agreement for their undertaking. The BLM must review any cultural resources compliance plans, and approve them for use on the BLM undertaking.

CHAPTER 8:
LIST OF PREPARERS

Table 8-1: List of Preparers.

EA Preparation		
CONTRIBUTOR	**ROLE**	**POSITION**
Greg Miller	NEPA and FLPMA	BLM Project Manager
Lynnette Elser	NEPA and FLPMA Review	Planning and Environmental Coordinator
Tiffany Arends	Cultural Resources	District Archaeologist
Mark Massar	Biological Resources	District Biologist
Noel Ludwig	Water Resources	District Hydrologist
Kevin Tanaka	Legal Review	Solicitor
EA Preparation		
CONTRIBUTOR	**ROLE**	**QUALIFICATIONS**
Stephanie Breeden	Writer and Editor	MS Environmental Science/ 10 years of experience
Ginger Gillin	Project Manager, Writer, and Editor	MS Wildlife Biology/ 32 years of experience

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APPENDIX A

DRECP Conservation Management Actions Crosswalk to Eagle Mountain FERC License Requirements

The FERC License requirements meet the DRECP goals and objectives for the CMAs listed in this Appendix. To avoid unnecessary duplication, the FERC License requirements will be implemented in lieu of the CMAs described in this Appendix.

Appendix B
Desert Tortoise 2016 Survey Report

Appendix C
Scoping Report

Appendix D
Tribal Consultation Record

Table D-1: Eagle Mountain Tribal Consultation Log.

Tribe	Chairperson/cc	Initial BLM Letter 8/22/2013	Follow-up Calls	Proposed Project Meeting 9/26/2013	BLM Findings/ Determination Letter 7/30/2015	Response Letters	Comments
Aqua Caliente Band of Cahuilla Indians	Mr. Jeff Grubbe, Chairman	Yes	9/24/2013; 4:05 PM	No	Yes		
	Ms. Pattie Garcia, THPO	Yes	9/24/2013; 2:50 PM	No	Yes	10/1/2013: request site records, cultural documentation, survey prior to development, a map, contact info for Arch, and formal G2G consultation	8/28/2015: Arch report sent
	Mr. Tom Davis, Chief Planning and Development Officer	Yes	No	No	Yes		12/19/2013: Government to Government Meeting
Augustine Band of Cahuilla Indians	Ms. Mary Ann Green, Chairwoman	Yes	9/24/2013; 4:08 PM	No	Yes		
	Mr. David Saldivar, Environmental Department	Yes	9/24/2013; 3:16 PM	No	Yes		
Cabazon Band of Mission Indians	Mr. Doug Welmas, Chairman	Yes	9/25/2013; 9:08 AM	No	Yes		
	Ms. Judy Stapp, Director of	Yes	9/24/2013; 3:28 PM	No	Yes		

Tribe	Chairperson/cc	Initial BLM Letter 8/22/2013	Follow-up Calls	Proposed Project Meeting 9/26/2013	BLM Findings/ Determination Letter 7/30/2015	Response Letters	Comments
	Cultural Affairs						
	Mr. Mike Jackson, Environmental Department	Yes	No	No	Yes		
Cahuilla Band of Mission Indians	Mr. Luther Salgado, Sr., Chairman	Yes	No	No	Yes		
	Mr. Luther Salgado, Jr., Environmental Director	Yes	9/24/2013; 3:30 PM	No	Yes		
Chemehuevi Indian Tribe	Mr. Edward Smith, Chairman	Yes	9/25/2013; 9:13 AM	No	Yes		
	Mr. Jay Cravath, Chemehuevi Cultural Center	Yes	9/24/2013; 3:30 PM	No	Yes		
Cocopah Indian Tribe	Ms. Sherry Cordova, Chairwoman	Yes	No	No	Yes		
	Ms. Jill McCormick, Cultural Resources Manager	Yes	9/24/2013; 3:35 PM	No	Yes	8/17/2015: email request for arch report	8/20/2015: Arch report sent
Colorado River Indian Tribes	Mr. Dennis Patch, Sr., Chairman	N/A	N/A	N/A	Yes	9/1/2015: requested additional info, EA, and arch report	New Chairman; 9/15/2015: Arch report sent
	Mr. Wayne Patch, Sr.,	Yes	9/25/2013; 9:32 AM	No	N/A		

Tribe	Chairperson/cc	Initial BLM Letter 8/22/2013	Follow-up Calls	Proposed Project Meeting 9/26/2013	BLM Findings/ Determination Letter 7/30/2015	Response Letters	Comments
	Chairman						
	Ms. Rebecca Loudbear, Attorney General	N/A	N/A	N/A	Yes		New designated representative; 9/15/2015: Arch report sent
	Ms. Nancy Jasculca, Deputy Attorney General	N/A	N/A	N/A	Yes		New designated representative; 9/15/2015: Arch report sent
	Ms. Wilene Fisher-Holt, Museum Director	Yes	9/24/2013; 3:38 PM	Yes. Attended with Ginger Scott and Wilfred Nabahe	N/A		No longer designated representative
	Mr. Doug Bonamici, Dept. of Justice	Yes	No	No	N/A		No longer designated representative
Fort Mojave Indian Tribe	Mr. Timothy Williams, Chairman	Yes	No	No	Yes	9/24/2015: email request for arch report	10/5/2015: Arch report sent, cc'd Chris Harper
	Ms. Linda Otero, AhaMakav Cultural Society	Yes	9/24/2013; 3:42 PM	No	Yes		
	Ms. Nora McDowell-Antone,	Yes	No	No	N/A		No longer employed with Tribe

Tribe	Chairperson/cc	Initial BLM Letter 8/22/2013	Follow-up Calls	Proposed Project Meeting 9/26/2013	BLM Findings/ Determination Letter 7/30/2015	Response Letters	Comments
	AhaMakav Cultural Society						
Fort Yuma Quechan Tribe	Mr. Keeny Escalanti, President	Yes	No	No	Yes		
	Ms. Arlene Kingery, Historic Preservation Officer	Yes	9/24/2013; 11:00 AM	Yes. Attended with Ernestine Noriega, Manfred Scott, and Lorey Cachora	Yes		
	Ms. Willa Scott	N/A	N/A	N/A	Yes		Letters to Tribes should be copied to Ms. Scott
Morongo Band of Mission Indians	Mr. Robert Martin, Chairman	Yes	9/25/2013; 9:18 AM	No	Yes		
	Mr. William Madrigal, Cultural Heritage Program Coordinator	Yes	9/24/2013; 3:48 PM	No	N/A		No longer employed with Tribe
Ramona Band of Mission Indians	Mr. Joseph Hamilton, Chairman	Yes	No	No	Yes		
	Mr. John Gomez, Jr., Cultural Resources	Yes	9/24/2013; 3:52 PM	No	Yes		
San Manuel Band	Ms. Lynn	N/A	N/A	N/A	Yes		New

Tribe	Chairperson/cc	Initial BLM Letter 8/22/2013	Follow-up Calls	Proposed Project Meeting 9/26/2013	BLM Findings/ Determination Letter 7/30/2015	Response Letters	Comments
of Mission Indians	Valbuena, Chairwoman						Chairwoman
	Ms. Carla Rodriguez, Chairwoman	Yes	9/25/2013; 9:21 AM	No	N/A		
	Ms. Ann Brierty, Cultural Resources Coordinator	Yes	9/24/2013; 3:54 PM	No	Yes		
	Mr. Daniel McCarthy, Cultural Resources Mgmt Dept	Yes	No	No	Yes	8/5/2015: email request for arch report	8/10/2015: Arch report sent
Soboba Band of Luiseno Indians	Ms. Rosemary Morillo, Chairwoman	Yes	9/25/2013; 9:24 AM	No	Yes		
	Mr. Joe Ontiveros, Cultural Resources Dept.	Yes	9/24/2013; 3:57 PM	No	Yes	8/28/2015: arch report and G2G meeting request	9/15/2015: Arch report sent
Torres-Martinez Desert Cahuilla Indians	Ms. Mary Resvaloso, Chairwoman	Yes	9/25/2013; 9:26 AM	No	Yes		
	Mr. Mathew Krystall, Tribal Resources Manager	Yes	9/24/2013; 10:52 AM	No	N/A		No longer employed with Tribe
Twenty-Nine Palms Band of Mission Indians	Mr. Darrell Mike, Chairman	Yes	9/25/2013; 9:28 AM	No	Yes		

Tribe	Chairperson/cc	Initial BLM Letter 8/22/2013	Follow-up Calls	Proposed Project Meeting 9/26/2013	BLM Findings/ Determination Letter 7/30/2015	Response Letters	Comments
	Mr. Anthony Madrigal, Jr., THPO	Yes	9/24/2013; 4:00 PM	No	Yes	8/8/2015: arch report request	8/10/2015: Arch report sent