

FINAL ENVIRONMENTAL IMPACT STATEMENT

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Licensing
Washington, DC

Eagle Mountain Pumped Storage Hydroelectric Project FERC Project No. 13123-002—California

1.0 INTRODUCTION

1.1 APPLICATION

On June 22, 2009, Eagle Crest Energy Company (Eagle Crest or applicant) filed an application for an original license with the Federal Energy Regulatory Commission (Commission or FERC). The proposed 1,300-megawatt (MW) Eagle Mountain Pumped Storage Hydroelectric Project (Eagle Mountain Project, or project) would be located in two largely inactive mining pits in the Eagle Mountain mine in Riverside County, California, near the town of Desert Center, California (figure 1). Under current land ownership, the proposed project would occupy 675.63 acres of federal lands managed by the U.S. Department of the Interior, Bureau of Land Management (BLM), 467 acres administered by the California State Lands Commission, and about 1,545.63 acres of private lands owned by Kaiser Eagle Mountain, LLC (Kaiser).¹² The proposed project would generate an average of 4,308 gigawatt-hours (GWh) of energy annually. Eagle Crest proposes to construct and operate this pumped-storage project to provide system peaking capacity and transmission regulating benefits to regional electric utilities.

¹² Portions of the lands that would be occupied by the project are part of a land exchange that occurred in 1999. This land exchange was an exchange of state-owned land for privately owned land or for other publicly owned land. As part of a nearby landfill proposal, BLM exchanged about 3,500 acres of public land within the area for off-site private lands to support the proposed landfill project in the mine area. The land exchange is the subject of past and possible future litigation and further review by Interior. If the land exchange is overturned, the project boundary for the proposed project would include nearly 1,059 acres of federal land managed by BLM. However, if the land exchange between BLM and Kaiser is upheld, the amount of federal lands affected by the proposed project would be 675.63 acres.

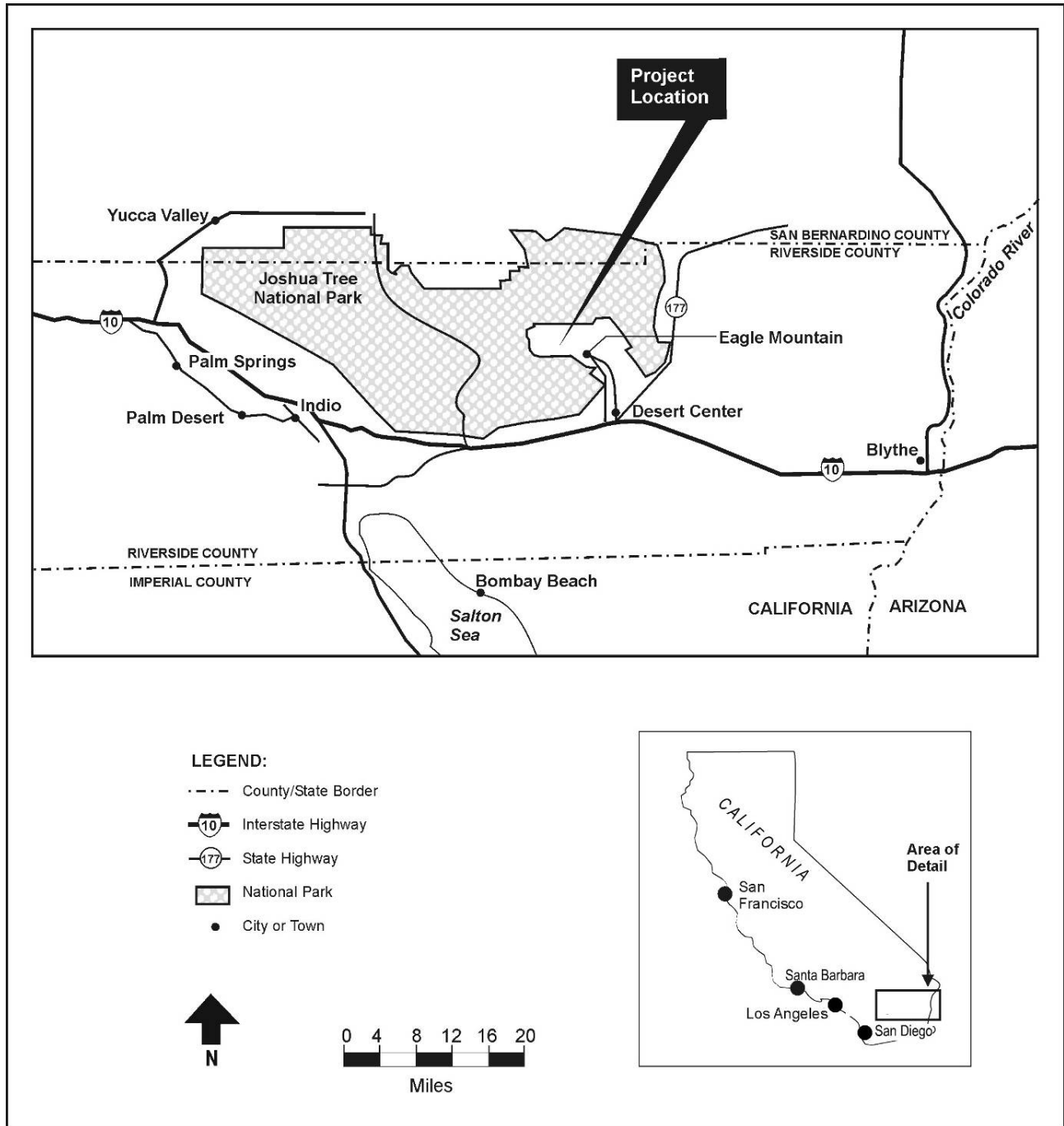


Figure 1. Location of Eagle Mountain Pumped Storage Hydroelectric Project (Source: Eagle Crest, 2009a, as modified by staff).

1.2 PURPOSE OF ACTION AND NEED FOR POWER

1.2.1 Purpose of Action

The Commission must decide whether to issue a license to Eagle Crest for the Eagle Mountain Project and what conditions should be placed on any license issued. In deciding whether to issue a license for a hydroelectric project, the Commission must determine that the project will be best adapted to a comprehensive plan for improving or developing a waterway. In addition to the power and developmental purposes for which licenses are issued (such as flood control, irrigation, or water supply), the Commission must give equal consideration to: (1) energy conservation; (2) the protection of, mitigation of damage to, and enhancement of fish and wildlife resources; (3) the protection of recreational opportunities; and (4) the preservation of other aspects of environmental quality.

Issuing an original license for the Eagle Mountain Project would allow Eagle Crest to generate electricity for the term of that license, making electrical power from a renewable resource available to its customers.

This final environmental impact statement (final EIS) assesses the effects associated with the construction and operation of the project and alternatives to the proposed project. It also includes recommendations to the Commission on whether to issue an original license, and if so, includes the recommended terms and conditions to become a part of any license issued.

In this final EIS, we assess the environmental and economic effects of constructing and operating the project: (1) as proposed by the applicant, and (2) with staff-recommended measures. We also consider the effects of the no-action alternative. Important issues addressed are the effects of the proposed project's construction and operation on groundwater, water quality, terrestrial species, and recreation activities.

1.2.2 Need for Power

The North American Electric Reliability Corporation (NERC) annually forecasts electrical supply and demand nationally and regionally for a 10-year period. The Eagle Mountain Project would be located in the California-South subregion of the Western Electricity Coordinating Council region of NERC. According to NERC's most recent 2010 forecast, summer peak demands and annual energy requirements for the United States' portion of the California-South subregion are both projected to grow by 1.2 percent from 2010 through 2019 (NERC, 2010). NERC projects summer and winter resource capacity margins (generating capacity in excess of demand) will not drop below target reserve levels during the 2010–2019 period.

The 28,095 MW of future, planned generating resources that are projected to be constructed during the 2010–2019 period consist of 7,958 MW of conventional (fossil-fueled); 347 MW of hydro; 9,860 MW of wind; 9,881 MW of solar; and 49 MW of biomass facilities.

California has enacted renewable resource goals to increase the percentage of renewable resource generation to 33 percent by 2020. The projected wind, solar, biomass, and small (under 30 MW) hydroelectric facilities would help to achieve these goals. However, the variable output of wind and solar facilities can create an imbalance in the stability of the electric grid if sufficient facilities are not available to balance the system. The two primary alternatives being considered in the region to address these imbalances are pumped storage facilities and gas-fired combustion turbines. The installation of pumped storage facilities for the purposes of system balancing would be supportive of California's renewable resource goals because they do not require the burning of fossil fuels. While pumped storage facilities greater than 30 MW, such as the Eagle Mountain Project, are not directly eligible under California's Renewable Portfolio Standards (RPS) as generating facilities, these facilities can qualify under the RPS if the energy used to pump the water into the storage reservoir is provided by an eligible generating facility.

Ancillary services would include spinning reserve, non-spinning reserve, frequency regulation, voltage support and regulation, load following capability, peak shaving and other services. The power benefits of pumped storage projects are discussed further in section 4.1, *Power and Developmental Benefits of the Project*.

The Eagle Mountain Project, as proposed, includes a transmission line extending from the proposed Eagle Mountain switchyard to the proposed collector substation located north of Interstate 10 near Desert Center. The collector substation would be

interconnected with Southern California Edison's (SCE) proposed Devers-Palo Verde No. 2 transmission line.¹³

We conclude that the Eagle Mountain Project would help provide energy, capacity, and ancillary services to the California-South subregion in both the short and long term, could provide benefits that support the integration of new renewable resources facilities to meet California's RPS goals, and could be an eligible RPS facility if the pumping energy is derived from eligible renewable power generation.

1.3 STATUTORY AND REGULATORY REQUIREMENTS

A license for the Eagle Mountain Project is subject to numerous requirements under the Federal Power Act (FPA) and other applicable statutes. We summarize the major regulatory requirements in table 1 and describe them below.

¹³ SCE proposes to construct this transmission line to help to bring future renewable and non-renewable generation from areas in eastern Riverside County to the electric grid. As such, the Devers-Palo Verde No. 2 transmission line would assist California in meeting its aggressive goal of 33 percent of generation by renewable sources by 2020. Although the original Arizona portion of the Devers-Palo Verde No. 2 line was not approved and is no longer planned, SCE is actively pursuing the California portion of the proposed line. The transmission line would consist of: (1) a new 500/220-kilovolt (kV) Colorado River substation near Blythe, California; (2) a new 111-mile 500-kV transmission line, paralleling the existing Devers-Palo Verde No. 1 transmission line between SCE's Devers substation near Palm Springs and the new Colorado River substation; and (3) a new 42-mile, 500-kV transmission line, also paralleling the existing Devers-Palo Verde No. 1 transmission line between the Devers substation and SCE's Valley substation in Menifee, California.

The Devers-Palo Verde No. 2 transmission line was approved by the California Public Utilities Commission (CPUC) in November 2009. SCE applied to the CPUC for approval to expand the Colorado River substation in November 2010. SCE started construction of the Red Bluff substation in September 2011 and expects to start construction of the transmission line in January 2012. SCE expects to have the facilities complete and in service by the third quarter of 2013.

Table 1. Major statutory and regulatory requirements for the Eagle Mountain Hydroelectric Project (Source: staff).

Requirement	Agency	Status
Section 18 of the FPA (fishway prescriptions)	U.S. Department of the Interior, Fish and Wildlife Service (FWS)	No section 18 prescriptions were filed.
Section 4(e) of the FPA (land management conditions)	BLM	No section 4(e) conditions were filed.
Section 10(j) of the FPA	FWS, California Department of Fish and Game (California DFG)	No 10(j) recommendations were filed.
Clean Water Act—water quality certification	State Water Resources Control Board (State Water Board)	Eagle Crest filed its application on September 22, 2009; it was received by the State Water Board on September 24, 2009. On October 8, 2009, the State Water Board determined that the application met the requirements for a complete application. However, on September 15, 2010, Eagle Crest simultaneously withdrew and resubmitted its application. Similarly on September 6, 2011, Eagle Crest simultaneously withdrew and resubmitted its application. The Water Board's certification is pending.

Requirement	Agency	Status
Endangered Species Act Consultation	FWS	The Commission requested section 7 consultation with FWS on April 21, 2011. However based on a letter from the FWS dated September 1, 2011, formal consultation was initiated on July 20, 2011, and the Biological Opinion is due by January 31, 2012.
Coastal Zone Management Act Consistency	California Coastal Commission	Eagle Crest filed consistency certification on March 26, 2009; in a letter dated April 28, 2009, the California Coastal Commission agreed that the project is outside of, and would not affect, a California coastal zone.
National Historic Preservation Act	California State Historic Preservation Officer (California SHPO)	Eagle Crest consulted with the California SHPO and prepared a Historic Properties Management Plan (HPMP) to address potential adverse effects on historic properties associated with the project.

1.3.1 Federal Power Act

1.3.1.1 Section 18 Fishway Prescriptions

Section 18 of the FPA states that the Commission is to require construction, operation, and maintenance by a licensee of such fishways as may be prescribed by the Secretary of Commerce or the Secretary of the U.S. Department of the Interior (Interior). Neither the Secretary of Commerce nor the Secretary of the Interior filed section 18 prescriptions or requested that a reservation of authority to prescribe fishways under section 18 be included in any license issued for the project.

1.3.1.2 Section 4(e) Conditions

Section 4(e) of the FPA provides that any license issued by the Commission for a project within a federal reservation will be subject to and contain such conditions as the Secretary of the responsible federal land management agency deems necessary for the

adequate protection and use of the reservation. BLM, which manages 1,059.26 acres of land that would be occupied by the project, did not file section 4(e) conditions.

1.3.1.3 Section 10(j) Recommendations

Under section 10(j) of the FPA, each hydroelectric license issued by the Commission must include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, or enhancement of fish and wildlife resources affected by the project. The Commission is required to include these conditions unless it determines that they are inconsistent with the purposes and requirements of the FPA or other applicable law. Before rejecting or modifying an agency recommendation, the Commission is required to attempt to resolve any such inconsistency with the agency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agency.

No 10(j) recommendations were filed.

1.3.2 Clean Water Act

1.3.2.1 Water Quality Certification

Under section 401 of the Clean Water Act (CWA), a license applicant must obtain certification from the appropriate state pollution control agency verifying compliance with the CWA. On September 26, 2008, Eagle Crest applied to the State Water Board for 401 water quality certification for the Eagle Mountain Project. The State Water Board received this request on September 26, 2008. Subsequently, on September 22, 2009, Eagle Crest simultaneously withdrew and resubmitted its request, which was received by the State Water Board on September 24, 2009. However, on September 15, 2010, Eagle Crest simultaneously withdrew and resubmitted its request. Similarly on September 6, 2011 Eagle Crest simultaneously withdrew and resubmitted its request. On September 7, 2011, the State Water Board determined that the application was acceptable for processing. The water quality certification is due by September 6, 2012.

1.3.2.2 California Environmental Quality Act¹⁴

The State Water Board prepared a draft environmental impact report (EIR), dated July 2010, to provide the public, governmental and/or responsible agencies, and other interested parties with information about the environmental effects of the proposed Eagle Mountain Project. The proposed action of developing and operating the pumped storage hydroelectric facility requires evaluation of the project under the California Environmental Quality Act (CEQA) because it requires discretionary approval by the

¹⁴ Information for this section is from the Eagle Mountain Pumped Storage Project Draft EIR (State Water Board, 2010).

State Water Board (State CEQA Guidelines §15357). The State Water Board is the state of California's lead agency for implementing CEQA (State CEQA Guidelines §15367).

State CEQA Guidelines §15126.6 require that an EIR describe and evaluate the comparative merits of a range of alternatives to the project that could feasibly attain most of the objectives of the project but would avoid or substantially lessen significant effects. An EIR is not required to consider alternatives that are infeasible; however, State CEQA Guidelines §15126.6(b) specify that the EIR evaluate alternatives capable of avoiding or substantially lessening significant effects of the project, even if these alternatives could impede to some degree attainment of project objectives, or impose additional costs.

The alternatives evaluated in the draft EIR were identified based on a range of alternatives that could feasibly accomplish most of the basic project objectives and could avoid or substantially lessen one or more significant effects (State CEQA Guidelines §15126.6(c)). Alternatives analyzed in the draft EIR included the proposed project, a no project alternative, a longer construction period to limit the daily emissions of nitrogen oxide, and different transmission line routes and substation locations.

The State Water Board presented an alternative for the transmission route and substation location that is based on its analysis in the draft EIR, as shown in figure 2. The State Water Board's preferred substation location would be immediately south of Interstate 10 and about 6 miles east of the applicant's proposed substation and would be co-located with SCE's planned Red Bluff substation. It would diverge from the applicant's proposed transmission line after crossing the Metropolitan Water District of Southern California's (Metropolitan Water District's) Colorado River Aqueduct (Colorado River Aqueduct) and would then parallel the existing 160-kilovolt (kV) SCE transmission line for about 10.5 miles going southeast to a point just north of the proposed substation. The State Water Board's preferred alternative transmission line route then would travel south about 2 miles to its substation. The State Water Board draft EIR states that this route was chosen because it would reduce biological, land use, and aesthetics impacts, although short-term air quality impacts and visual impacts would be significant and unavoidable. Our analysis of the State Water Board's preferred alternative transmission line route and substation location is presented in section 3.3, *Proposed Action and Action Alternatives*, and our recommendations are presented in section 5.0, *Conclusions and Recommendations*.

1.3.3 Endangered Species Act

Section 7 of the Endangered Species Act (ESA) requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species. Two federally listed species are known to occur in the Eagle Mountain Project vicinity: the Coachella Valley milkvetch and desert tortoise. There is also critical habitat for the desert tortoise in the proposed project boundary. Our analyses

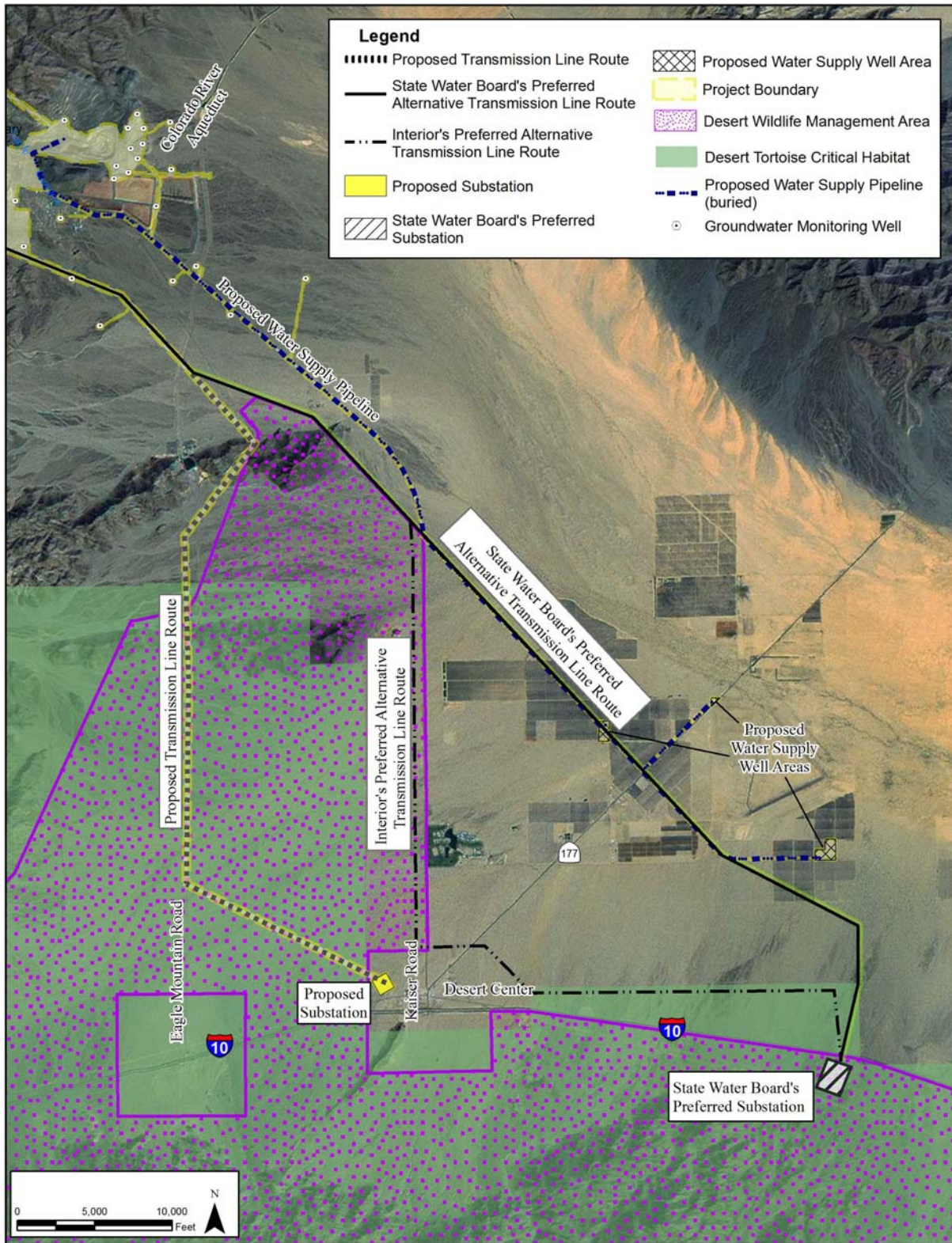


Figure 2. Transmission line routes (Source: Eagle Crest, 2010a, and ESRI, 2010, as modified by staff).

of project effects on threatened and endangered species are presented in section 3.3.4, *Threatened and Endangered Species*, and our recommendations in section 5.2, *Comprehensive Development and Recommended Alternative*.

Eagle Crest's Worker Environmental Awareness Program (WEAP) and Desert Tortoise Clearance and Relocation/Translocation Plan would protect desert tortoise from construction-related effects, and the applicant-proposed compensation would mitigate the reduction in desert tortoise habitat. The staff-recommended Desert Tortoise Predator Control Plan would also help minimize any potential effects associated with increased predation risk. However, implementation of these plans would require transporting tortoises, which causes increased stress and could result in mortality. Additionally, construction of the staff-recommended transmission line route would permanently reduce available habitat within designated critical habitat for desert tortoise. Therefore, we conclude that licensing of the Eagle Mountain Project, as proposed with staff-recommended measures, may adversely affect the desert tortoise and modify critical habitat for this species. We also conclude the project would not affect Coachella Valley milkvetch because this species does not occur in areas of potential project effects.

On December 23, 2010, we issued a Biological Assessment in the form of our draft EIS and requested formal consultation with FWS. On January 31, 2011, FWS submitted a request for additional information before initiating formal consultation. In response to the additional information request (AIR), we issued a final Biological Assessment on April 21, 2011. With the issuance of the final Biological Assessment, we initiated formal consultation and requested the filing of the Biological Opinion within 135 days (by September 3, 2011).

On May 23, 2011, FWS responded by letter indicating that it had concerns relative to the lack of site access and site control of the central project area and that due to these circumstances, FWS recommended proceeding in accordance with the early consultation provisions under section 7(a)(3) of the ESA. In response, we met with the FWS and Eagle Crest on July 6 and July 20, 2011, to further discuss FWS' proposed early consultation approach and to discuss our concerns with the proposed approach. As a result of the meetings, FWS withdrew its proposal to proceed in accordance with the early consultation provisions under section 7(a)(3) and agreed to initiate formal consultation. On September 9, 2011, FWS filed a letter indicating that it initiated formal consultation on July 20, 2011, stating it would issue the final Biological Opinion by December 2, 2011. However, on November 9, 2011, FWS requested a 30-day extension, moving the deadline to January 3, 2012. Eagle Crest agreed to this request on November 9, 2011. Subsequently, FWS requested an additional extension, noting that it plans to

issue the Biological Opinion by January 31, 2012. Eagle Crest agreed to the second extension on November 15, 2011. Currently, the Biological Opinion is past due.¹⁵

1.3.4 Coastal Zone Management Act

Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA), 16 U.S.C. § 1456(3)(A), the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within 180 days of its receipt of the applicant's certification.

The project is not located within the state-designated Coastal Management Zone, and the project would not affect California's coastal resources. Therefore, the project is not subject to the California coastal zone program review, and no consistency certification is needed for the action. By letter dated April 28, 2009, the California Coastal Commission concurred with this conclusion.¹⁶

1.3.5 National Historic Preservation Act

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires that every federal agency "take into account" how each of its undertakings could affect historic properties. Historic properties are districts, sites, buildings, structures, traditional cultural properties (TCPs), and objects significant in American history, architecture, engineering, and culture that are eligible for inclusion in the National Register of Historic Places (National Register).

To meet the requirements of section 106, the Commission executed a Programmatic Agreement (PA) with the California SHPO on September 27, 2011, for the protection of historic properties from the effects of the construction, operation, and maintenance of the Eagle Mountain Project. The terms of the PA ensure that Eagle Crest addresses and treats all historic properties identified within the project's area of potential effects (APE) through the implementation of an HPMP filed March 4, 2011, with staff modifications. Compliance with the executed PA would be a condition of any order issuing a license.

¹⁵ While it is the FWS' position that formal consultation was initiated on July 20, 2011, it is Commission staff's assertion that formal consultation was initiated with the issuance of the final Biological Assessment on April 21, 2011, which provided the additional information requested by the FWS on January 31, 2011. As such, the Biological Opinion was due on September 3, 2011.

¹⁶ This record of the correspondence is from the license application, exhibit E, pages 1–8.

1.4 PUBLIC REVIEW AND CONSULTATION

The Commission's regulations (18 CFR, sections 4.38) require that applicants consult with appropriate resource agencies, tribes, and other entities before filing an application for a license. This consultation is the first step in complying with the Fish and Wildlife Coordination Act, the ESA, the NHPA, and other federal statutes. Pre-filing consultation must be complete and documented according to the Commission's regulations.

1.4.1 Scoping

Before preparing the draft EIS, we conducted scoping to determine what issues and alternatives should be addressed. A scoping document (SD1) was distributed to interested agencies and others on December 17, 2008. It was noticed 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, and these are part of the Commission's public record for the project. In addition to comments provided at the scoping meetings, the following entities provided written comments on SD1:

<u>Commenting Entity</u>	<u>Date Filed</u>
Metropolitan Water District	February 10, 2009
Kaiser Ventures, LLC	February 13, 2009
Mine Reclamation, LLC	February 13, 2009
Citizens for the Chuckwalla Valley ¹⁷	February 17, 2009
County Sanitation District of Los Angeles County (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 June 5, 2009.

¹⁷ On October 26, 2011, the Citizens for the Chuckwalla Valley filed a letter with the Commission stating that it had been reorganized with a new name Desert Protection Society.

1.4.2 Interventions

On January 14, 2010, the Commission issued a notice that Eagle Crest had filed an application to license the Eagle Mountain Project. This notice set March 15, 2010, as the deadline for filing protests and motions to intervene. In addition, the notice of availability of the draft EIS filed on December 23, 2011, invited comments and intervention. In response to these notices, the following entities filed motions to intervene:

<u>Intervenor</u>	<u>Date Filed</u>
Citizens for the Chuckwalla Valley	March 1, 2010
State Water Board	March 2, 2010
Metropolitan Water District ¹⁸	March 10, 2010
Kaiser Eagle Mountain LLC ¹⁸	March 10, 2010
Mine Reclamation, LLC ¹⁸	March 10, 2010
County Sanitation District ¹⁸	March 12, 2010
Phillip R. Hu ¹⁸	February 11, 2011
Interior ¹⁸	February 25, 2011

1.4.3 Comments on the License Application

A notice requesting conditions and recommendations was issued on January 11, 2010, and an errata notice¹⁹ was issued on January 14, 2010. The following entities commented:

<u>Commenting Agency and Other Entity</u>	<u>Date Filed</u>
Brendan Hughes	March 1, 2010
Kaiser Eagle Mountain, LLC	March 10, 2010
Mine Reclamation, LLC	March 10, 2010
National Parks Conservation Association	March 11, 2010
Joshua Tree National Park	March 11, 2010

¹⁸ Intervention in opposition.

¹⁹ The errata corrected the deadline for filing motions to intervene and protests; comments, recommendations, terms and conditions, prescriptions; and reply comments. It also corrected the paragraph about who may submit comments, a protest, or a motion to intervene and provided a procedural schedule.

<u>Commenting Agency and Other Entity</u>	<u>Date Filed</u>
Metropolitan Water District	March 11, 2010
Interior	March 12, 2010
Johnney Coon	March 12, 2010
County Sanitation District	March 12 and 18, 2010
Timothy Anderson	March 13, 2010
BLM	August 23, 2010

Eagle Mountain filed reply comments on April 23, 2010.

1.4.4 Comments on the Draft Environmental Impact Statement

On December 23, 2011, we issued a draft EIS for the proposed Eagle Mountain Project. Comments on the draft EIS were due by February 28, 2011. In addition, we conducted two public meetings on February 3, 2011, in Palm Desert, California. In addition to comments received at the public meetings, written comments on the draft EIS were filed by the following entities:

<u>Commenting Entity</u>	<u>Date Filed</u>
State Water Board	March 1, 2011
Center for Biological Diversity	March 1, 2011
U.S. Environmental Protection Agency Region 9 (EPA)	March 1, 2011
Johnney Coon	March 1, 2011
San Geronio Chapter of the Sierra Club	March 1, 2011
Metropolitan Water District	March 1, 2011
Philip R. Hu	February 8 and 15, 2011
JoAnn and Warren Dean	February 14, 2011
Advisory Council on Historic Preservation (Advisory Council)	February 17, 2011
Brendan Hughes	February 23, 2011
Eagle Crest Energy Company (Eagle Crest)	February 28, 2011
Kaiser Eagle Mountain, LLC and Mine Reclamation, LLC	February 28, 2011

<u>Commenting Entity</u>	<u>Date Filed</u>
Citizens for Chuckwalla Valley	February 28, 2011
U.S. Department of the Interior, National Park Service (Park Service)	February 28, 2011
County Sanitation District	February 28, 2011

Appendix A summarizes all comments received, includes our responses to those comments, and indicates where we made modifications to the EIS.