Joshua Tree National Park

U.S. Department of the Interior
National Park Service

Eagle Mountain Boundary Study Including Possible Land Withdrawal Environmental Assessment - Final

December 2016

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Note to Readers:

This document includes corrections made to the March 2016 document that was released for public review.

Since this document was first published the Bureau of Land Management (BLM) has completed the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management (September 2016).

- In completing its Record of Decision in September 2016, the BLM has adopted the designations noted as "proposed" in this document. All references to proposed DRECP land use plan amendment designations should be considered final.
- Lands denoted as "unallocated" BLM lands are denoted as "general public lands" in the final documents.
- Any changes made to the Record of Decision do not change level of effect of impacts disclosed in the environmental consequences.

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SUMMARY

The National Park Service (NPS) in cooperation with the Bureau of Land Management (BLM) has prepared the *Eagle Mountain Boundary Study Including Possible Land Withdrawal Environmental Assessment* (boundary study/EA) for an area within the Eagle Mountains, located in Riverside County, California. The study examines approximately 31,500 acres of land on the eastern border of Joshua Tree National Park, west of the Colorado River Aqueduct.

The purpose of the study and environmental assessment is to consider whether to expand Joshua Tree National Park to include additional lands in the Eagle Mountain area, and to develop alternatives for protecting cultural, natural, and scenic resources related to the purpose of the national park. This document also evaluates the potential effects of a withdrawal and transfer of jurisdiction of federal lands in the area from the BLM to the NPS to protect resources related to the purpose of Joshua Tree National Park.

Through evaluation of NPS criteria for boundary adjustments, the study finds that lands in the Eagle Mountain area are suitable for inclusion in Joshua Tree National Park, containing resource values and visitor opportunities that would help support the overall purpose of the park as directed by Congress. Including this area in the park could also improve park operational efficiency by providing access to one of the most remote areas of the park. Over ~~25~~20,000 acres of land would be feasible for NPS to administer~~ at this time~~, while other lands may become feasible in the future when current and proposed uses cease.

This Environmental Assessment (EA) has been prepared in compliance with the National Environmental Policy Act. Public review of the document took place in Spring 2016.

Selected Alternative

As fully described in the Finding of No Significant Impact in Appendix F, the Selected Alternative, a modification of Alternative C, recommends an approximately 20,005 acre-addition to Joshua Tree National Park. This would include approximately 17,670 acres of federally owned and managed lands that would be considered for administrative transfer to the National Park Service. Also recommended would be approximately 2,000 acres of privately owned lands, and 335 acres of State School Lands that have been determined feasible for addition to Joshua Tree National Park. Lands recommended for inclusion in the park boundary do not include those lands and rights of way associated with the Federal Energy Regulatory Commission license withdrawal area for the Eagle Mountain Pumped Storage Hydroelectric Project. The selected alternative, if fully implemented, could allow for greater protection of existing habitat, restoration opportunities, and landscape connectivity for wildlife such as bighorn sheep, as well as new visitor opportunities.

Private land could be acquired when available, through donation or purchase by a third party from a willing seller (in fee) and donated to NPS. Eagle Crest Energy Company, which owns a substantial interest in such lands, has indicated that it would consider donating lands not needed for the pumped storage hydroelectric project to the National Park Service following construction of the project and at such time that the outstanding promissory note for the private parcels is secured. State School Lands could be acquired through a land exchange with the California State Lands Commission. The California State Land Commission would consider a land exchange, when and if the surrounding private lands and mineral interests are transferred to the NPS for management.

The long-term vision of the National Park Service would be to include in the park boundary all of the lands determined suitable for

addition to Joshua Tree National Park, if and when such lands would become available to the National Park Service. This would include an additional ~8,600 acres associated with the Eagle Mountain Mine and Townsite, if existing uses of those lands change and subsequently become available to the NPS through willing sellers. Lands associated with the right of way for the pumped storage hydroelectric project could be considered for transfer to the NPS at a later time, if not needed for the operation of the facility. Additional feasibility analysis and environmental site assessments for the remaining lands may be necessary at such time that they become available.

Alternatives Evaluated

The NPS ~~evaluates~~ evaluated four alternatives in this EA, including:

Alternative A: Continue Current Management (No Action) assumes the Eagle Mountain area would continue to be owned and managed by current public and private entities. No change would be made to the boundary of Joshua Tree National Park.

Alternative B: Federal Agency-to-Agency Land Transfer (~22,135 acre boundary addition) proposes a transfer of federal lands administered by the BLM to the NPS for administration as part of Joshua Tree National Park.

Alternative C: Agency Transfer with Enhanced Habitat Connectivity and Recreation – NPS Preferred Alternative and Proposed Action (~25,070 acre addition) proposes a transfer of federal lands administered by the BLM (~22,515 acres) to the NPS for administration as part of Joshua Tree National Park. An additional ~2,555 acres of private and state lands are proposed for addition to the park boundary to further protect wildlife habitat and provide new public enjoyment opportunities.

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Alternative D: Restore 1936 Boundary to Provide Diverse Visitor and Resource Protection Opportunities – Phased Approach (~28,600 acre addition) proposes a boundary addition that represents a long-term vision for comprehensive protection of the area's resources. Lands would be considered for NPS management if and when they would become available. Alternative D includes a transfer of BLM-administered lands (22,515 acres) to the NPS for administration as part of Joshua Tree National Park. Other lands could be acquired for park use overtime if and when they become available from willing sellers. Some lands, such as those associated with the proposed Eagle Mountain Pumped Storage Hydroelectric Project, may not be available for decades.

The environmental consequences of the alternatives are examined in *Chapter 5*. Results of public involvement, consultation, and coordination conducted during the planning process are included in *Chapter 1: Purpose and Need (Study Process)* and *Chapter 6: Consultation and Coordination*. Results of the public involvement process for the public review draft published in March 2016 are included in the *Finding of No Significant Impact (see Appendix F).*

Next Steps

Implementation of the selected alternative would require additional agency or Congressional action and may occur in stages.

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ACRONYMS

ACEC – Area of Critical Environmental Concern

ACHP – Advisory Council on Historic Preservation

CCD - Census County Divisions

CEQ – Council of Environmental Equality

CFR – Code of Federal Regulations

BLM - Bureau of Land Management

CDCA - California Desert Conservation Area

CMA – Conservation Management Actions

CSLC – California State Lands Commission

DFA – Development Focus Area

DRECP – Desert Renewable Energy Conservation Plan

DWMA – Desert Wildlife Management Areas

EA – Environmental Assessment

EIS – Environmental Impact Statement

EMMR – Eagle Mountain Mining and Railroad Company, LLC

FEIS – Final Environmental Impact Statement

FERC – Federal Energy Regulatory Commission

FLPMA - Federal Land Policy and Management Act

FPA – Federal Power Act

FTE - Full time equivalent staff

GIS - Geographic information system

GMP - - General Management Plan

KEM – Kaiser Eagle Mountain, LLC

KSC – Kaiser Steel Corporation

IMP - Interim Management Plan for the Kaiser Mountain Eagle Mountain Mine

LUPA – Land Use Plan Amendment

MWD – Metropolitan Water District of Southern California

NCL - National Conservation Lands

NECO Plan - Northern and Eastern Colorado Desert Coordinated Management Plan

NEPA – National Environmental Policy Act

NLCS – National Landscape Conservation System

NPS – National Park Service

NRHP - National Register of Historic Places

ROW – Right-of-way

OHV - Off-highway vehicle

PEPC - - NPS Planning, Environment and Public Comment website

SCE - Southern California Edison

SEZ - Solar energy zone

SMARA - Surface Mining and Reclamation Act

SHPO – State Historic Preservation Officer

USFWS – United States Fish and Wildlife Service

USGS - U.S. Geological Survey

WHMA - Wildlife Habitat Management Areas

CHAPTER 1: PURPOSE AND NEED

Introduction

The National Park Service (NPS) in cooperation with the Bureau of Land Management (BLM) has prepared this boundary study of the Eagle Mountain area in Riverside County, California to consider whether to expand the Joshua Tree National Park boundary to include additional properties, and to develop alternatives for protecting cultural, natural, and scenic resources related to the purpose of the national park. This document also evaluates the potential effects of a possible withdrawal of public lands from settlement, sale, location, and entry under the public land laws, including the United States mining laws, and leasing or other disposition under the mineral and geothermal leasing laws. The purpose of the possible withdrawal would be to transfer jurisdiction over certain public lands from the BLM to the NPS to protect resources related to the purpose of Joshua Tree National Park.

The study examines approximately 31,500 acres of land on the eastern side of Joshua Tree National Park bordered on the east by the Colorado River Aqueduct and surrounded by national park lands to the north, west, and south (See *Map 1-1: Joshua Tree National Park* and *Map 1-3: Study Area*).

Legal Location: Townships 3 and 4 S., Ranges 13 to 15 E., San Bernardino Meridian, Riverside County, California.

Background

Much of the study area was part of Joshua Tree National Monument when designated in 1936. The presence of patented mining claims containing substantial deposits of iron ore led to the removal of this area for mineral extraction purposes in 1950. The federal lands that were removed from the monument were transferred to the BLM for administration. From 1948 to 1983, Kaiser Steel Corporation operated the Eagle Mountain Mine in this area where it extracted iron ore to supply its steel mill in Fontana, California. During this time it was the largest iron mine in the western United States (Force 2001). Ultimately, four large open pits of between one to two miles in length were constructed by Kaiser Steel Corporation. Full-scale iron ore mining ceased in 1983, although limited mining of surface materials continues today.

In 1989, Kaiser Eagle Mountain, Inc. (Kaiser) and Mine Reclamation Corporation proposed to develop the Eagle Mountain Landfill and Recycling Project in the Eagle Mountains in around the Eagle Mountain Mine. They also proposed renovation of the nearby Eagle Mountain Townsite to support landfill operations. To facilitate the landfill project, Kaiser proposed a land exchange to acquire the public lands managed by the BLM (3,481 acres) in the project area and acquire the federal reversionary interest in the Eagle Mountain Townsite. BLM approved the land exchange in 1999. Litigation challenging the land exchange was filed soon thereafter. While the litigation was ongoing, Kaiser and its partners entered into an agreement with the Sanitation Districts of Los Angeles County to take over the project. The federal courts ultimately found deficiencies in BLM's process for approving the land exchange. Before BLM could correct the deficiencies identified by the courts, the Sanitation Districts of Los Angeles County in 2013 announced that it would no longer pursue acquisition of the Eagle Mountain landfill project. These developments effectively ended the viability of the landfill project. In December 2014, the litigation concluded when the federal district court issued a final judgment and order returning the

exchanged federal lands in the Eagle Mountain area to the BLM. The returned lands and the other BLM managed lands within the area and surrounding region continue to be available to various development proposals, including a current plan for a pumped storage hydroelectric project approved by Federal Regulatory Energy Commission (FERC).

While some portions of the Eagle Mountain area have been disturbed as a result of mining operations, most of the lands within the study area remain undeveloped and in federal ownership. The Eagle Mountain area contains resources and values fundamental to the established purpose of Joshua Tree National Park. Such resources and values include: desert tortoise and bighorn sheep habitat and other habitat types important for maintaining biological diversity and healthy ecosystem function; interconnectivity of California desert lands; wilderness values and accessibility; dark night skies; hydrological resources; desert landforms; and recreational opportunities. Historic resources associated with the Eagle Mountain Mine and Townsite, the Colorado River Aqueduct, and General Patton's World War II Desert Training Center may provide opportunities to expand the rich history interpreted at Joshua Tree National Park.

Background of Joshua Tree National Park

Location and Description

Joshua Tree National Park lies within both San Bernardino and Riverside counties, approximately 100 miles from the Los Angeles metropolitan area. More than 18 million people live within a three-hour drive of the park. The natural desert expanse of the park provides ideal conditions for campers, photographers, star gazers, naturalists, as well as anyone seeking space for quiet introspection, exploration, or outdoor learning. The extensive granite rock outcrops, boulder piles, desert mountain ranges, and canyons create a world-class destination for rock climbers, as well as hundreds of miles of scenic trails for hikers and equestrians (See *Map 1-1: Joshua Tree National Park*).

Joshua Tree National Park lies along the east-west transverse ranges of the Little San Bernardino Mountains in southern California. The southern boundary of the park follows the base of these mountains along the northern edge of the Coachella Valley; the northern boundary is defined by the Morongo Basin. Ecologically, Joshua Tree National Park lies at the convergence of two deserts—two large ecosystems whose characteristics are determined primarily by elevation and rainfall patterns. Below 3,000 feet, the Colorado Desert encompasses the eastern part of the park and features natural gardens of creosote bush, ocotillo, and cholla cactus. The special habitat of the Joshua tree is found in the higher, moister, and slightly cooler Mojave Desert. In addition to Joshua tree forests, the western part of the park also includes some of the most interesting geologic displays found in California's deserts.

Given its location along a transition zone between two desert ecosystems, the park is home to a fascinating diversity of desert plants and animals. There are more than 750 species of vascular plants. The park includes five fan palm oases, which are the few areas where surface water occurs naturally. The oases also support vegetation and wildlife distinct from other species found in the park. The park as a whole hosts a high diversity of fauna, including 250 species of birds, and many unique reptiles, amphibians, mammals, and invertebrates. Some examples include the desert tortoise, the California tree frog, the desert bighorn sheep, and a species of tarantula that is found only in the Joshua tree ecosystem.

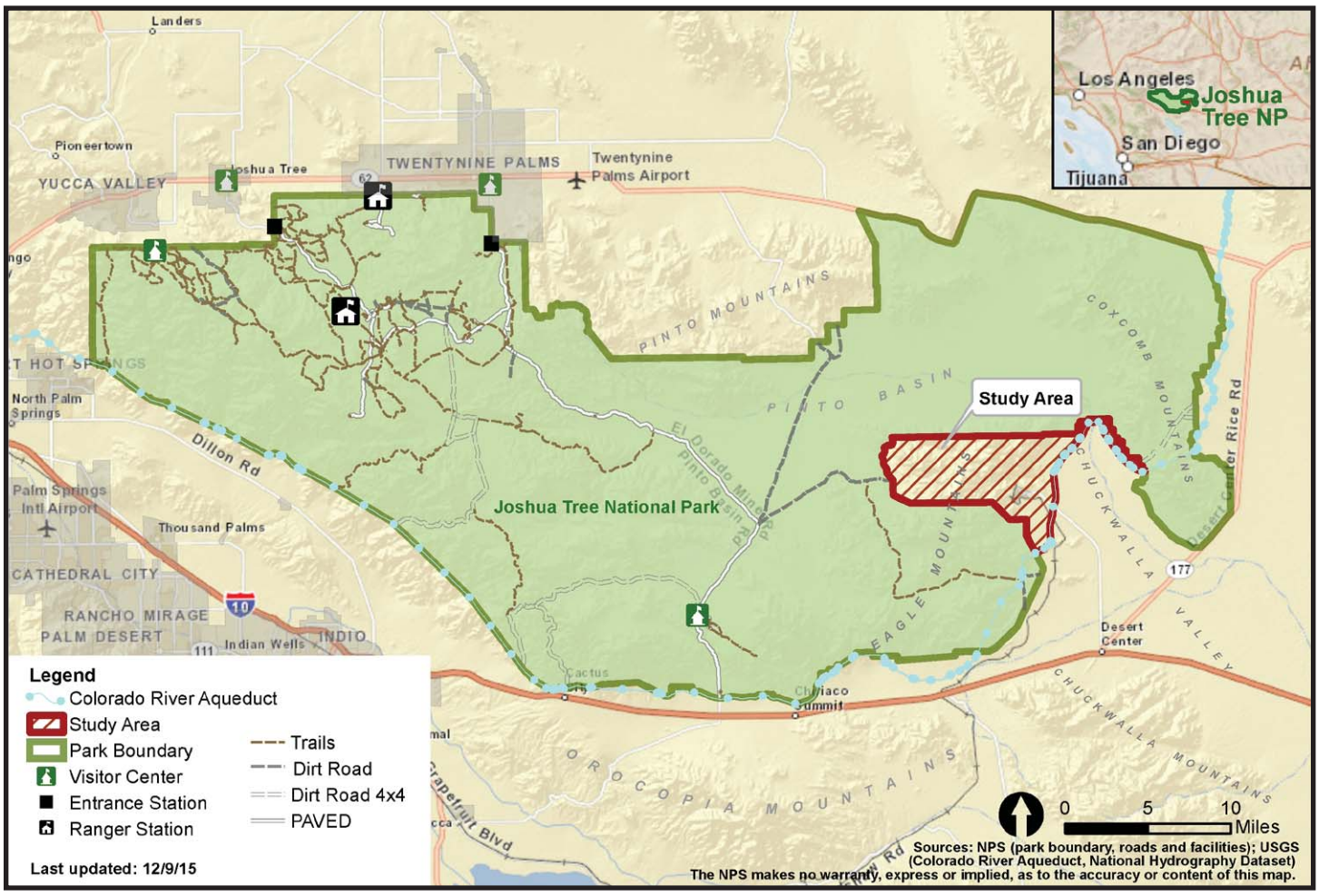
Joshua Tree National Park includes a rich and diverse cultural history. Human occupation dates to at least the early Holocene period, with what is known as Pinto culture (7,000-10,000 years ago); human occupation continued

throughout the Holocene into the historical era with tribes known today as Cahuilla, Chemehuevi, Mojave, and Serrano. The park preserves thousands of sites and materials associated with these four overlapping ethnographic native cultures. In the late 19th century, European American surveyors, cattlemen, miners, and homesteaders began to arrive and, alongside native peoples, created a set of enduring social and cultural legacies for these lands. Historic sites preserve information on the history of the processing of gold ore, cattle ranching, rustling, World War II military training grounds, and homesteading of the southwestern deserts.

Historic mine site at Joshua Tree National Park.

Joshua Tree National Park, View of Eagle Mountains from Pinto Basin.

Map 1-1: Joshua Tree National Park



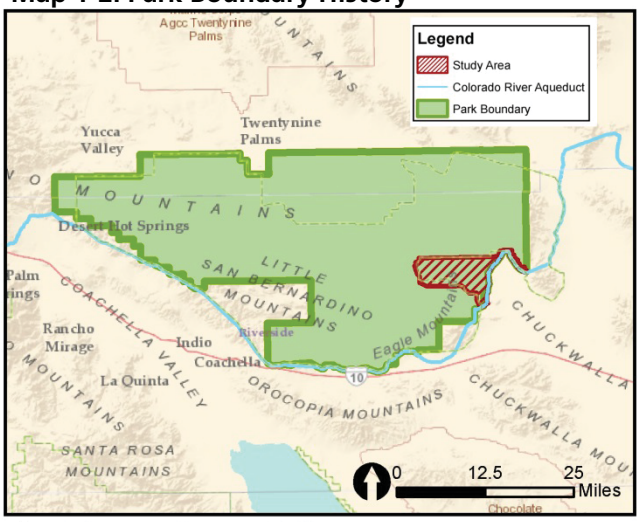
Brief History of the Park Boundary

This section provides a history of Joshua Tree National Park's boundary over time. See *Map 1-2: Park Boundary History* for an illustration of the park's boundary from 1936 through 1994. Full descriptions of relevant legislative actions and presidential proclamations are included in *Appendix A: Presidential Proclamation and Legislative Acts for Joshua Tree National Park.*

In 1936, President Franklin D. Roosevelt established Joshua Tree National Monument as a unit of the national park system (Proclamation No. 2193, 50 Stat. 1760, (August 10, 1936). The national monument included 825,340 acres of land, some of which remained in private ownership, including patented mining claims in the Eagle Mountain area. Establishment of the monument withdrew the lands from future mineral entry, which meant that no new mining claims could be established. Mining advocates concerned with the closure of the monument to new claims requested legislation to allow mining within the monument in December 1936 causing the NPS to evaluate the 1936 monument boundaries (Dilsaver 2015).

Meanwhile, shortly after the monument was established, United States involvement in World War II created new demand for steel. In 1942, Kaiser Steel Corporation (Kaiser) opened the west coast's first financially successful, large-scale, fully-integrated steel mill in Fontana, California. Industrialist Henry J. Kaiser, whose industries developed several ship building yards to supply the war effort, had submitted previous proposals to open a west coast steel mill prior United States involvement in World War II. But it was the bombing of Pearl Harbor in December 1941 and subsequent U.S. involvement that ultimately led to federal approval and financing for construction of the steel mill in 1942. The Fontana steel mill was initially supplied with iron ore from the Vulcan Mine near Kelso in the Mojave Desert (Dias 1995). In 1943, the U.S. Bureau of Mines estimated that vast resources, possibly more than 3,000,000 tons of iron ore,

Map 1-2: Park Boundary History



Park Boundary 1936

Park Boundary 1950

Park Boundary 1994-Present

existed at the Iron Chief Mine in the Eagle Mountains. Kaiser purchased the patented lands associated with the Iron Chief Mine in 1944. Iron ore reserves at the Vulcan Mine declined in the late 1940s while production of iron ore on the patented lands at Eagle Mountain commenced in 1948 under a conditional use permit with the National Park Service (Dilsaver 2015).

In response to pressure from the mining community to open park lands to new claims, the demand for mineral resources that grew during World War II, and with an eye to a potential new war with Korea, Congress removed substantial portions of the national monument in 1950, including the Eagle Mountain area (Dilsaver 2015). The 1950 legislation (Act of Sept. 25, 1950, Pub.L. 81-837, 64 Stat. 1033) reduced the size of the monument to 557,934 acres, excluding mineral rich areas in the north and southeast. Federal lands removed from the monument were transferred to the Bureau of Land Management (BLM) for administration.

To further support the Kaiser Steel Corporation's (Kaiser) mining activities, Congress enacted a private law in 1952 transferring, 460 acres of federal land in the Eagle Mountain area to Kaiser for purposes of establishing a mining camp or Townsite to house its employees and for other related needs, Act of July 8, 1952 (Priv. L. No. 790, 66 Stat. A130). The same Act also granted a 200-foot wide right-of-way to Kaiser across BLM-managed federal land for a railroad to haul iron ore from the mine the mill in Fontana, California. Private Law 790 included a reversionary clause which provided that in the event the Townsite or railroad were not used for mill site or other incidental purposes related to mining for a continuous period of seven years, the properties would revert in fee to the United States. As a result of economic factors and international competition, Kaiser ceased active operation of the Eagle Mountain Mine by 1983. The reversionary interest in the Eagle Mountain Townsite and railroad, which had been conveyed to Kaiser as part of a BLM land exchange in 1999 was returned to the United States when the federal court approved the final judgment and order ending the landfill litigation in 2014.

Subsequent designations and boundary adjustments. Congress designated 429,690 acres of the monument as wilderness and 37,550 acres as potential wilderness in 1976. In 1984, the monument was designated as part of a biosphere reserve system. In 1994, the California Desert Protection Act added 234,000 acres (including 163,000 acres of new wilderness) to the park, and re-designated the area as Joshua Tree National Park. Through the California Desert Protection Act, Congress expressly found that "the monument boundaries as modified in 1950 and 1961 exclude and thereby expose to incompatible development and inconsistent management, contiguous Federal lands of essential and superlative natural, ecological, archeological, paleontological, cultural, historical, and wilderness values." Congressional testimony on the California Desert Protection Act indicates that the Eagle Mountain area was specifically excluded because of proposals to site a solid waste landfill in the area at the time the legislation was enacted (House Committee on Natural Resources Report 103-498, at 3606). Today, the park boundary currently contains over 770,000 acres in federal ownership and approximately 20,000 acres of nonfederal lands.

Park Foundation Document

Every unit of the national park system has a foundational document to provide basic guidance for planning and management decisions. Core components of a foundation document include park purpose, significance statements, and fundamental resources and values. Because these components are essential, defining elements for park management, they typically do not change over time.

The purpose statement for Joshua Tree National Park is based on the park's enabling legislation and related legislative history. *Appendix A: Presidential Proclamation and Legislative Acts for Joshua Tree National Park* includes the Presidential Proclamation that established Joshua Tree National Monument in 1936 and subsequent legislative acts related to the purpose of Joshua Tree National Park, including the section of the California Desert Protection Act of 1994 that designated the area a national park.

Park Purpose

The purpose of Joshua Tree National Park is to preserve and protect the scenic, natural, and cultural resources representative of the Colorado and Mojave deserts' rich biological and geological diversity, cultural history, wilderness, recreational values, and outstanding opportunities for education and scientific study.

Park Significance

Significance statements express why a park's resources and values are important enough to merit designation as a unit of the national park system. The following significance statements were identified for the park:

- Joshua Tree National Park preserves a world-renowned, undisturbed population of Joshua trees (*Yucca brevifolia*), an integral component of the Mojave Desert ecosystem.
- Outstanding examples of Mojave and Colorado Desert landscapes that converge at Joshua Tree National Park create a biologically rich system of plant and animal life characterized by iconic Joshua tree woodlands, native palm oases, and vast expanses of creosote scrub that are uniquely adapted to desert conditions. The park also contributes significantly to the connectivity of open lands and large protected areas across the California desert.
- Joshua Tree National Park provides accessible and diverse opportunities in a remote desert to large and burgeoning urban populations.
- Joshua Tree National Park preserves a rich array of prehistoric, historic, and contemporary resources that demonstrate the integral connection between desert ecosystems, land use, and human cultures.
- Joshua Tree National Park lies along one of the world's most active earthquake faults, the San Andreas Fault. Geologic processes, including tectonic activity, have played and continue to play a major role in shaping the mountains, valleys, and basins of the park.
- Joshua Tree National Park offers unparalleled opportunities for research of arid land ecosystems and processes, adaptations of and to desert life, sustainability, and indications of climate change. The proximity of the park to urban regions of Southern California and Nevada enhances its value for scientific research and education.
- Huge, eroded monzogranite boulder formations are world-renowned natural features that provide unique aesthetic, educational, and recreational opportunities for Joshua Tree National Park visitors.
- Geologic, climatic, and ecological processes create scenic landscapes unique to deserts and fundamental to the character of Joshua Tree National Park.

Fundamental Resources and Values

Fundamental resources and values help focus planning and management efforts on what is truly significant about a park. One of the most important responsibilities of NPS managers is to ensure the conservation and public enjoyment of those qualities that are essential (fundamental) to achieving the purpose of the park and maintaining its significance. If fundamental resources and values are allowed to deteriorate, the park purpose and/or significance could be jeopardized.

The following fundamental resources and values have been identified for Joshua Tree National Park:

- Oases and other riparian areas
- Habitat for the desert tortoise
- Interconnectivity of California desert lands
- Biological diversity and healthy ecosystem function
- Wilderness values and wilderness accessibility
- Recreational opportunities and values
- Night sky
- Clean and breathable air
- Natural quiet (soundscape)
- Prehistoric sites and ethnographic resources relating to American Indian inhabitants, including the type site for Early Pinto culture
- Historic and ethnographic resources related to European American inhabitants
- History of the desert preservation movement
- Museum collections of archives, natural history specimens, and archaeological artifacts, including the Campbell Collection
- Geological resources
- Hydrological resources
- Desert landforms
- Ever-expanding knowledge base
- Opportunity to understand, apply, and share this knowledge to benefit the park and beyond
- Recreational activities centered around the boulders and rock formations
- Viewsheds
- Access to scenic vistas
- Visibility

Study Area Description

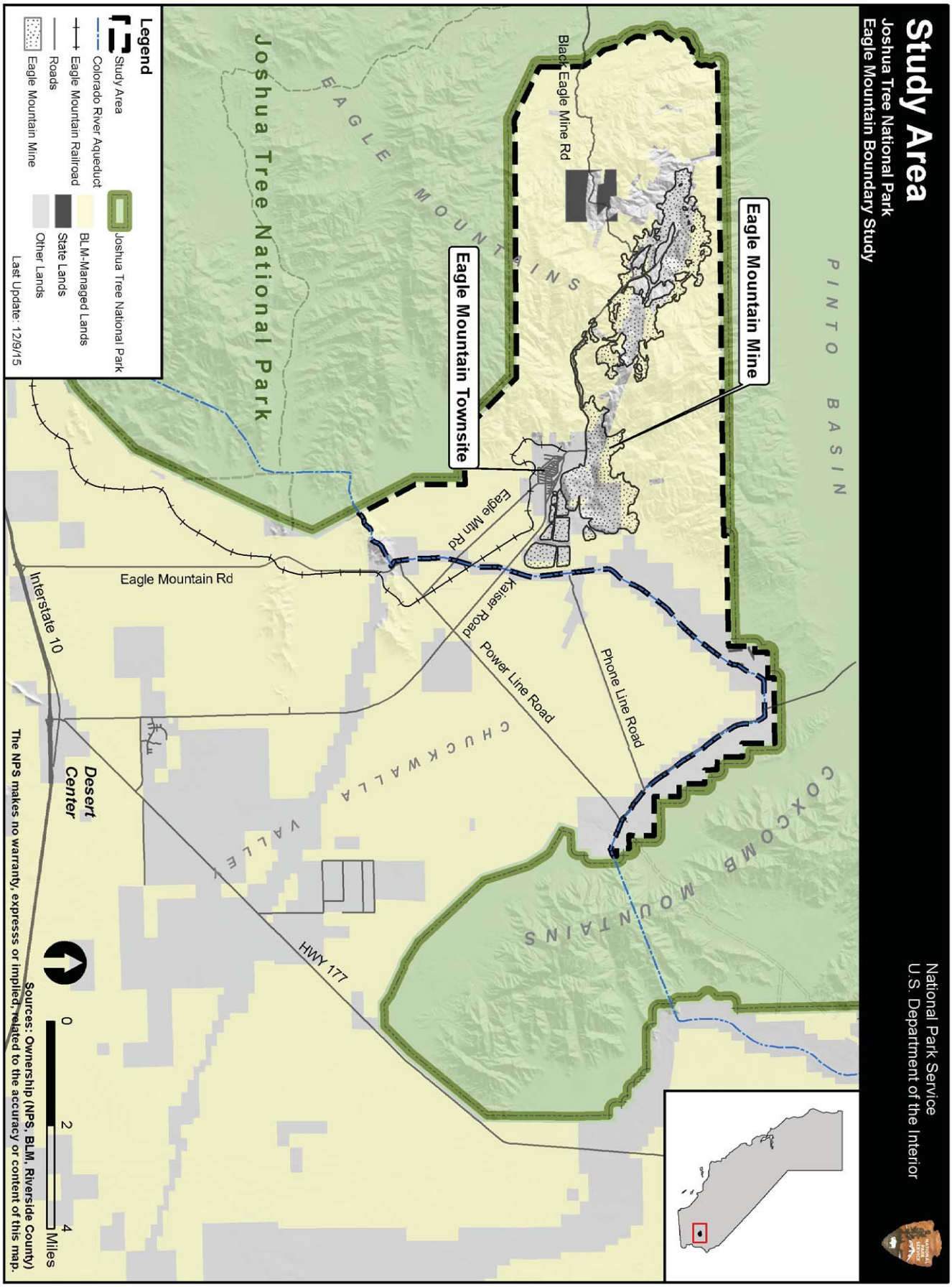
The study area includes approximately 31,500 acres of land in the Eagle Mountains and Chuckwalla Valley (See *Map 1-3: Study Area; photos of the study area are depicted on page 11*). Located in Riverside County, California, the study area is bounded to the south, west, and north by Joshua Tree National Park. The eastern border of the study area is defined by the Colorado River Aqueduct, which roughly formed the original park boundary established in 1936. The study area is located approximately ten miles north of Interstate 10. Primary access is through the town of Desert Center via Kaiser Road or through the park via Black Eagle Mine Road.

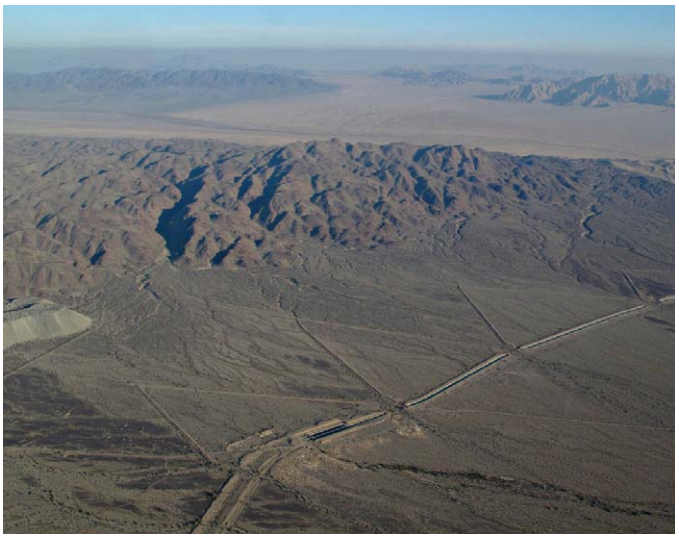
The majority of the study area (over 23,000 acres) is federally owned land managed by the Bureau of Land Management (BLM). These lands are largely undisturbed and are adjacent to national park lands. Visitor use is sparse and primary recreational consisting of rockhounding, off-highway vehicle use, shooting, backcountry camping, and hiking. Mining occurs on several unpatented mining claims. Recently, through the *Desert Renewable Energy Conservation Plan Proposed Land Use Amendment*, BLM proposed to designate portions of the study area as national conservation lands or areas of critical environmental concern, in recognition of the nationally significant resource values of the area.

Approximately 5,000 acres of land in the study area is in private ownership. Almost all of the private land is owned by Kaiser Eagle Mountain, LLC (KEM). KEM was purchased by Eagle Mountain Acquisition, LLC from CIL&D, LLC (formerly known as Kaiser Ventures) in June 2015. ~~a subsidiary of the~~ Eagle Crest Energy Company (Eagle Crest) has a substantial interest. ~~which~~ Eagle Mountain Acquisition, LLC ~~purchased KEM and its assets from CIL&D, LLC (formerly known as Kaiser Ventures) in June 2015.~~ CIL&D, through a subsidiary (Eagle Mountain Mining and Railroad Company, LLC or EMMR), has retained the railroad right-of-way assets and the right to sell above-ground iron ore tailings and rock from the property. This includes the extraction of rock and fine tailings from the waste rock piles remaining from previous mining activity but does not include any new extractive mining. The mining lease is for a term of 40 years, which is subject to extensions up to 100 years, if certain conditions are met. The KEM lands bisect the federal lands along an east-west corridor. They are comprised of the Eagle Mountain Townsite lands and other features associated with the Eagle Mountain Mine. The Eagle Mountain Townsite was a once a bustling community created for mine workers and their families. When the mine ceased full-scale operations in 1983, most residents moved elsewhere leaving structures primarily vacant.

State and local agencies also own and/or manage land within the study area. The Metropolitan Water District of Southern California owns lands along the eastern boundary of the study area (approximately 2,800 acres) for purposes of managing the extensive Colorado River Aqueduct which supplies a significant amount of water to the greater Los Angeles metropolitan region. The study area also contains lands managed by the Desert Center Unified School District, which operates a school in the area. The State of California owns approximately ~~340~~ 379 acres of State School Lands. Managed by the California State Lands Commission, the State School Lands were granted to California by Congress in 1853 to benefit public education.

Map 1-3: Study Area





The Colorado River Aqueduct forms the eastern boundary of the study area. Photo by Ecoflight, 2011.

Homes at the Eagle Mountain Townsite.

Federal lands administered by the BLM make up most of lands in the the study area (~73%). Photo taken from Black Eagle Mine Road.

Aerial view of the Eagle Mountain Mine and Townsite with the undeveloped Eagle Mountains in the background. Photo by Ecoflight, 2011.

Proposed Action

For this environmental assessment, the proposed action is a 25,070-acre expansion of Joshua Tree National Park in the Eagle Mountain area, including the possible withdrawal and transfer of administrative jurisdiction of 22,515 acres of federal lands from the Bureau of Land Management (BLM) to the National Park Service (NPS).

Purpose and Need

Purpose

This study evaluates the potential addition of approximately 31,500 acres of land in the Eagle Mountain area to Joshua Tree National Park in order to (a) protect important natural and cultural resources associated with the primary purpose of the park, and (b) address other park management issues. The study was initiated at the request of the Director of the National Park Service. Lands under evaluation in the study have been the subject of numerous development proposals that have the potential to impact park resources. Congressman Raul Ruiz (CA-36) formally requested that NPS complete a boundary study for the Eagle Mountain area in April 2015 so that ongoing decisions about the future of the area would be informed by a determination of whether the resources in the area are of national park value.

Through this study, the NPS examines the feasibility and appropriateness of adding all or portions of the study area lands to the national park boundary. The boundary study also includes an environmental assessment (EA) that will serve as the environmental analysis under the National Environmental Policy Act of 1969 (NEPA) required for park boundary adjustment considerations. The EA has been prepared in accordance with NEPA and NPS *Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making.*

This document further serves as the required environmental analysis for the possible withdrawal and ~~subsequent~~ transfer of approximately 22,515 acres of federal lands managed by the BLM to the NPS as authorized by provisions of the Land and Water Conservation Fund Act[1] and the Federal Land Policy and Management Act[2] (FLPMA).

The NPS has requested the withdrawal of public lands within the study area (approximately 22,515 acres managed by the BLM) for 20 years from settlement, sale, location, and entry under the public land laws, including the United States mining laws, and leasing or other disposition under mineral or geothermal leasing laws. These public lands are adjacent to the national park. The purpose of the withdrawal is to complete an administrative transfer of the identified public lands from the BLM to the NPS in accordance with 54 U.S.C. 100506(c)(1)(B) for administration as part of Joshua Tree National Park.

To initiate this process, lands described in the withdrawal application would be segregated (i.e., restricted) from further disposition under various public land laws The segregation would remain in effect for a period of two years from the date of publication of a notice of the withdrawal proposal in the Federal Register. During this two-year period, proposed new land uses under the FLPMA would have to take into consideration any potential effects on NPS resource values. The segregation would prevent the location of new mining claims or disposal of the lands under the public land laws pending final action on the withdrawal proposal. Additionally, the segregative period allows for

[1] The Land and Water Conservation Fund Act authorizes NPS to accept an administrative transfer of lands from another federal agency for inclusion with an adjacent national park unit. See 54 U.S.C. § 100506(c)(1)(B) (formerly found at 16 U.S.C. § 460l-9(c)(1)(ii)).

2 The Federal Land Policy and Management Act authorizes the Secretary to transfer jurisdiction over federal lands. See 43 U.S.C. §§ 1702(j), 1714 and 43 C.F.R. § 2310.1-2.

the petitioning agency (here, NPS) to conduct required studies to inform the decision. This study is designed to meet those requirements. Licenses, permits, cooperative agreements, or other discretionary land use authorizations, including those related to the Eagle Mountain Pumped Storage Hydroelectric Project (FERC Project No. 13123-002), may be issued by the BLM during the temporary segregative period, after coordination with the National Park Service to ensure protection and consideration of national park values.

Appendix B: Studies and Reports Required by 43 CFR 2310.3.2 (Segregation and Withdrawal Application) contains additional information about the segregation and withdrawal application and the components of this study that meet the requirements of 43 CFR Part 2300, subpart 2310, which outlines the requirements of the withdrawal process.

Thus the purpose of this study and environmental assessment is to evaluate the suitability of the project area land for inclusion in Joshua Tree National Park.

Need

The cumulative and synergistic effect of changes in land use to the region as a result of energy development, urbanization, and the effects of climate change have the potential to dramatically impact the protection of biodiversity within Joshua Tree National Park (Hansen et. al. 2014). In recent years the California desert has become an important location for renewable energy facilities. Secretary of the Interior Kenneth Salazar signed Secretarial Order No. 3285 in March 2009 making renewable energy production a top priority for the Department of the Interior and the Bureau of Land Management (BLM). The State of California has enacted renewable resource goals to increase the percentage of renewable energy generation to 50 percent by 2030.

In an effort to meet both state and national goals for renewable energy, a large number of renewable energy projects have been approved and more are proposed on BLM-managed land, State-owned land, and private land in the California desert. *Map 1-4: Regional Development Projects* depicts existing and proposed renewable energy projects near the study area. Within the study area LH Renewables submitted an application to BLM to conduct testing for a 2,700-acre wind farm in the southeastern corner of the study area. This application was still pending as of December 2015. Two miles west of the study area is one of the world's largest photovoltaic solar power farms. The Desert Sunlight Solar Farm spans 3,800 acres of land managed by the BLM. The Riverside East Solar Energy Zone (SEZ), located just four miles southeast of the study area encompasses 147,915 developable acres of BLM-administered lands within the Chuckwalla Valley, the southern portion of Palen Dry Lake, and Palo Verde Mesa. This area is visible from several points within Joshua Tree National Park (BLM 2015a).

Another development project in the study area has been proposed by Eagle Crest Energy Company (Eagle Crest). Eagle Crest's Eagle Mountain Pumped Storage Hydroelectric Project (pumped storage hydroelectric project) received a 50-year license from the Federal Energy Regulatory Commission (FERC) in June 2014 (Project No. 13123-002). If constructed, the project will occupy 1,150 acres of public land (approximately 620 acres within the study area) and 1,377 acres of private land (approximately 1,050 within the study area). The public lands needed for the central portion of the pumped storage hydroelectric project were previously withdrawn from the operation of the public lands laws pursuant to the Federal Power Act. The pumped storage hydroelectric project will store energy from solar, wind and geothermal power plants for release during times of peak demand and to maintain the stability of the electrical grid. Two of the four existing mine pits

at the Eagle Mountain Mine will serve as reservoirs to transfer water back and forth through an underground turbine system, producing up to 1,300 megawatts of electricity. The project foot print and associated rights-of-way span wildlife corridors that are linked to habitat in the surrounding park lands.

The Eagle Mountain area remains a key building block for landscape-scale conservation in the California desert. Inclusion of the study area in the national park boundary could help to achieve landscape-scale conservation objectives for the unique California desert region. In addition, the study area: 1) contains areas important for maintaining wilderness values, biodiversity, and other natural values within Joshua Tree National Park; 2) includes cultural resources that expand on cultural themes interpreted at the national park; and 3)offers new opportunities for public enjoyment.

The boundary study is needed for the following reasons:

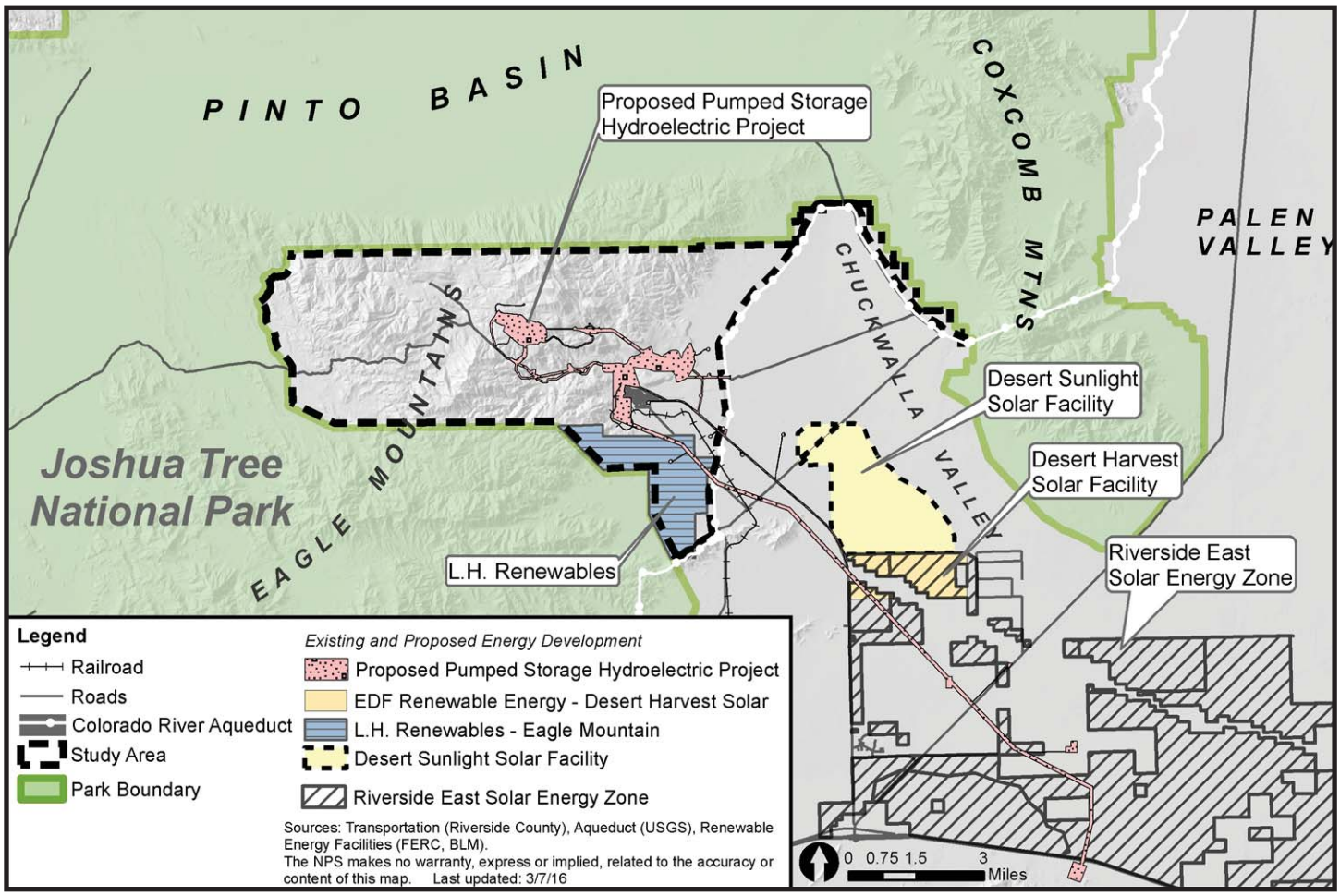
- Formerly included within the boundary of Joshua Tree National Monument when established in 1936, the area of study is bounded on three sides by national park lands, including the most pristine wilderness areas of the park. Values include dark night skies, high air quality, and natural quiet, all of which could be affected by proposed future uses of the area.
- Regional development projects, urbanization, and the effects of climate change will pose additional challenges to maintaining park biodiversity. Although some portions of the study area have been developed and altered to support the area's former mining operations, the majority of the study area lands (roughly 80%) are primarily undeveloped, containing regionally important habitat and migration corridors for rare and threatened wildlife that inhabit Joshua Tree National Park. In addition, some natural recovery of the area has begun in areas that were previously mined. Landscape-scale conservation approaches that include opportunities to protect regional wildlife corridors will be an important component in addressing threats to park biodiversity.
- Future use and development of study area lands and surrounding areas in the Chuckwalla Valley could affect important water resources within the park. Joshua Tree National Park's aquifers ~~and springs~~ are hydraulically connected ~~underground~~ to aquifers in the Eagle Mountain area.
- The study area contains historic resources such as the Eagle Mountain Mine and Townsite which may provide opportunities to expand the mining history currently interpreted in Joshua Tree National Park. Other historic resources include features related to the development of the Colorado River Aqueduct and portions of General Patton's extensive World War II Desert Training Center. There is also high potential for discovery of archeological resources related to the area's long history of human use.
- The study area provides opportunities to expand public enjoyment at Joshua Tree National Park. In addition to the area's interpretive value, visitor opportunities include improved access to some of the most remote areas of the park, and the potential for introducing new recreational opportunities.
- Administratively, the site's proximity to Interstate 10 could improve NPS access to the southeastern end of the park, providing park resource managers with

new avenues to monitor and study resources in these areas.

There is a need to protect the area from further mineral exploration and development to prevent the loss resources and public enjoyment opportunities related to the purpose of Joshua Tree National Park. The purpose of the possible withdrawal is to protect this area from settlement, sale, location, and entry under the public land laws, including the United States mining laws, and leasing or other disposition under the mineral and geothermal leasing laws. By regulation, withdrawals are subject to a 20-year timeframe, after which, the withdrawal would terminate unless an application for and extension of this withdrawal is submitted and approved. The withdrawal would also terminate once an administrative transfer of the identified public lands from the BLM to the NPS in accordance with 54 U.S.C. 100506(c)(1)(B) is completed.

The Desert Sunlight Solar Farm, located approximately two miles east of the study area, spans 3,800 aces in the Chuckwalla Valley.

Map 1-4: Regional Development Projects



Boundary Study Criteria

This boundary study examines the cultural, historic, and natural significance of the study area properties to determine how they contribute to the purpose of Joshua Tree National Park. The NPS will evaluate the properties under consideration according to criteria set forth originally in the 1991 NPS Boundary Criteria document (NPS 1991b) and clarified in Section 3.5 of the NPS *Management Policies 2006* (NPS 2006). For a property to be included in a boundary expansion, at least one of three criteria must be met.

The inclusion of the property must:

- protect significant resources and values, or enhance opportunities for public enjoyment related to park purposes;
- address operational and management issues, such as the need for access or the need for boundaries to correspond to logical boundary delineations such as topographic features or roads; or
- otherwise protect park resources that are critical to fulfilling park purposes (NPS 2006).

Those lands found suitable under the foregoing criteria must further meet the following two requirements:

- The added lands will be feasible to administer, considering size, configuration, and ownership; costs; the views of and impacts on local communities and surrounding jurisdictions; and other factors such as the presence of structures, hazardous substances, or nonnative species.
- Other alternatives for management and resource protection are not adequate (NPS 2006).

Elements of the Boundary Study

In evaluating properties for possible inclusion within the park's boundary, the NPS used the following steps:

- Delineation of a study area to identify the extent of possible properties to include in the study;
- Evaluation of those properties for history, ownership, and potential to complement the purpose of the park;
- Application of the boundary criteria to potential addition lands;
- Development of alternatives;
- Assessment of the impacts of each alternative (including a no action alternative) on cultural, natural, and socioeconomic resources;
- Analysis of impacts of the expansion related to past, present, and reasonably foreseeable future projects in the area.

New legislation for the area's federal lands is not needed to transfer administrative jurisdiction of the area's federal lands from the BLM to the NPS. This transfer can be accomplished within the Secretary of the Interior's existing legal authorities. However, boundary expansion proposals for lands not in federal ownership may require authorization by the United States Congress. Following authorization of a boundary adjustment, the implementation of actions related to expansion of lands within the park boundary will depend on future funding and NPS priorities. The approval of a boundary adjustment does not necessarily guarantee that funding and staffing needed for implementation would be forthcoming.

Study Process

Scoping

Scoping for this study included both internal and public scoping. Internal scoping was conducted with staff from the Joshua Tree National Park, the National Park Service (NPS) Pacific West Regional Office, and other members of the project team, and included a site visit to the study area. In July 2015, the NPS initiated public scoping. The public comment period occurred from July 13, 2015 to August 21, 2015. On July 13, the NPS sent out a public scoping newsletter to over 160 individuals, organizations, and agencies. Newsletters were also distributed at local public meetings and at park visitor centers. The newsletter included an overview of the study process, preliminary findings, and a range of boundary adjustment options for consideration in the study. The newsletter was posted for comment on the NPS' Planning, Environment and Public Comment (PEPC) website: http://parkplanning.nps.gov/eaglemountain. A press release announcing the start of public scoping and the public meeting schedule was sent to media outlets, and several articles were published on both the study and public meetings. On July 16, 2015, the study team provided a briefing for agencies that manage land and resources in the study area.

Preliminary options presented during public scoping included:

- **Continuation of current management (no action).** No portions of the study area would be considered for inclusion in Joshua Tree National Park.
- **Federal Agency-to-Agency Land Transfer (~22,500 acres).** This option would explore a transfer of federal lands under management by the BLM to the NPS to be managed as part of Joshua Tree National Park.
- **Agency Transfer with Enhanced Habitat Connectivity and Recreation (~24,800 acres).** This option would consider a transfer of BLM-managed public lands to the NPS, as well as inclusion of former Eagle Mountain Mine lands in the western end of the study area. Acquisition of any non-federal lands would be accomplished through purchase from willing sellers or by donation only.
- **Restore 1936 Boundary to Provide Diverse Visitor and Resource Protection Opportunities (~28,000 acres).** This option would explore including most of the lands in the study area within Joshua Tree National Park. Acquisition of any non-federal lands would be accomplished through purchase from willing sellers or by donation only.

Public Involvement

The study team conducted four public meetings during the scoping period, including one online meeting (July 29, 2015) and three meetings in the vicinity of Joshua Tree National Park held August 4-6, 2015 (Desert Center, Joshua Tree, and Palm Desert). Meetings were well attended (230 total attendance), with the greatest participation in Joshua Tree, California (150 attending). At each meeting, the study team presented the preliminary findings and a range of boundary adjustment options. Participants were able to ask questions and provide comments on the study, which were recorded on flipcharts by NPS staff. NPS also took notes of comments and questions during the online meeting. Attendees were provided information about how to submit comments electronically and through the mail. The NPS received approximately 11,000 comment letters during the comment period from many individuals, diverse groups and organizations, local businesses, tribal organizations, and two letter-writing campaigns.

Issues and Concerns Identified During Public Scoping

NEPA regulations require an "early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action." To determine the scope of issues to be analyzed in depth within this boundary study / EA, meetings were conducted with NPS staff, interested stakeholders, and members of the public.

The public scoping comments covered a broad range of topics. The majority of the comments were either directly related to the preliminary options or to the primary topics of mineral interests and rights, legislative history, documentation of various resource types associated with the study area, and recommendations for topics to be addressed in the environmental analysis. Most comments supported the NPS management of resources in the study area and the fourth option, which explored adding most of the lands in the study area to Joshua Tree National Park (*Restore 1936 Boundary to Provide Diverse Visitor and Resource Protection Opportunities*). Other comments preferred no action citing concerns that NPS management would generally restrict access and activities such as placer mining.

Primary areas of concern included:

- **Cumulative Effects of Development and Energy Projects**. Many commenters expressed concern about the cumulative effects of renewable energy and other development projects on resources in Joshua Tree National Park. Comments expressed concern about the potential effects of the Eagle Mountain Pumped Storage Hydroelectric Project planned for the area, particularly with regard to the impact on local groundwater supplies and wildlife.
- **Impacts to Access and Recreational Use**. Concerns were raised that National Park Service management would restrict existing recreational uses of the area. Some users were specifically concerned about restrictions of off-road vehicle use and that access in general might be restricted under NPS management.
- **Impacts to Mining Activity**. Of particular concern was the potential impact on mining club members which maintain several unpatented claims on BLM-managed public lands in the area. Miners were concerned that the expense of conducting validity exams on their mining claims to resolve whether they retain a valid existing right would be prohibitive.
- **Mineral Resource Potential.** A few commenters expressed concern that the mineral resources of the area would become unavailable for use if the lands were added to Joshua Tree National Park.
- **Information to Consider for the Environmental Analysis.** The following topics were suggested for documentation and evaluation in the environmental analysis: cumulative impacts from regional development projects, effects on water resources/supplies, wildlife protection and regional habitat connectivity, mining history, mineral rights, mineral resources, effects on current recreational users, ethnographic resources and values, historic and archeological sites, paleontological resources, night sky, effects on wilderness and viewsheds, hazardous materials that may be present as result of previous mining activities, costs and financial feasibility of NPS management, socioeconomic impacts, and transmission lines and other infrastructure.
- **Agency Consultation.** Commenters suggested that the NPS work closely

with the BLM on the study, with particular regard to how the *Desert Renewable Energy Conservation Plan* will affect management and protection of the study area. See discussion of this plan in the section to follow, *Applicable Federal Laws, Regulations, Executive Orders, Plans, and Policies*.

- **Tribal Consultation:** The NPS received comments from several tribal organizations with cultural ties to the area that offered information and requested consultation with NPS under the Section 106 process of the National Historic Preservation Act.
- **Reversionary Interest in the Eagle Mountain Townsite.** Many commenters had questions about whether the legislative actions that removed lands from Joshua Tree National Monument in 1950 and granted Kaiser Steel Corporation use of land for a Townsite contained provisions for returning that land to the federal government when such mining activities ceased.
- **Other Information.** Comments provided additional sources of information for the NPS to consider in the study process.

The issues and concerns identified during scoping were grouped into impact topics that are analyzed in *Chapter 5: Environmental Consequences*.

Applicable Federal Laws, Regulations, Executive Orders, Plans, and Policies

The NPS is governed by laws, regulations, and management plans before, during, and following any management action related to the developed NEPA document. The following are those applicable to the proposed action.

Archeological Resources Protection Act of 1979

The Archeological Resources Protection Act was enacted in 1979 and recognizes that archeological resources on federal and Indian lands represent an accessible and irreplaceable part of the heritage of the United States, and that many of these resources are endangered because of their commercial attraction. The act provides protection for archeological resources on federal lands and provides for a permitting system for all types of archeological investigations including survey and excavation. Excavation without permits or in violation of permit conditions is punishable by federal law.

General Mining Law of 1872, as amended

The General Mining Law of May 10, 1872, as amended (30 U.S.C. §§ 22-54 and §§ 611-615) is the major federal law governing locatable minerals. This law allows citizens of the United States the opportunity to explore for, discover, and purchase certain valuable mineral deposits on federal lands that are open for mining claim location and patent (open to mineral entry). These mineral deposits include most metallic mineral deposits and certain nonmetallic and industrial minerals. The law sets general standards and guidelines for claiming the possessory right to a valuable mineral deposit discovered during exploration. The General Mining Law, as amended, allows for the enactment of state laws governing location and recording of mining claims and sites that are consistent with federal law. Federal regulations pertaining to establishing a claim are found at 43

CFR 3830. Surface management of mining activities is defined by 43 CFR 3715 and 3809.

Mining in the Parks Act of 1976

To prevent or minimize the damage caused by activities on mining claims in the National Park System, Congress enacted the Mining in the Parks Act in 1976 (54 U.S.C. §§ 100731-100737). The Act:

- closed all units to claim location, including the last six units of the System that had remained open to claim location (Crater Lake National Monument, Mt. McKinley National Monument, Glacier Bay National Park, Organ Pipe Cactus National Monument, Death Valley National Monument and Coronado National Monument);
- directed the Secretary of the Interior to determine the validity of unpatented claims; and
- directed the Secretary to regulate all mineral activity within all National Park System units in connection with mineral rights on valid unpatented and patented claims.

To implement the Act, the NPS issued regulations at 36 C.F.R. Part 9, Subpart A (36 C.F.R. Part 9A) in 1977. These regulations are applicable to all mineral activities in park units related to unpatented and patented mining claims, and make all mining claim operations in parks contingent on NPS approval of a plan of operations. The 36 C.F.R. Part 9A regulations do not apply to non-mineral activity on patented claims.

National Environmental Policy Act of 1969, as Amended

The National Environmental Policy Act (NEPA) was passed by Congress in 1969 and took effect on January 1, 1970. This legislation established this country's environmental policies, including the goal of achieving productive harmony between human beings and the physical environment for present and future generations. It provided the tools to implement these goals by requiring that every federal agency prepare an in-depth study of the impacts of "major federal actions having a significant effect on the environment" and alternatives to those actions. It also required that each agency make that information an integral part of its decisions. NEPA also requires that agencies make a diligent effort to involve the interested and affected public before they make decisions affecting the environment.

Besides setting environmental planning policy goals, NEPA created the Council on Environmental Quality (CEQ), an agency of the president's office, to oversee the implementation of NEPA. CEQ published NEPA regulations in 1978 (40 CFR 1500–1508). These regulations apply to all federal agencies, and in them, CEQ requires each federal agency to "implement procedures to make the NEPA process more useful to agency decision-makers and the public" (40 CFR 1500.2). Agencies are to review and update these regulations as necessary. The NPS has in turn adopted procedures to comply with the act and CEQ regulations, as found in *Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making*, and the revised NPS NEPA Handbook (2015). The Department of the Interior's NEPA regulations, found in 43 CFR Part 46, also apply to this EA.

National Historic Preservation Act, as Amended (16 USC 470)

The National Historic Preservation Act of 1966, as amended (NHPA), protects buildings, sites, districts, structures, and objects that have significant scientific, historic, or cultural value. The act established affirmative responsibilities of federal agencies to preserve historic and prehistoric resources. Effects on properties that are listed in or are eligible for listing in the National Register of Historic Places must be taken into account in planning and operations. Any properties that may qualify for listing in the

National Register of Historic Places must not be transferred, sold, demolished, substantially altered, or allowed to deteriorate except under conditions that ensure their continued preservation and meet the requirements in 36 CFR 800 (Protection of Historic Properties).

Section 106 of the National Historic Preservation Act

Section 106 requires federal agencies to take into account the effects of their undertakings on properties listed in or eligible for listing in the National Register and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in regulations issued by ACHP.

By the terms of the 2008 Nationwide Programmatic Agreement for Section 106 Compliance between NPS, ACHP, and the National Conference of State Historic Preservation Officers: "The Streamlined Review Process may be used for the acquisition of land for park purposes, including additions to existing parks." The second criterion for use of the Streamlined Review Process (identification and evaluation of all types of historic properties within the project area of potential effect (APE); see Section III.A.2) does not apply to this activity, provided the acquisition does not include any further treatment or alteration of properties, since access to land for inventory and evaluation prior to NPS acquisition may be limited. Any known or potential historic properties on the land acquired should be protected from demolition by neglect. Pursuant to 36 CFR 800.5(a)(2)(vi), demolition by neglect constitutes an adverse effect. If any undertakings proposed in conjunction with an acquisition have the potential to affect historic properties, the Streamlined Review Process may not be used. Streamlined review means that no State Historic Preservation Office (SHPO) consultation is required.

The preferred alternative in this study would authorize the NPS to acquire from willing donors or sellers all tracts within the study area that meet NPS' boundary adjustment criteria (see *Chapter 3: Alternatives* for discussion of the alternatives considered in this study). The preferred alternative does not make any treatment recommendations for any historic properties that may be located on lands within the expansion area. Any treatment recommendations for historic properties would be developed at a later date in consultation with the California SHPO. Accordingly, the streamlined Section 106 review process has been used in this study.

NPS Organic Act

Originally enacted in 1916, the National Park Service Organic Act (Organic Act) applies to all units of the National Park System (System units) and directs the NPS "to conserve the scenery, natural and historic objects, and wild life in System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations" (54 USC 100101). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that NPS must conduct its actions in a manner that will ensure no "derogation of the values and purposes for which the System units have been established, except as may have been or shall be directly and specifically provided by Congress" (54 USC 100101).

These interrelated authorities express the fundamental purpose of the National Park System which is to conserve park resources and values and to provide for visitor enjoyment of these resources and values. The mandate to protect park resources and values is complemented by a statutory prohibition on the impairment of park resources and values. To avoid impairment, park managers are directed to seek ways to avoid and minimize adverse impacts on park resources and values to the

greatest extent practicable. Where there are conflicts between conserving resources and values and providing for enjoyment of them, conservation is to be the predominant goal (NPS 2006). Because conservation remains predominant, the NPS seeks to avoid or to minimize adverse impacts on park resources and values. However, the NPS has discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of a park (NPS 2006, Sec. 1.4.3). Although many actions and activities cause impacts, the NPS cannot allow an adverse impact that would constitute impairment of the affected resources and values unless specifically authorized by Congress. An action constitutes an impairment when its impacts "harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values." To determine impairment, the NPS must evaluate "the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts" (NPS 2006).

National Parks Omnibus Management Act of 1998

The National Parks Omnibus Management Act (and in particular those provisions codified in 54 USC 100702, 100704 and 100706) underscores NEPA and is fundamental to NPS park management decisions. Both acts provide direction for articulating and connecting the ultimate resource management decision to the analysis of impacts, using appropriate technical and scientific information. Both also recognize that such data may not be readily available; therefore, the acts provide options for resource impact analysis should this be the case.

The National Parks Omnibus Management Act directs the NPS to obtain scientific and technical information for analysis. The NPS handbook for *Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making*. states that if "such information cannot be obtained due to excessive cost or technical impossibility, the proposed alternative for decision will be modified to eliminate the action causing the unknown or uncertain impact or other alternatives will be selected" (NPS 2006, Sec 4.4).

Endangered Species Act of 1973, as Amended

This act requires all federal agencies to consult with the Secretary of the Interior or the Secretary of Commerce, depending on the species, on projects and proposals that have the potential to affect federally endangered or threatened plants and animals. The Endangered Species Act requires each federal agency to insure, through the consultation process, that any action authorized, funded or carried out by the action agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of designated critical habitat for listed species (16 U.S.C. § 1536(a)(2). The consultation process may result in the development of reasonable and prudent measures to minimize harm to listed species or critical habitat.

Executive Orders / Director's Orders

Executive Order 11593, Protection and Enhancement of the Cultural Environment

This executive order directs the NPS to support the preservation of cultural properties and to identify and nominate to the National Register of Historic Places cultural properties within a System unit and to "exercise caution. . .to assure that any NPS-owned property that might qualify for nomination is not inadvertently transferred, sold, demolished, or substantially altered."

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

On February 11, 1994, President Clinton issued Executive Order 12898. This order directs

agencies to address environmental and human health conditions in minority and low-income communities to avoid the disproportionate placement of any adverse effects from federal policies and actions on these populations.

Secretarial Order No. 3330, Improving Mitigation Policies and Practices of the Department of the Interior

Secretarial Order No. 3330 recognizes the importance of a landscape-scale approach to identify and facilitate investment in key conservation priorities in a region and the importance of mitigation strategies and measures in project planning and design to maintain natural and culture resource values and to improve the resilience of our nation's resources in the face of climate change.

Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making.

This order sets forth the policy and procedures by which the NPS will comply with NEPA and assigns the roles and responsibilities of NPS organizations and employees for carrying out NPS NEPA obligations. The *NPS NEPA Handbook* (revised 2015) provides an overview of the legal and policy framework that the NPS uses to implement NEPA.

Director's Order 25: Land Protection

This Order articulates the framework for land protection, and the process for the acquisition of land and interests in land, within the authorized boundaries of units of the National Park System.

Director's Order 28: Cultural Resource Management

Director's Order 28 calls for the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship and in accordance with the policies and principles contained in the NPS *Management Policies 2006* (NPS 2006). This order also directs the NPS to comply with the substantive and procedural requirements described in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Treatment of Cultural Landscapes, and the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings. Additionally, the NPS would comply with the NPS Programmatic Agreement with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers. The accompanying handbook to this order addresses standards and requirements for research, planning, and stewardship of cultural resources as well as the management of archeological resources, cultural landscapes, historic and prehistoric structures, museum objects, and ethnographic resources.

Director's Order 77: Natural Resource Protection

The purpose of this document is to provide guidance to park managers for all planned and ongoing natural resource management activities. Managers must follow all federal laws, regulations, and policies. This document provides the guidance for park management to design, implement, and evaluate a comprehensive natural resource management program that will guide other management decisions so park resources are not impaired.

Director's Order 77 directs park management to make decisions, such as where to build facilities, based on knowledge of the park resources and their conditions. A program of natural and social science research including inventory and monitoring should be conducted to help facilitate and provide an accurate scientific basis for management decisions. Managers must establish baseline conditions to be able to monitor or detect changes resulting from management decisions.

NPS Management Policies 2006

The NPS *Management Policies 2006* (NPS 2006) is the basic NPS-wide policy document, adherence to which is mandatory unless specifically waived or modified by the NPS director or certain departmental officials, including the secretary of the interior. Actions under this boundary study / EA are guided by relevant portions of the management policies.

Local and Agency Plans

Joshua Tree National Park General Management Plan, Development Concept Plans and Environmental Impact Statement (1995)

The *Joshua Tree National Park General Management Plan* (GMP) provides a framework for park decision-making; defines priorities and management direction for resource protection, research, and monitoring; and addresses the balance between visitor use and resource protection. Based on these priorities, the GMP establishes management zones within a park and prescribes desired conditions, a range of visitor experiences, and appropriate management activities for each zone. While the 1995 GMP prescribed management zoning of the national monument, it did not specify prescriptions for managing the natural zone in the monument or the 234,000 acres that were added to the park in 1994. This guidance is provided in the subsequent wilderness and backcountry management plan.

Land Protection Plan for Joshua Tree National Park (1996)

NPS *Management Policies 2006* require that each unit of the national park system prepare a land protection plan to determine and publicly document what lands or interests in lands within an authorized boundary need to be in public ownership and what means of protection are available to help achieve the purposes for which the unit was created. A land protection plan guides a park unit's priorities for land acquisition. The *Land Protection Plan for Joshua Tree National Park* was completed in 1986 and then updated in 1996 to encompass an additional 234,000 acres of lands that were added to the park boundary as part of the California Desert Protection Act of 1994.

Joshua Tree National Park and Wilderness Area, Backcountry and Wilderness Plan, Amendment to the 1995 General Management Plan (2000)

The *Backcountry and Wilderness Management Plan, General Management Plan Amendment* accomplishes the two objectives deferred by the 1995 GMP: 1) management direction for the natural zone in the former national monument, and 2) management direction for of all the land added to the park in 1994 as a result of the California Desert Protection Act.

Joshua Tree National Park Foundation Document (2015)

The *Joshua Tree National Park Foundation Document* provides basic guidance for planning and management decisions related to the park. The core components of a foundation document include a brief description of the park as well as the parks purpose, significance, fundamental resources and values, and interpretive themes. The foundation document also includes special mandates and administrative commitments, an assessment of planning and data needs that identifies planning issues, planning products to be developed, and the associated studies and data required for park planning. Along with the core components, the assessment provides a focus for park planning activities and establishes a baseline from which planning documents are developed. The foundation document identified a boundary study as a needed planning document to address the issue of habitat fragmentation and its effects on park wildlife.

California Desert Conservation Area Plan (CDCA), 1980 as amended

The CDCA is a 25-million acre expanse of land in Southern California designated by Congress in 1976 through Federal Land Policy and Management Act. The Bureau of Land

Management (BLM) administers about 10 million acres of CDCA lands. When Congress created the CDCA, it recognized its special values, proximity to the population centers of Southern California, and the need for a comprehensive plan for managing the area. Congress stated that the CDCA Plan must be based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. The study area is within the CDCA. Refer to the feasibility analysis in *Chapter 2: Boundary Adjustment Criteria Evaluation* and the land use description in *Chapter 4: Affected Environment* for a more detailed discussion of the CDCA Plan as it relates to the study area.

Northern and Eastern Colorado Desert Coordinated Management Plan, 2002 (NECO Plan), an Amendment to the CDCA Plan

The *NECO Plan* is an amendment to the CDCA Plan. It is a landscape-scale, multiagency planning effort that protects and conserves natural resources while simultaneously balancing human uses of the California portion of the Sonoran Desert ecosystem. The planning area encompasses over five million acres. The *NECO Plan* also established two Desert Wildlife Management Areas (DWMAs) encompassing 1.75 million acres that are managed as areas of critical environmental concern (ACEC) for recovery of the desert tortoise. Southern Mojave and Sonoran Wildlife Habitat Management Areas (WHMAs) for bighorn sheep were established totaling over one million acres. The *NECO Plan* also combined herd management areas for wild burros and horses; designated routes of travel; identified principles for acquisition of private lands and disposal of public lands; provided access to resources for economic and social needs; and incorporated 23 wilderness areas established by the 1994 California Desert Protection Act in the CDCA.

Desert Renewable Energy Conservation Plan Proposed Land Use Plan Amendment and Final Environmental Impact Statement (DRECP LUPA) October 2015

The DRECP seeks to facilitate renewable energy development in appropriate places in the desert while conserving other resources and uses. The BLM Proposed Land Use Plan Amendment (LUPA) is considered Phase I of the DRECP. The proposed LUPA would amend the BLM *California Desert Conservation Area (CDCA) Plan* as well as the Bishop and Bakersfield Resource Management Plans, specifically related to natural resource conservation and renewable energy development. The LUPA Decision Area includes 10,869,000 acres of BLM-managed lands within the CDCA and Bakersfield and Bishop Resource Management Plans. The study area is within the LUPA Decision Area.

The BLM land use planning designations identified in the DRECP LUPA include:

- Areas suitable for renewable energy development (development focus areas)
- Areas potentially available for renewable energy development (variance process lands)
- Areas to be managed for biological, cultural, and scientific conservation (BLM conservation designations also known as national conservation lands, areas of critical environmental concern, and wildlife allocation areas)
- Areas to be managed for recreational use (special recreation management areas and extensive recreation management areas)
- Areas that will continue to be managed for multiple use without a specified allocation

The Record of Decision for the DRECP LUPA is not signed at the time of completion of this EA. It is anticipated that a Record of Decision will be signed in the near future.

Riverside County General Plan and Zoning Ordinances

The study area lies within Riverside County. Counties have primary authority over land use in privately held unincorporated areas. Counties adopt ordinances to regulate land use activities and to implement goals and objectives in their General Plans. The principal land use plan affecting the private lands is the *Riverside County General Plan* (*General Plan*), which articulates the vision and planning principles for development in Riverside County. The study area is within the Desert Center Area Plan which provides a more focused development plan for the Desert Center area. The three local open space policies defined for Desert Center within the *General Plan* are:

- Encourage clustering of development for the preservation of contiguous open space;
- Work to limit off-highway vehicle use within the *Desert Center Area Plan*; and
- Stipulate that new development must conform to the Desert Tortoise Critical Habitat designation requirements and prescribes land use designations for the area.

Zoning classifications are defined in the Riverside County Land Use Ordinance, Ordinance 348, as amended (Riverside County 2015b). The ordinance details all permitted uses on private property based on the assigned zone classification. ~~For the Eagle Mountain Mine and Townsite, Riverside County adopted specific plans in 1997 to accommodate a non-hazardous waste landfill that was previously proposed for the area. The specific plans have not been updated since the landfill project was abandoned. Specific plans are highly customized policy or regulatory tools that provide a bridge between the General Plan and individual projects, in a more area-specific manner than is possible with community-wide zoning ordinances. The specific plan provides land use and development standards that are tailored to respond to special conditions and aspirations unique to the area proposed for development.~~ Refer to the feasibility analysis for parcel groups in *Chapter 2: Boundary Adjustment Criteria Evaluation* and land use description in *Chapter 4: Affected Environment* for a more detailed discussion of County planning and zoning policies that pertain to study area lands.

Other Related Projects

Eagle Mountain Pumped Storage Hydroelectric Project

In 2014 the Federal Energy Regulatory Commission (FERC) issued a license to Eagle Crest Energy Company (Eagle Crest) for the construction and operation of a pumped storage hydroelectric project. The project will occupy 2,527 acres of private and federal lands on the site of the Eagle Mountain Mine which ceased full-scale operations in 1983. The project will use off-peak energy to pump water from a lower reservoir to an upper reservoir during periods of low electrical demand. Former mining pits will be used for the reservoirs. Eagle Crest will use available power produced by existing and proposed wind and/or solar projects in the area to provide at least a portion of the pumping power to the project. The project will also be able to provide ancillary services to the electric grid, including load following, system regulation through spinning and non-spinning reserve, and immediately available 1,300 megawatts of standby generating capacity (FERC 2014).

Environmental Assessment, possible Plan Amendment ~~Right~~ Right-~~of~~ of-Way for Eagle Mountain Pumped Storage Project (underway)

The Bureau of Land Management (BLM) is preparing possible plan amendments associated with an environmental assessment for the Eagle Mountain Pumped Storage Hydroelectric Project transmission and water supply lines in Riverside County, California. The 30-day scoping process took place in November/December 2015. The project area is

approximately 30 miles west of Blythe, California, and ranging from 5 miles north of Interstate 10 at Desert Center, crossing the interstate from north to south and terminating at the Southern California Edison Red Bluff substation. The environmental assessment will focus on the right-of-way for generator tie lines (i.e. electrical lines connecting energy facilities to the larger electrical grid) and water supply lines, and the possible plan amendment for the sections of the generator-tie and water supply lines that do not fall within designated utility corridors.

CHAPTER 2: APPLICATION OF BOUNDARY ADJUSTMENT CRITERIA

Introduction

This boundary study examines the cultural, historic, and natural significances of the properties to determine how they fit into the thematic context of Joshua Tree National Park. It also examines the potential for lands to address management issues or resource protection.

The study evaluates the properties under consideration according to criteria set forth in Section 3.5 of NPS *Management Policies 2006* (NPS 2006). If the acquisition will be made using appropriated funds, and it is not merely a technical boundary revision, the criteria set forth by Congress in 54 U.S.C. §100506 must be met.

For a property to be included in a boundary expansion that may be necessary or desirable for carrying out the purposes of a park unit, at least one of the three criteria must be met:

> 1. Protect significant resources and values, or enhance opportunities for public enjoyment related to park purposes;
>
> 2. Address operational and management issues, such as the need for access or the need for boundaries to correspond to logical boundary delineations such as topographic features or roads; or
>
> 3. Otherwise protect park resources that are critical to fulfilling the park purposes (NPS 2006).

All recommendations for boundary changes must also meet both of the following criteria from Section 3.5 of the NPS *Management Policies 2006* (NPS 2006):

> A. The added lands will be feasible to administer, considering size, configuration, and ownership costs; the views and impacts on local communities and surrounding jurisdictions; and other factors such as the presence of structures, hazardous substances or exotic species.
>
> B. Other alternatives for management and resource protection are not adequate.

The following section addresses the criteria that must be considered for adjustments to the boundaries of national park units in accordance with §3.5 of NPS *Management Policies 2006*.

Properties Evaluated for Inclusion

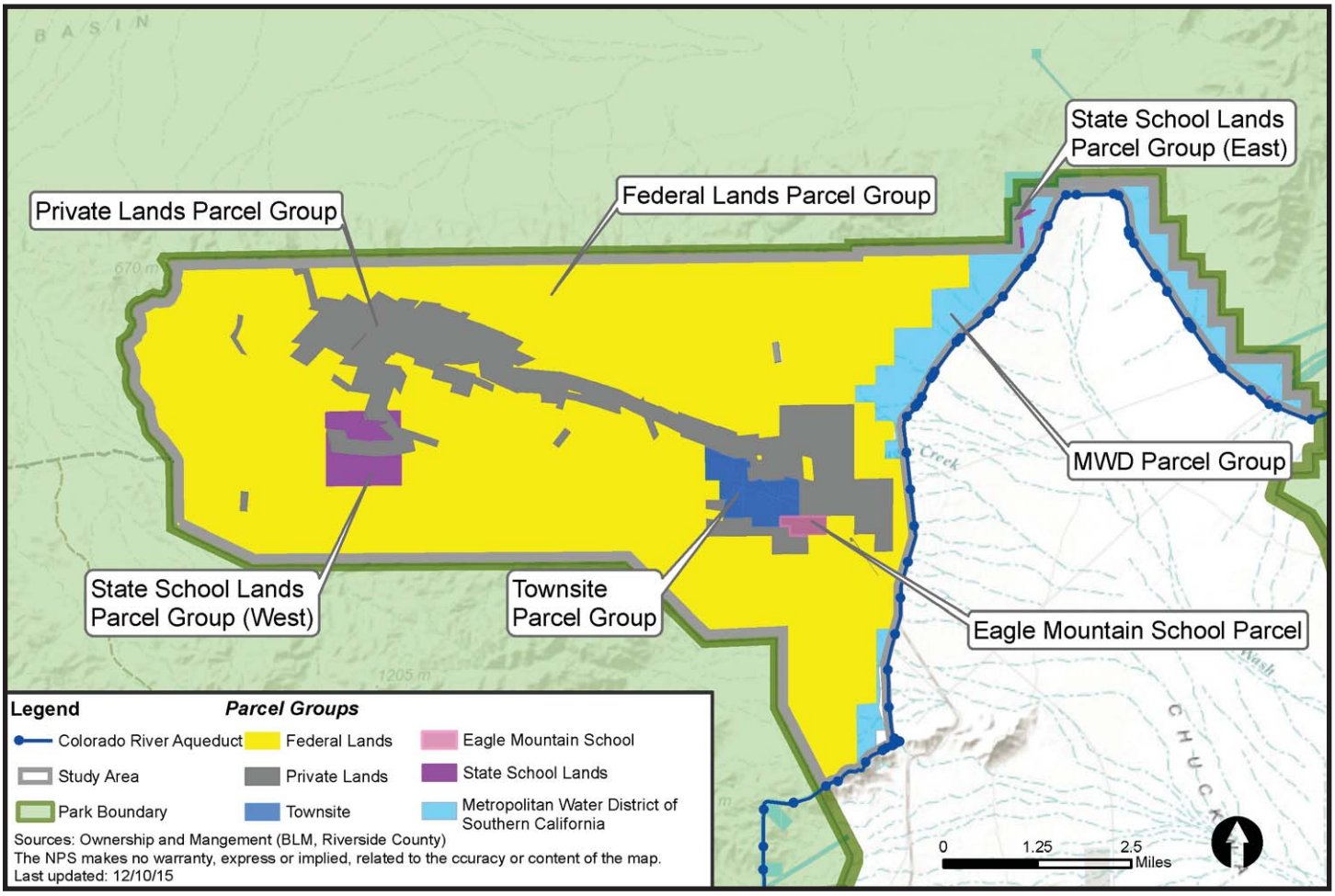
The study includes properties that for the purposes of evaluation have been sorted into groups. For ease of reference, clustered properties are referred to herein as "parcel groups." Each "parcel group" has been evaluated for the presence of significant cultural or natural resources and values related to the park's purpose, as well as feasibility factors such as ownership, use, costs, and threats to the resources. The study area includes six separate parcel groups that are shown on *Map 2-1: Parcel Groups* and described in *Table 2-1: Parcel Groups*.

Table 2-1: Parcel Groups

Parcel Group	Description	Number of Parcels (APN)*	Appx. Acreage
Federal Lands Parcel Group	Includes federal lands under BLM management	166	23,140
Private Lands Parcel Group	Primarily includes privately owned lands that were formally associated with the Eagle Mountain Mine.	42	4,550
State School Land Parcel Group	Includes those parcels held in trust by the State of California for the benefit of the State Teachers' Retirement System and managed by the State Lands Commission	7	~~340~~379
Townsite Parcels	Privately owned parcels associated with the Eagle Mountain Townsite. Some parcels extend beyond the extent of the Townsite patent area (460 acres) identified in Private Law 790	25	500
Eagle Mountain School Parcel	This parcel is owned by the Desert Center Unified School District for operation of the Eagle Mountain School.	1	90
Metropolitan Water District of Southern California Parcel Group	Includes those parcels managed by the Metropolitan Water District of Southern California for operation and maintenance of the Colorado River Aqueduct	30	2,850
Total		271	~31,510~~31,470~~

Source: Riverside County 2015
* In some cases only a portion of a parcel is included in the study area. Specific parcels associated with each group ~~is~~ are included in *Appendix C: Parcel Information*.

Map 2-1: Parcel Groups



The study area lands are important regional ~~migration~~ habitat corridors for desert bighorn sheep and desert tortoise.

Criterion 1: Protect Significant Resources and Values, or Enhance Opportunities for Public Enjoyment Related To Park Purposes

Park purpose and significance statements from the *Joshua Tree National Park Foundation Document (2015)*, as described in *Chapter 1: Purpose and Need*, provide a framework for evaluating whether study area resources would contribute to the protection of significant resources and opportunities to enhance public enjoyment related to park purpose.

> *The purpose of Joshua Tree National Park is to preserve and protect the scenic, natural, and cultural resources representative of the Colorado and Mojave deserts' rich biological and geological diversity, cultural history, wilderness, recreational values, and outstanding opportunities for education and scientific study.*

This purpose statement was derived from the presidential proclamation that established Joshua Tree National Monument in 1936 and all subsequent legislation, including the 1994 California Desert Protection Act which designated the area Joshua Tree National Park. *Appendix A: Presidential Proclamation and Legislative Acts for Joshua Tree National Park* includes the Presidential Proclamation and other legislative acts for Joshua Tree National Park. The following section evaluates how study area lands contribute to the protection of significant resources and public enjoyment opportunities related to park purpose.

Natural Resources Representative of the Colorado and Mojave Deserts' Rich Biological Diversity.

As stated in the park foundation document, "Outstanding examples of Mojave and Colorado Desert landscapes that converge at Joshua Tree National Park create a biologically rich system of plant and animal life characterized by iconic Joshua tree woodlands, native palm oases, and vast expanses of creosote scrub that are uniquely adapted to desert conditions. The park also contributes significantly to the connectivity of open lands and large protected areas across the California desert." The study area contains a rich array of desert habitat representative of the Colorado and Mojave deserts. Of particular importance is the use of the area for the migration of sensitive wildlife.

Significance of the Colorado Desert Ecoregion

The *Desert Renewable Energy Conservation Plan Proposed Land Use Plan Amendment* (DRECP LUPA) (BLM 2015b) recognizes the national significance of the desert ecosystems in the study area and proposes two separate designations to recognize these resources. The western federal lands are proposed as for National Conservation Lands (NCL) while the lands to the east of the Eagle Mountain Mine are proposed to be included in the Chuckwalla Area of Critical Environmental Concern (ACEC). These proposed areas would comprise about 12,500 acres of federal lands within the study area. These proposed designations are discussed further in the feasibility discussion for the federal lands parcel group. *Map 2-8: BLM Proposed Land Use Designations* depicts the proposed NCL and ACEC designations within the study area described in the final environmental impact statement (FEIS) for the DRECP LUPA.

Within the portion of the study area that would be located in the Colorado Desert subarea of NCL, the DRECP LUPA identified numerous significant resource values. There is critical habitat for desert tortoise (*Gopherus agassizii*) and habitat for 60 other special status plants and animals, including the desert bighorn sheep (*Ovis canadensis nelson*). The subarea contains important habitat linkages for terrestrial reptiles, mammals, and burrowing owls, distributed among 14 BLM wilderness areas from the

Colorado River to Joshua Tree National Park. Mountain cliff sites in designated BLM wilderness areas in the subarea are important to maintaining robust golden eagle populations. The DRECP LUPA recognizes the significance of Sonoran old-growth microphyll woodlands that provide the highest amount of above ground biomass of any plant community in the Sonoran Desert outside of the Colorado River riparian zone. The woodlands constitute a reservoir for carbon sequestration (*Map 4-6: Microphyll Woodlands* in *Chapter 4: Affected Environment* depicts microphyll woodlands in the study area). The complex physical structure and cover of the woodlands provide essential habitat for neotropical migratory birds crossing the California deserts to reach nesting sites in the Pacific Coast states and Alaska. The Chuckwalla ACEC is noted as containing one of the best examples in California of diverse Sonoran Desert plant communities of creosote, ocotillo, and nine species of cacti, in addition to providing critical habitat for an area that contains some of the highest densities of desert tortoise (BLM 2015a).

Habitat and Migration Corridors

The study area contains important habitat and functions as a significant migration corridor for wildlife in Joshua Tree National Park and other protected areas in the Mojave and Colorado deserts. These functions directly contribute to protection of biological diversity identified in the park purpose. There has been a growing awareness of the need to protect broader landscapes to sustain wildlife and natural habitat, particularly in light of ecosystem stressors such as development, and warming temperatures and rainfall patterns associated with climate change (DeFries et al. 2007; Hansen et al. 2014). Development associated with renewable energy projects and urbanization can result in habitat fragmentation. Movement through contiguous habitat is essential to wildlife survival, whether it be the day-to-day movements of individuals seeking food, shelter, or mates, dispersal of offspring to find new homes, or seasonal migration to find favorable conditions. Movement is also essential for gene flow, for recolonizing unoccupied habitat after a local population goes extinct, and for species to shift their geographic range in response to global climate change (Hansen and DeFries 2007). Protection of habitat and migration corridors is an important adaptation strategy for mitigating the effects of climate change on biological resources (Overpeck et. al. 2013)

Desert Tortoise. The study area is important to the linkage of habitat for the desert tortoise (*Gopherus agassizii*), a threatened species that is identified as a fundamental resource to Joshua Tree National Park (BLM 2016, USFWS 2011a). Some of the most protected desert tortoise habitat in the California desert is found in the park, as park tortoises are relatively free of many stressors such as habitat fragmentation and loss, off-highway vehicle use, large scale development, and predation from feral dogs and ravens. However, the number of tortoises in Joshua Tree National Park has decreased significantly in the last two decades (Lovich et al. 2014).

The U.S. Geological Survey developed a quantitative habitat model for the range of the Mojave population of desert tortoise, which includes portions of the Colorado Desert in California (Nussear et al. 2009). See *Map 2-2: Desert Tortoise Habitat Connectivity*. The model provides a measure of the statistical probability of desert tortoise occurrence and a geospatial depiction of known and potential desert tortoise habitat. To date, the U.S. Geological Survey model is viewed as the best available data for predicting desert tortoise occurrence on a landscape scale; however, it does not account for site-specific and anthropogenic conditions across the landscape that affect habitat potential at a local scale. This model depicts the importance of the study area lands for broader landscape connectivity.

The eastern end of the study area, between the Desert Sunlight Solar Farm (Desert Sunlight) and the Eagle Mountain Mine, contains some of the region's most important desert tortoise habitat and provides a physical connection between the Pinto Basin and Chuckwalla Valley tortoise populations (Nussear et al. 2009, USFWS 2011b). This connection is made in one of the key remaining north/south regional habitat corridors, linking Joshua Tree National Park and valuable habitat to the south in the Orocopia and Chuckwalla Mountains. While the corridor is already fragmented in some areas by existing roads and development, the portion in the study area is relatively free of development and other disturbances, well protected, and contains a known population of desert tortoises. This corridor was shrunk through the development of Desert Sunlight, placing importance on protection from further reduction and on maintaining genetic connectivity.

One of the primary threats to the survival of desert tortoise is ongoing habitat loss, fragmentation, and degradation. Threats to habitat connectivity include urbanization, habitat conversion from frequent wildfire, and other activities that modify the landscape (USFWS 2011a). This species occupies large home ranges, making contiguous habitat an important component of their survival. As identified in the *Revised Recovery Plan for the Mojave Population of the Desert Tortoise (Gopherus agassizii)*, another factor integral to desert tortoise recovery is "maintaining the genetic variability of the species and sufficient ecological heterogeneity within and among populations to allow tortoises to adapt to changes in the environment over time (USFWS 2011a)."

Desert Bighorn Sheep. The study area also serves as an important genetic and demographic corridor for desert bighorn sheep (*Ovis canadensis nelson*), which is a BLM California Sensitive Species, a State Fully Protected Species, and a State Game Species (BLM 2002). One of the most genetically diverse bighorn populations resides in the Eagle Mountains. Research and genetic testing has identified the corridor from the Eagle Mountains across study area lands to the Coxcomb Mountains to be critically important for maintaining connectivity among desert bighorn sheep herds, *See Map 2-3: Bighorn Sheep Habitat Connectivity* (Creech et al. 2014, Epps, et. al. 2010). Within Joshua Tree National Park, the bighorn sheep population in the Coxcomb Mountains is considered most important to maintaining meta-population connectivity, while those in the Eagle Mountains are second most important. Among all existing bighorn herds in the greater Mojave Desert, both of these populations rank in the top third in terms of importance to bighorn meta-population connectivity (Creech et al. 2014, Epps et al. 2007). Herds of bighorn sheep currently travel through study area lands disturbed by the Eagle Mountain Mine. However, the current mining of aggregate within the study area is small in scale with relatively little disturbance to bighorn present in the project area. A 2010 survey of wildlife in and around the study area conducted to inform the planning for the proposed Eagle Mountain Pumped Storage Hydroelectric Project identified 51 desert bighorn sheep were seen in six different locations (Wildlife Research Institute 2010).

As with the desert tortoise, one of the most significant threats to desert bighorn sheep is the loss and fragmentation of habitat (63 FR 13136; USFWS 2000; Wehausen 2006). Habitat fragmentation has resulted in loss of genetic diversity (Epps et al. 2005) as well as reductions in fitness and vigor making bighorn sheep more vulnerable to stressors such as disease, drought, and predation. The proposed Eagle Mountain Pumped Storage Hydroelectric Project would be located within the Bighorn Sheep migration corridor between the Eagle and Coxcomb mountains. The introduction and spread of pneumonia in bighorn populations to the north of Joshua Tree National Park, with the potential

for spread to the park's populations, has added concerns and the need for protecting the viability and genetic links between remaining populations.

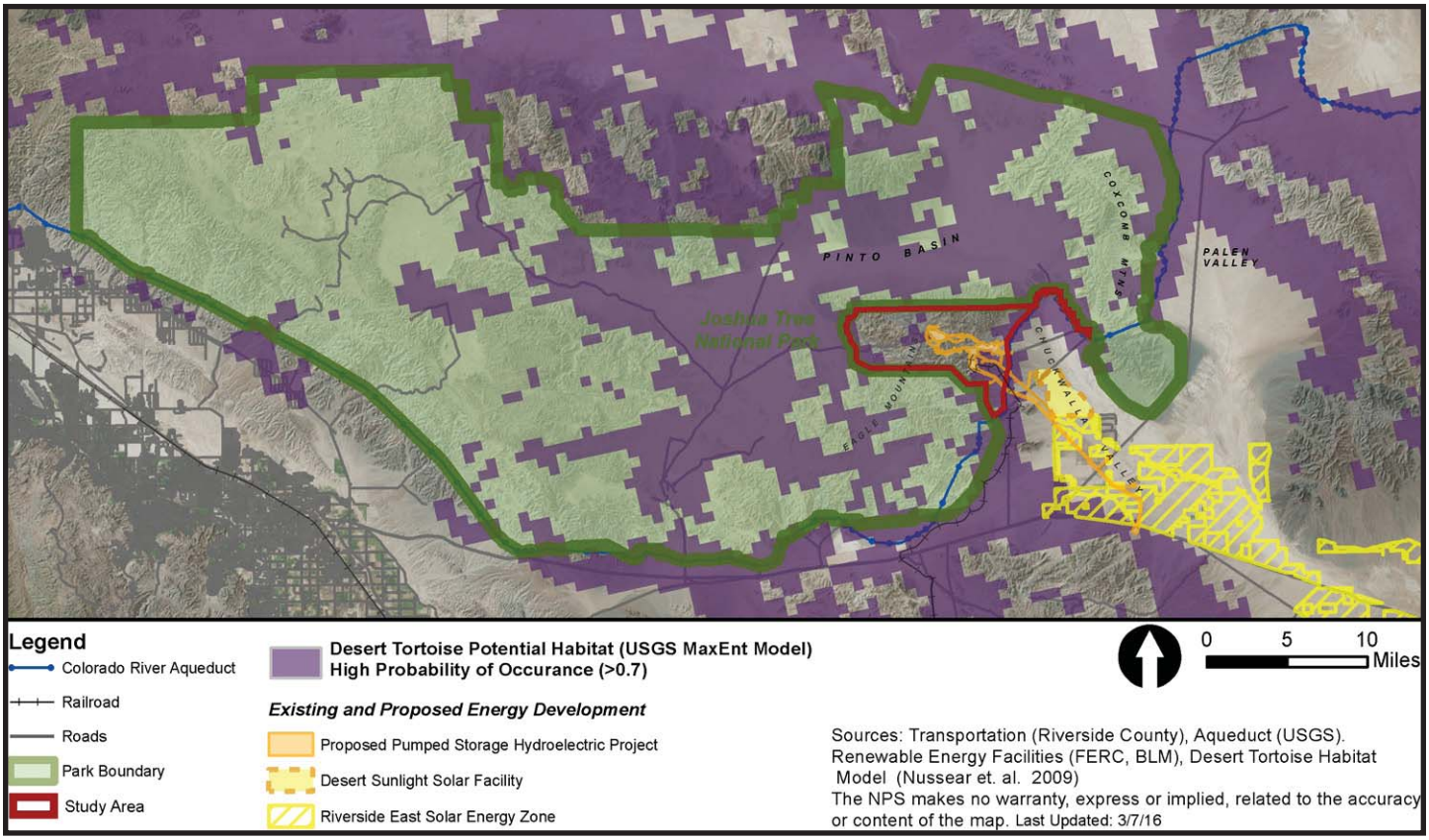
Other Wildlife. In addition to the habitat migration corridors for desert tortoise and bighorn sheep, the study area contains ideal habitat for other wildlife. For example, golden eagles are known to nest in the Eagle Mountains, both within the study area and surrounding mountain systems (Wildlife Research Institute 2011). The BLM has identified three nesting sites on BLM lands within the study area. As part of its July 7, 2010 filing, Eagle Crest Energy Company provided results from golden eagle surveys that took place 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 and near the study area. Five golden eagles were seen; other species observed included: common ravens, great horned owls, a long-eared owl, an osprey, prairie falcons, red-tailed hawks, Swainson's hawks, and turkey vultures (Wildlife Research Institute 2010).

Parcel Group Analysis - Natural Resources Representative of the Colorado and Mojave Deserts' Rich Biological Diversity.
The resource values associated with this area of park significance are primarily found within the federal lands parcel group managed by the BLM. The majority of the federal lands are undisturbed. A GIS analysis of vegetation data indicated that approximately 6% of the federal lands are disturbed lands that have had previous mining activities. Private lands south and west of the Eagle Mountain Mine and the State School Lands parcels south of the mine are also largely undisturbed. Together these lands form large contiguous areas of open space with undisturbed habitat.

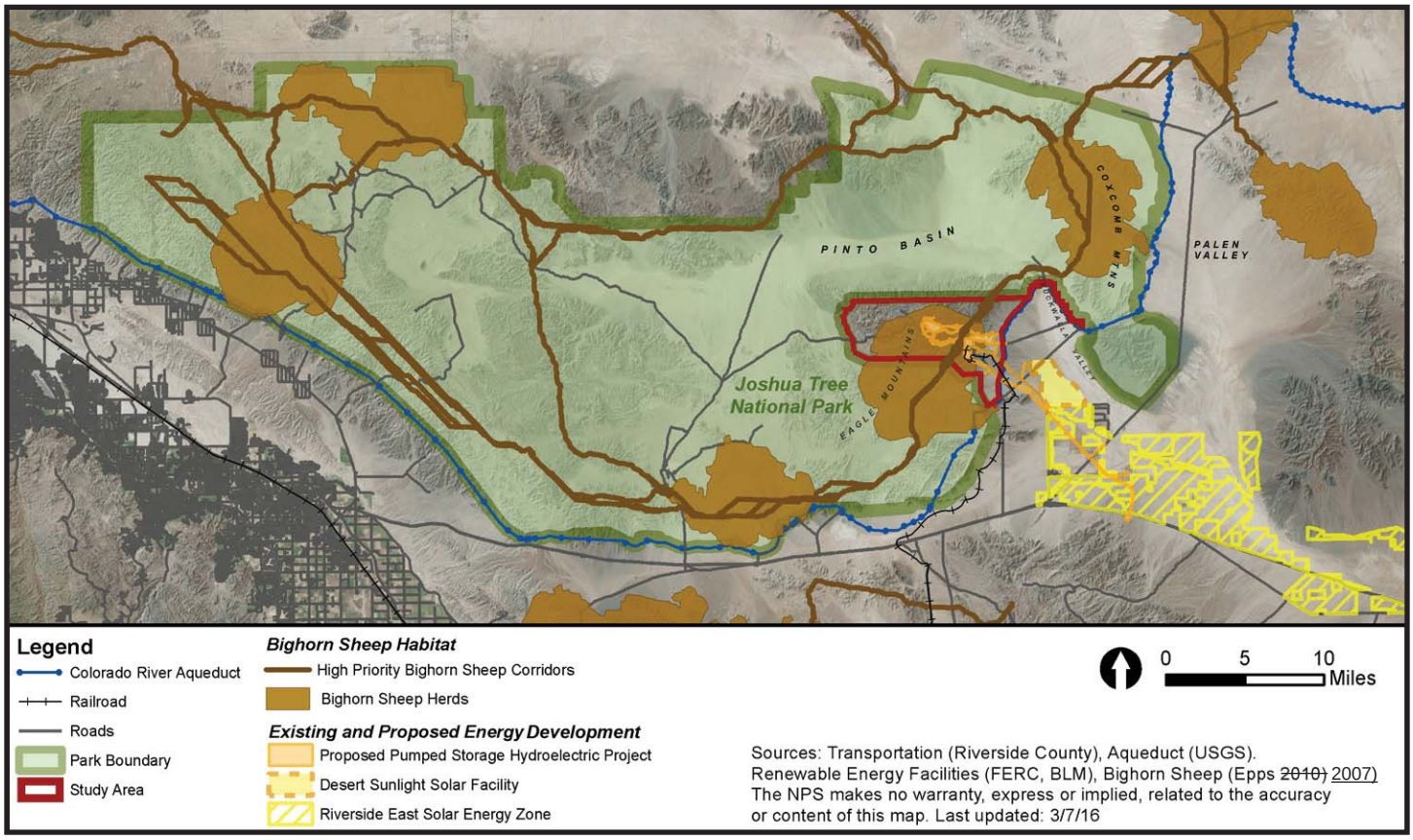
Lands associated with the Eagle Mountain Mine have been heavily impacted by prior mining activity and infrastructure (roads, power lines, and pipelines that supported mining), effectively reducing habitat value for wildlife (BLM 2011). However, recent studies have shown that the preferred bighorn sheep migration route from the Eagle Mountains to the Coxcomb Mountains crosses through the former mine lands (Epps et. al. 2010). Bighorn sheep tracks, beds, and scat were also documented in and around the Townsite area in surveys conducted for the environmental impact analysis for the landfill proposal (Riverside County and BLM 1996). Desert tortoise habitat is found throughout the study area on both private and public lands. However, the highest quality habitat is in the easternmost portions of the study area, between the Colorado River Aqueduct and the Eagle Mountain Mine on lands within the federal lands, Metropolitan Water District of Southern California, and private lands parcel groups (Nussear 2009).

All of the study area parcel groups contain habitat, including important wildlife corridors, which support the rich biological diversity of the Colorado and Mojave. The federal land parcel group contains mostly undisturbed lands and therefore has the highest quality habitat. However, former mine lands on private land contain an important migration corridor for desert bighorn sheep, despite the extensive disturbance.

Map 2-2: Desert Tortoise Habitat Connectivity



Map 2-3: Bighorn Sheep Habitat Connectivity



Cultural Resources Representative of the Colorado and Mojave Deserts

The California Desert Protection Act of 1994 changed the designation of Joshua Tree National Monument to Joshua Tree National Park enlarging the boundaries to include "contiguous federal lands of national park caliber." The legislation expanded the park purpose recognizing a wide array of superlative values including archeological, cultural, and historical. As stated in the *Joshua Tree National Park Foundation Document* significance statements, "Joshua Tree National Park preserves a rich array of prehistoric, historic, and contemporary resources that demonstrate the integral connection between desert ecosystems, land use, and human cultures. Encapsulated in this significance statement is a wide array of archeological resources, historic structures, and cultural landscapes." Three main archeologically significant time periods are represented within the park: Lake Mohave-Pinto; Saratoga Springs; and Protohistoric. Ethnographically, four Native cultures are associated with the land area in and around Joshua Tree National Park: the Cahuilla; Serrano; Chemehuevi; and Mohave.

Joshua Tree National Park has five historic sites that are actively interpreted by the park and represent important relationships between human uses of the desert ecosystem. These include ranching, mining, milling, and homesteading sites of late 1800s through early 1900s California: Lost Horse Mine and Mill; Ryan Ranch; Keys Ranch; Wall Street Mill; and Barker Dam. Other historic resources are located throughout the park, and are typically associated with ranching, mining, and homesteading.

Cultural resources within the study area provide an excellent opportunity to protect and interpret historic and prehistoric resources that demonstrate the integral connection between desert ecosystems, land use, and human cultures.

Archeological and Ethnographic Resources

The study area likely has ethnographic importance to all of the four native cultures that are currently associated with the national park. In addition to these four groups, the study area is also important to La Cuna de Aztlan Sacred Sites Protection Circle, which identifies associated sacred sites within the area. Comprehensive surveys of the area for archeological sites have not been completed. However, archeological sites have been identified in surveys for various development projects in the region. These surveys have identified isolates including lithic scatters, ceramic scatters, prehistoric trails, rock rings, and other isolated features (ASM Affiliates 2011b; ASM Affiliates 2009b; RECON 1991). Many archeological sites related to historic uses, particularly from former mining activities, are apparent as well. Common artifacts include tin cans and old mining claim posts. These resources contribute to the significance of the Joshua Tree National Park in their demonstration of a long history of human use. The area remains important to ethnographic groups today. With the area's long history of human use, the study area also provides potential for greater scientific discovery and understanding of past lifeways.

Historical Resources

Eagle Mountain Mine and Townsite. The most prominent historic resources within the study area are the Eagle Mountain Mine and Townsite. These resources expand on mining history themes currently interpreted at Joshua Tree National Park, providing a 20th century component to mining in the California desert. While in full operation, the Eagle Mountain Mine was the largest iron mine in the western United States (Force 2001). It has also been identified as one of the largest open pit mines in the United States (Dilsaver 2015; Goin and Raymond 2004).

The presence of iron was recognized by the earliest prospectors in the Eagle Mountain area. Jack Moore discovered iron ore deposits in 1881 while prospecting in the area. The Southern Pacific Railroad later took interest in the iron ore in 1912 when E.E. Harriman acquired claims and formed the Iron Chief Mining Company. Harriman never actually developed the mine which did not occur until industrialist Henry J. Kaiser pursued the acquisition of the patented claims in 1944 in search of iron ore to supply his recently built steel mill in Fontana, California. At the time, the Fontana steel mill was the only fully integrated steel mill operation on the West Coast. The steel mill was approved by the federal government in 1942 following the Japanese attack on Pearl Harbor. Federal approval and financing of the mill was justified largely to supply steel for the extensive wartime construction industries, primarily ship building. However, prior to the attack on Pearl Harbor in 1941, Kaiser had already recognized the need for a steel mill to supply the growing residential and commercial construction markets on the west coast (Anicic 2006). The Eagle Mountains contained one-third of the state's iron reserves. Production in the mine began in 1948 and continued until the steel mill closed in the early 1980s as result of lower cost foreign steel and iron ore (Anicic 2006, Cox 1996; Goin and Raymond 2004, Dilsaver 2015).

Because of the Eagle Mountain Mine's remote location, Kaiser planned the construction of a mining camp to house workers. A report on the mine conducted by the Bureau of Mines in 1956 describes what is now known as the Townsite as a "model camp with all modern conveniences." The "camp" included homes, which had modern comforts such as air conditioning, dormitories, a mess hall, a commissary, post office and recreational facilities. In 1956 the population of the Townsite was 600. At its height the Townsite was home to 3,700. The camp was designed to be attractive not just to mine workers, but to their families, as well. Lawns had sprinkler systems and amenities such as swimming pools, playgrounds and recreation centers were provided. A commercial district contained a bank, small shopping center, medical facilities, and a service station. Schools were constructed in 1956 and 1962. Former residents described life in the town as idyllic, although single men working at the mine were noted as frustrated by the dormitory housing and prohibitions such as entertaining women in the dormitories (Goin and Raymond 2004). With the exception of a few, most residents of the Townsite were forced to move elsewhere when mining operations ceased in 1983. A small repopulation occurred when a prison was operated in the former commercial area of the Townsite. Employees of the prison occupied portions of the Townsite until the prison closed in 2003. Only a few residents, employees of Kaiser Eagle Mountain, currently reside at the Townsite. Many structures at the Townsite have been removed or boarded up due to lack of use. However, some buildings remain and the overall arrangement and pattern of the site is still quite apparent on the landscape.

In 1995 the Bureau of Land Management and Riverside County contracted assessments of eligibility for the National Register of Historic Places for the Eagle Mountain Mine and Townsite as part of the environmental compliance process for the proposed solid waste landfill. The assessment of eligibility for the Eagle Mountain Mine noted the mine's potential significance in regards to its role in iron ore mining industry in California, the Unites States, and the World. The mine was considered at the forefront of technology and employed the latest advances in equipment. It was the largest open pit mine in the United States during the 1960s; it contained the largest pelletizing plant in the world; and was the first mine to use 100-ton semitrucks for hauling ore. The assessment also noted potential significance of the mine in its connection to industrialist Henry J. Kaiser. The evaluation did not find the Eagle Mountain Mine eligible for listing in the National Register of Historic Places. At the time the assessment was conducted the mine was not yet 50 years old and therefore did not meet the eligibility criteria. Any property less than fifty years old must be determined of exceptional importance to meet

eligibility requirements for listing in the National Register of Historic Places. The mine assessment also noted that much of the ore processing equipment was removed in the 1980s affecting overall integrity (Cox 1996).

A separate assessment, a Class III cultural resource inventory, was conducted for the Eagle Mountain Townsite as part of the environmental impact statement for the proposed landfill. This assessment found that there were no significant historical resources at the Townsite (Schmidt 1995).

The Eagle Mountain Mine and Townsite are now more than 50 years and will be reevaluated for potential eligibility for listing in the National Register of Historic Places as a State Historic Preservation Office requirement for the proposed pumped storage hydroelectric project. Structures, constructed landscapes, and artifacts within the study area related to the Eagle Mountain Mine's operations provide an opportunity to convey the cultural contribution and story of Henry J. Kaiser and the Kaiser Steel Corporation and mining in the 20th century.

Parcel Group Analysis - Cultural Resources Representative of the Colorado and Mojave Deserts

All of the parcel groups within the study area, with the exception of the Metropolitan Water District of Southern California Parcel Group, likely contain some aspect of cultural resources representative of the Colorado and Mojave deserts as they relate to the purpose of Joshua Tree National Park. The federal and private land parcel groups contain evidence of past human uses. Most visibly evident are the artifacts and landscape changes associated with the long history of mining in the area. The area broadly has ethnographic importance to American Indian tribes with ties to Joshua Tree National Park. The federal lands have not been comprehensively surveyed. Those surveys that have been completed have mostly been in and around areas with previous disturbance associated with the Eagle Mountain Mine and Townsite.

Historic resources related to the Eagle Mountain Mine and Townsite are primarily located on private lands. However, some features are located on adjacent BLM-managed federal lands. The federal lands also contain evidence of mining history that occurred prior to the establishment of Joshua Tree National Monument in 1936 (Hardesty and Smith 2009).

Aerial view of the Eagle Mountain Townsite (1956). Bureau of Mines, U.S. Department of the Interior.

Aerial view of the Townsite in 2011. Photo by Ecoflight.

Vacant Townsite homes (2002). Photo courtesy of Roy Hooper.

In contrast, occupied homes directly across the street ~~circa~~ (2002). Photo courtesy of Roy Hooper.

Trailer housing during active use of the Townsite. Date unknown. Photo courtesy of Roy Hooper.

View of processing area at the Eagle Mountain Mine, looking east toward the North and South pits (1956). Bureau of Mines, U.S. Department of the Interior.

Remnants of processing facilites at Eagle Mountain Mine (2002). Photo courtesy of Roy Hooper.

Children selling lemonade in the Eagle Mountain Townsite (1982). Photographer: Mike Mullen. Herald Examiner Collection/ Los Angeles Public Library.

Eagle Mountain Townsite commercial area (1982). Photographer: Mike Mullen. Herald Examiner Collection/ Los Angeles Public Library.

Outstanding Opportunities for Education and Scientific Study

The Presidential Proclamation that established the park in 1936 recognized objects of scientific interest. The Foundation Document further articulates that, "Joshua Tree National Park offers unparalleled opportunities for research of arid land ecosystems and processes, adaptations of and to desert life, sustainability, and indications of climate change. The proximity of the park to urban regions of Southern California and Nevada enhances its value for scientific research and education." The Eagle Mountain area could provide new opportunities to conduct research on the restoration of ecological communities, wildlife habitat values, and cultural resources.

Some vegetative recovery and re-establishment is occurring on large piles of waste rock that have not been disturbed for decades. There is potential interest in researching this successional process in desert ecosystems.

Parcel Group Analysis Outstanding Opportunities for Education and Scientific Study

Most of the parcel groups would provide some measure of opportunities for research and educational opportunities related to natural or cultural resources. For the private land and Townsite parcel groups, permission would need to be obtained from existing landowners.

Opportunities to Enhance Public Enjoyment Related to Park Purpose

Accessible and Diverse Visitor Opportunities

Joshua Tree National Park provides accessible and diverse opportunities in a remote desert to large and burgeoning urban populations. Some areas of the park are within a two-hour drive from the Los Angeles and San Diego metropolitan areas. In 2015 visitation reached two million. The demographics of surrounding communities are also evolving with population growth being the highest in the Coachella Valley near the southern boundary of the park where visitor facilities, including trailheads, are minimal. The study area could provide additional access to lands in the southeastern region of the park.

Current visitation to the study area is sparse. Members of a local mining club have unpatented claims in the area and conduct group outings. Other visitors explore the area on all-terrain vehicles. Existing infrastructure within the study area such as roads and facilities would provide access for visitors to the site within minimal new construction. Such infrastructure could help address current recreational demands at Joshua Tree National Park. For example, the study area could provide new opportunities for biking. Currently, biking on roads within the existing park boundary is unsafe and inadequate due to road design (narrow shoulders), road surface quality (deteriorated pavement), and road signage (driver and biker education). Mountain biking has also grown in popularity. However, mountain bikers express concern regarding lack of single track mountain biking trails and very limited overall mountain biking opportunities. Bicycling is prohibited in wilderness areas, which comprise much of Joshua Tree National Park. Within the Townsite and former mining areas, there are many paved and dirt roads that could potentially accommodate more biking opportunities allowing the park to provide this opportunity without impacting more remote wilderness areas of the park.

The study area could provide the national park with opportunities to expand camping capacity. Currently campsite capacity averages around 80% full during peak visitation months. Seasonal crowding is common. Formalizing camping at the west end of the study area, near Joshua Tree National Park wilderness, could potentially help mitigate some ongoing impacts to historic resources all-terrain vehicle use in the area. For example, it may help protect cultural resources such as Grub Stake Cabin located in the northwestern end of the study area which has been impacted by visitors to the area.

Interpretive opportunities are significant given the area's rich history. The dramatic landscape

changes evoke an industrial mining landscape that is in stark contrast with historic mining sites currently interpreted in the park. The Eagle Mountain Mine and Townsite was featured in the book "*Changing Mines in America*" (Goin and Raymond 2004), because of its compelling visual appearance and cultural interest. Many former industrial landscapes are featured in heritage areas and other historic sites that attract many annual visitors. Goin and Raymond note that in the 19th century, middle class tourists visited mines and other industrial sites as much as they toured conventional scenic landscapes such as Niagara Falls or Yosemite (Goin and Raymond 2004).

Parcel Group Analysis - Accessible and Diverse Visitor Opportunities. Existing public enjoyment opportunities are primarily confined to the federal lands parcel group where visitors can access backcountry areas via Black Eagle Mine Road from the national park. Black Eagle Mine Road also extends through to Desert Center. However, it is closed to the public where it crosses private lands.

Although public enjoyment of the federal lands is somewhat limited at this time due to the remote location and limited access, the federal lands parcel group offers excellent opportunities for backcountry camping, hiking, and night-sky viewing. The area also provides interpretive opportunities with regard to historic mine sites, dark night skies, and past uses of the area by native cultures.

The private land parcel group and Townsite parcel group have the greatest potential for public access since these lands contain existing paved roads located a short distance from Interstate 10. Within the Eagle Mountain Mine and Townsite lands are numerous paved and unpaved roads. However, the private land and Townsite parcel groups are currently fenced or otherwise closed to general public access. If at some point in time these areas became open to public access or available for inclusion in the park boundary, they would offer interpretive and recreational opportunities. The Metropolitan Water District of Southern California parcels support infrastructure related to the Colorado River Aqueduct and feature limited opportunity for public enjoyment.

Protection of Wilderness Values

Outside of the disturbed mine areas, the study area contains pristine and untrammeled lands that abut Joshua Tree National Park wilderness areas. The congressionally designated Joshua Tree Wilderness comprises approximately seventy-five percent of Joshua Tree National Park. Between the original wilderness designation in 1976, the lands added through the California Desert Protection Act of 1994, and through the passage of public law P.L. 111-11 in 2009 Joshua Tree Wilderness currently totals 595,364 acres, with 70,557 acres of potential wilderness and 402 acres of proposed wilderness. Collectively, 84% of the park is designated, proposed or potential wilderness. *Map 2-4: Wilderness and Roadless Areas* conveys existing wilderness areas and roadless areas located within the study area.

The park's wilderness provides opportunities for primitive recreation and solitude in wild settings. Wilderness access is limited to hikers, since no motorized equipment is permitted and thus vehicles and bicycles are not allowed. The wilderness areas adjacent to the study area are some of the most pristine in the park. Values include dark night skies, excellent air quality, and natural quiet, all of which could be affected by proposed future uses of the area. Inclusion of these lands within the national park boundary would ensure a greater degree of protection of the park's wilderness values.

Areas adjacent to existing park wilderness contain roadless areas with wilderness values. In 1979 as part of the California Desert Conservation Area Plan development, BLM conducted a comprehensive wilderness inventory of the desert region, including two separate areas in the Eagle Mountains. The California Statewide Wilderness Study Report published in 1990 proposed final recommendations and a Record of Decision for the study was published in 1991. Portions of the

61,000-acre Eagle Mountains Wilderness Study Area (51,434 acres) were ultimately recommended as wilderness while another 7,028 acres of this area were not recommended for wilderness (BLM 1990; BLM 1991).

The recommended wilderness area included some lands along the southwestern boundary of the study area. The primary reasons that the area was recommended as suitable for wilderness was because the area: 1) possessed outstanding wilderness values; 2) was adjacent to existing wilderness in Joshua Tree National Monument; and 3) possessed numerous special features that would benefit from wilderness designation. Wilderness values ascribed to the area included opportunities for solitude, primitive and unconfined recreation and the area's diversity of landforms. The study also identified the Eagle Mountains as a natural extension of the outstanding diversity of desert landscapes protected on surrounding national park lands. Special features noted included: habitat for desert tortoise; potential occurrence of rare plant species; and the existence of cultural values (BLM 1991). Almost all of the recommended wilderness areas were designated wilderness when they were added to Joshua Tree National Park in 1994. The areas not recommended for wilderness were those areas directly adjacent to Black Eagle Mine Road. They were determined unsuitable primarily because of mining claims and the presence of former mining activities on the landscape (BLM 1991).

Parcel Group Analysis - Protection of Wilderness Values. Some portions of federal land parcels adjacent to the park boundary contain wilderness values as identified in previous studies. The areas closest to the park boundary and away from Black Eagle Mine Road are most pristine. The areas have also been identified as primarily roadless in recent inventories of roadless areas. Protection of these lands would increase protection of wilderness values on adjacent park lands.

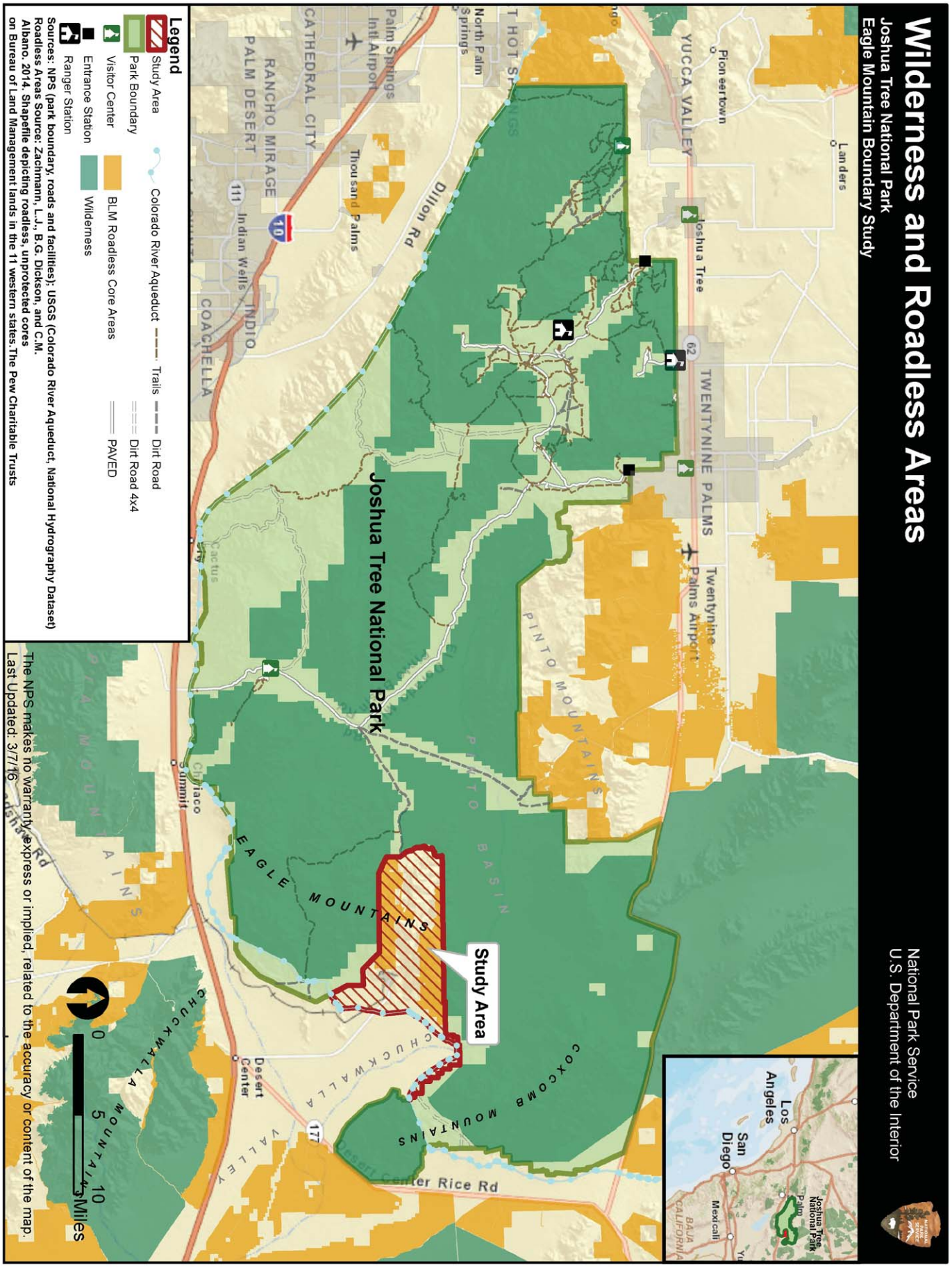
Scenic Resources

Geologic, climatic, and ecological processes create scenic landscapes unique to deserts and fundamental to the character of Joshua Tree National Park. Despite visual disturbances from previous mining activities, much of the study area contains scenic landscapes visible from Joshua Tree National Park. Protection of the Bureau of Land Management (BLM) lands adjacent to Joshua Tree National Park wilderness would protect the natural and untrammeled character of the park's designated wilderness areas.

BLM conducted an extensive visual analysis of the area in completing the environmental compliance documentation for the proposed Eagle Mountain Landfill. In the visual analysis, the BLM notes that disturbed areas in the eastern portion of the study area are shielded from view by the western reaches of the Eagle Mountains. From the east, the visual disturbance from mining including the Townsite development, large tailing piles, and former mining pits dominate the landscape.

Parcel Group Analysis – Scenic Resources. Portions of the federal land parcel group closest to the national park boundary contain highly scenic landforms. The private land and Townsite parcel groups contain developed areas where disturbance is highly visible. These areas have greater interest for cultural tourism.

Map 2-4: Wilderness and Roadless Areas



Dark Nights skies at Joshua Tree National Park.

Mining demonstration by local mining group on BLM-administered lands.

Mountain scenery from the BLM-administered lands.

Criterion 2: Addresses Operational and Management Issues

Including the study area lands within the national park boundary would address a number of operational and management issues including: improved access for visitors and NPS staff to this remote area of the park and a more logical boundary delineation.

Park staff could have greater access to study area lands from the west through the Black Eagle Mine Road, which connects to the Cottonwood Springs visitor and administrative area within the park. A large boulder blocks access along Black Eagle Mine Road from the park, approximately about two miles east of the national park boundary. *See Map 2-5: Roads and Access.*

Increased access could open up opportunities for additional patrols and research opportunities related to desert succession, bighorn sheep and desert tortoise. Roads connecting Interstate 10 to the former Eagle Mountain Townsite are paved and in good condition. These areas can be easily accessed from Interstate-10.

Formerly part of the national park, the study area is bounded on three sides by parklands. Including these lands in the boundary would create a more logical boundary delineation that is easily identified by park staff and potential visitors to the area.

Parcel Group Analysis - Addresses Operational and Management Issues such as Access and Boundary

The federal lands parcel group is directly adjacent to Joshua Tree National Park. The federal lands and western State School Lands are currently accessible by Black Eagle Mine Road whose western terminus is located within the park. However, the current condition of this road, which is unmaintained and passable only by four-wheel drive vehicle, makes access lengthy and potentially unsafe. Some maintenance improvements could provide safer access along this road, making it easier for park staff to access and study the area's resources.

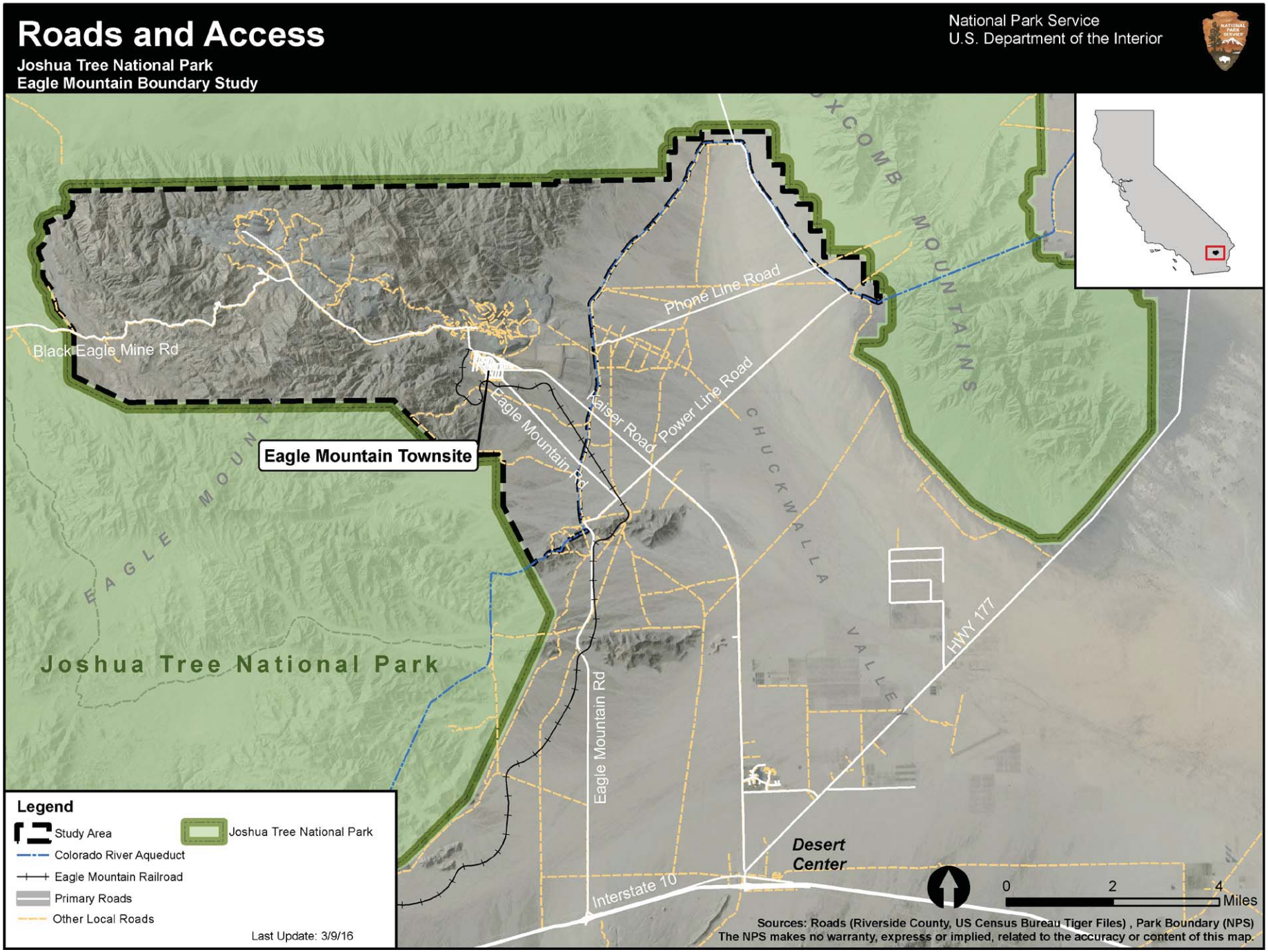
The private land parcels to the east and Townsite area contain a number of paved roads that can be more conveniently accessed from Interstate 10. These lands are currently closed to the public. However, if they became available to NPS for park management they would greatly increase access to the area while avoiding impacts to the more remote, pristine areas in the western portions of the study area. Currently, it can take park staff 90 minutes to two hours to access the area. Access from the Cottonwood visitor and administrative area by vehicle to the study area via I-10 would be a shorter, 40-minute drive along paved roads.

The 1936 park boundary extended to the right-of-way for the Colorado River Aqueduct. The western edge of the Metropolitan Water District of Southern California parcel group would form a logical boundary delineation for park management today.

If the private land, Townsite, federal land and State School Land parcel groups were added to the boundary, it would create a more logical boundary delineation making it easier for NPS to prevent the encroachment of unauthorized activities on park lands.

Criterion 3: Otherwise Protect Park Resources that are Critical to Fulfilling the Park Purposes

Only one of the three 'eligibility' criteria needs to be met in evaluating the study area or portion of it. The study team did not identify findings related to this criterion.


Roads and Access
Joshua Tree National Park
Eagle Mountain Boundary Study
National Park Service
U.S. Department of the Interior
Black Eagle Mine Rd
Eagle Mountain Townsite
Eagle Mountain Rd
Kaiser Road
Power Line Road
Phone Line Road
Eagle Mountain Rd
Interstate 10
Desert Center
HWY 177
Joshua Tree National Park
Legend
Study Area
Joshua Tree National Park
Colorado River Aqueduct
Eagle Mountain Railroad
Primary Roads
Other Local Roads
Last Update: 3/9/16
0
2
4
Miles
Sources: Roads (Riverside County, US Census Bureau Tiger Files) , Park Boundary (NPS)
The NPS makes no warranty, expresss or implied, related to the accuracy or content of this map.

Summary of Results – Initial Boundary Adjustment Criteria

Conclusion – Criterion 1: Protect Significant Resources and Values, or Enhance Opportunities for Public Enjoyment Related To Park Purposes

All of the parcel groups within the study area contain resources or public enjoyment opportunities related to the purpose of Joshua Tree National Park, meeting the first boundary adjustment criterion. Most parcel groups, if they were available for park management would support both resource protection and public enjoyment opportunities, with the exception of the Metropolitan Water District of Southern California (MWD) parcel group. Although the MWD parcels contain habitat for the desert tortoise, there is little opportunity for public enjoyment as the parcels support infrastructure and operations related to the Colorado River Aqueduct.

The federal land, private land, and western State School Land parcels form a large block of open space contiguous with existing parklands. These properties contain important habitat, including migration corridors, whose conservation would provide for greater protection of Joshua Tree National Park's fundamental resources and values including desert tortoise habitat, biological diversity and healthy ecosystem function, and interconnectivity of California desert lands. Maintaining and reestablishing connectivity between core habitat areas would help prevent isolation of wildlife populations such as bighorn sheep. Protecting these broader landscape connections helps ensure the resiliency of natural systems, particularly related to ecosystem stressors such as fragmentation from development, increased fire frequency, and increasing temperatures as a result of climate change. In the context of climate change, the presence of multiple migration corridors may create opportunities for adaptive responses and for supporting resiliency, particularly for threatened species.

Cultural resources within the study area provide an excellent opportunity to protect and interpret historic and prehistoric resources that demonstrate the integral connection between desert ecosystems, land use, and human cultures. Inclusion of these resources within the park boundary would help to further protect and interpret historic values and stories related to the purpose of Joshua Tree National Park. Study area resources such as the Eagle Mountain Mine and Townsite could expand on mining history themes currently interpreted at Joshua Tree National Park. Sites, structures, and artifacts within the study area related to the Eagle Mountain Mine and Townsite provide an opportunity to convey the cultural contribution and story of mining in the 20th century, and its relevance to the growth of southern California and the West. Many of the lands associated with the mine and Townsite are currently closed to the public. However, if they became available for park management could provide important opportunities for interpretation.

Existing infrastructure such as roads and facilities within the parcel groups that contain resources related to the mine and Townsite (Private, Townsite and Eagle Mountain School) could provide access for visitors to an area of the park that is currently difficult to reach and experience. Such infrastructure could also help address current recreational demands at Joshua Tree National Park such as for camping and biking.

The wilderness areas adjacent to the study area within the federal land parcel group are some of the most pristine in the national park. Visitors to the area can enjoy dark night skies, high air quality, and natural quiet, all of which could be affected by proposed future uses of the area. Despite visual disturbances from previous mining activities, much of the study area contains scenic landscapes visible from Joshua Tree National Park. Protection of lands adjacent to Joshua Tree National Park wilderness could benefit the natural and untrammeled character of the park's designated wilderness areas.

Conclusion – Criterion 2: Addresses Operational and Management Issues Criterion

The study area properties meet the third criterion for a boundary adjustment, addressing operational and management issues such as access and clear boundary delineation. Adding the study area lands west of the MWD parcel group to the Joshua Tree National Park Boundary could improve access to the east side of the park and define a more logical boundary delineation to prevent encroachment of unauthorized activities. This would enhance the ability of the NPS to manage the lands within the park.

Conclusion – Criterion 3: Otherwise Protect Park Resources that are Critical to Fulfilling the Park Purposes Criterion

The study team did not identify findings related to this criterion.

Other Significant Resources in the Study Area

In addition to containing resources that further the purpose of Joshua Tree National Park, the study area also contains other resources with important cultural significance. These resources include the Colorado River Aqueduct and related lands and facilities, and resources related to the World War II Desert Training Center, California-Arizona Maneuver Area.

Colorado River Aqueduct

The Colorado River Aqueduct is a 242-mile-long conveyance system that transports water from the Colorado River to Lake Mathews in Riverside County. The aqueduct was constructed in the late 1930s and was placed into service in 1941. The Historic American Engineering Record for the Colorado River Aqueduct completed in 1998 documents its significance:

"When completed, it was one of the longest water-conveyance facilities in the world. The aqueduct includes power lines, tunnels, siphons, covered conduits, open canals, dams, reservoirs, and five pumping plants, involving ingenious engineering solutions and newly introduced construction equipment. The project also employed over 35,000 people during its eight-year span and as many as 10,000 at one time, making it southern California's single-largest work opportunity during the Great Depression. In 1995, the Colorado River Aqueduct was named a National Historic Civil Engineering Landmark by the American Society of Civil Engineers. Today, it is the major water supply for urban and suburban southern California (Gruen 1998, ASCE 2015)."

The Colorado River Aqueduct and nearby Desert Center also represent an interesting aspect of history related to the evolution of the Kaiser Permanente Insurance model, California's largest managed healthcare system today. Kaiser Permanente was established by Henry J. Kaiser and Dr. Sidney R. Garfield during the 1940s. Together they created what is now the world's largest private healthcare system and the first group health plan in the nation to fully

incorporate prepayment, group practice, and large geographic scale medical facilities (Hendricks 1993).

The model originated in Desert Center with the healthcare services provided to construction workers for the Colorado River Aqueduct. It was here that Dr. Sidney Garfield started one of the first prepayment systems specifically for New Deal workers constructing large public work projects in the California desert. In 1933, Dr. Garfield contracted with Industrial Indemnity, an insurance consortium formed by the major contractors involved in the Colorado River and Hoover Dam projects to meet the legal requirements for worker's compensation. Dr. Garfield located a hospital (Contractors General Hospital), near Desert Center, a mid-point along the Colorado River Aqueduct, with the goal of providing medical services to aqueduct construction workers. Together with Industrial Indemnity, a prepayment system was set up with 5,000 workers where they would prepay premiums to treat medical injuries. Workers paid five cents a day.

The location of the hospital was near a work camp for the Colorado River Aqueduct located along the base of the Eagle Mountains. Dr. Garfield was considered unusual amongst physicians in that he felt that patients would respond to care better if they were in a comfortable and attractive environment. Contractors General Hospital was clean, bright and air conditioned. Archeological remains of the hospital still exist. However, it is not certain at this time whether the remains are in the study area (Gilford 2006; Hendricks 1993).

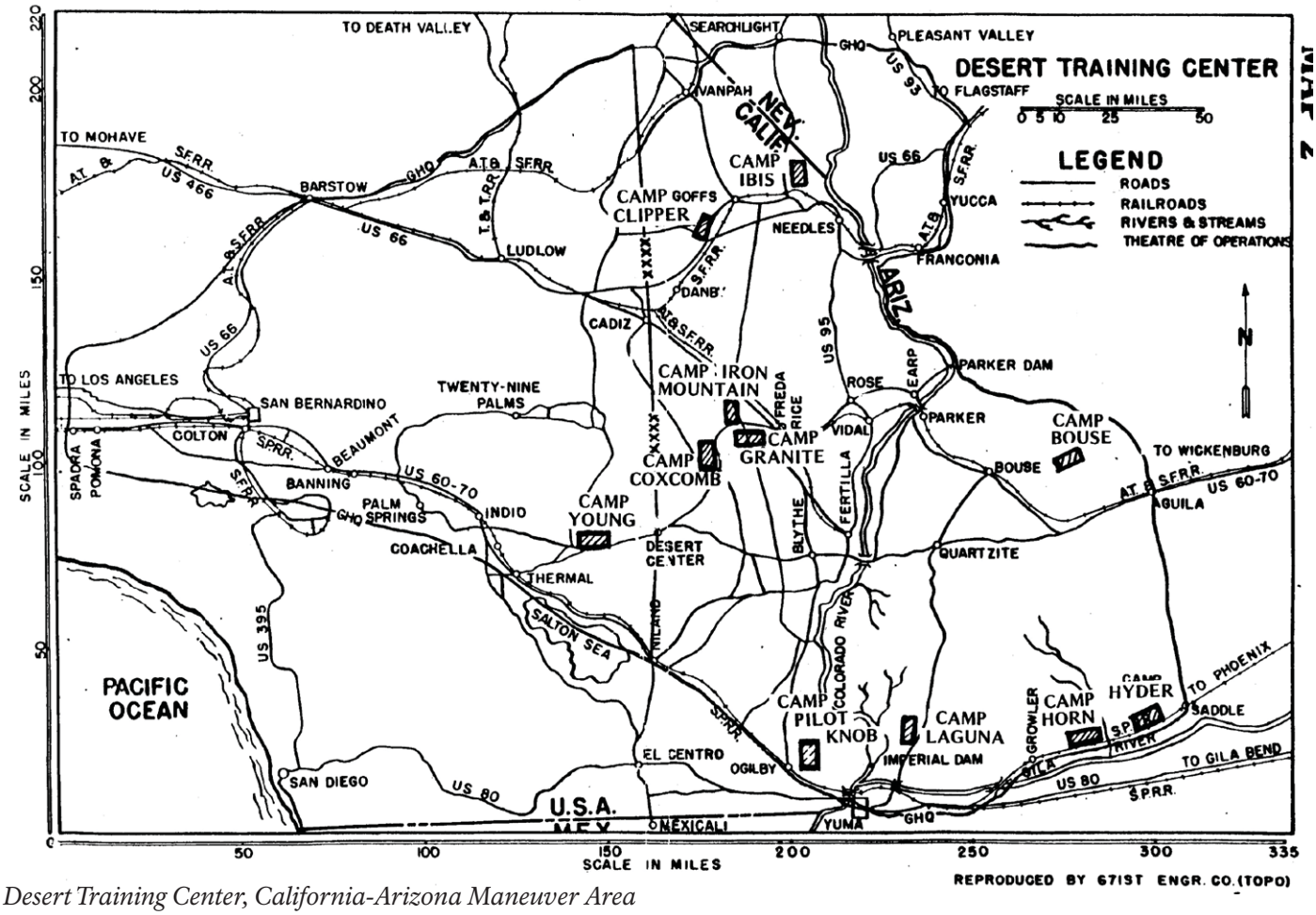
Henry J. Kaiser, who had men working on the aqueduct, became aware of Dr. Garfield's work through Industrial Indemnity and later asked Dr. Garfield to set up a medical system for his employees at his Grand Coulee Dam construction site. Subsequently, Mr. Kaiser enlisted Dr. Garfield to help establish a health care system for shipyard workers at the Kaiser Shipyards in Richmond, California. The healthcare program for the shipyard workers evolved into Kaiser Permanente (Hendricks 1993).

General Patton's World War II Training Camp

In 1942, General Patton established the World War II Desert Training Center to train troops in combat under harsh conditions to prepare for combat the Germans in the deserts of North Africa. Known as the Desert Training Center, California-Arizona Maneuver Area (DTC-CAMA), it was the largest military training area in the world, covering 18,000 square miles of desert lands in California and Arizona. See page 54 for a map of the California-Arizona Maneuver Area. One million troops trained there until the camp closed in 1944. The headquarters of the training center, Camp Young, was located west of the study area in Chiriaco Summit (BLM 2015e and 1985, Bischoff 2009).

The divisional camp closest to the project area was Camp Desert Center. Camp Desert Center encompassed 34,000 acres and was located southeast of the study area, north of Interstate 10, between Desert Center and Chiriaco Summitt. Components of the camp included an evacuation hospital, maneuvers area, several campsites, and temporary housing. However not much is known about the history. Camp remains, including rock-lined roads and walkways, tent areas, and trash have been identified, just outside of the study area east of Eagle Mountain Road. A National Register of Historic Places evaluation contained in the *Historical and Archeological Context for the California Desert for the DTC-CAMA* determined that more research was needed to determine whether or not the camp is eligible for listing in the National Register of Historic Places (Bischoff 2009).

Although specific sites and visible remains have not been identified within the study area to this date, there is the potential to uncover visible remains of training in the area, such as tank tracks, exploded ordinance, target ranges, and ammunition cans.



Desert Training Center, California-Arizona Maneuver Area

The Colorado River Aqueduct as it transitions from canal to tunnel. The aqueduct forms the eastern edge of the study area. Photo by Ecoflight, 2011.

Feasibility Criteria Evaluation

All recommendations for boundary changes must also meet the following feasibility criteria: the added lands will be feasible to administer considering their: size, configuration, ownership, costs, and other factors. This assessment evaluates the practical ability of NPS to manage and operate lands within a potential boundary expansion.

Size, Configuration, Ownership and Use

Federal Lands Parcel Group

Size and Ownership. The federal lands managed by the Bureau of Land Management (BLM) include approximately 166 parcels (or portions of parcels) totaling approximately 23,140 acres. The federal lands are contiguous to the national park boundary and make up the majority of land under study. Aside from dirt roads and remnants of former mining activity, the lands within this parcel group are mostly undeveloped. *See Map 2-6: Federal Lands Parcel Group*.

Current Uses and Existing Rights. Primary use of the federally owned land is for rockhounding, camping, small-scale mining by mining club members and other individuals, and off-highway vehicle use. Visitation is sparse due to the area's remote location.

Mining. Portions of the federal lands were used by Kaiser Steel Corporation in association with the Eagle Mountain Mine. Kaiser Eagle Mountain, LLC~~, a subsidiary of Eagle Crest Energy Company,~~ maintains 460 unpatented mining and millsite claims on the federal lands in the study area. Another six unpatented mining claims are owned by individuals and members of a local mining club (BLM 2015b). Today, commercial mining activity at Eagle Mountain Mine, in the form of aggregate sales, occurs only on private lands. *Appendix D: Unpatented Mining Claims* contains a list of unpatented mining and millsite claims in the study area. Kaiser Eagle Mountain, LLC operates under an existing plan of operations approved by the BLM in 1981.

Members of the mining club, First Class Miners, Inc., maintain mining claims located in the northwestern corner of the study area, close to the park boundary. Activities associated with this club include: camping; placer mining; exploration via all-terrain vehicles; conducting educational demonstrations of mining techniques through Copper Mountain College; and exploring the surrounding area for minerals, primarily gold. Several other unpatented mining claims are held by individuals. The six claims for which these activities are associated are all located in the western portion of the study area.

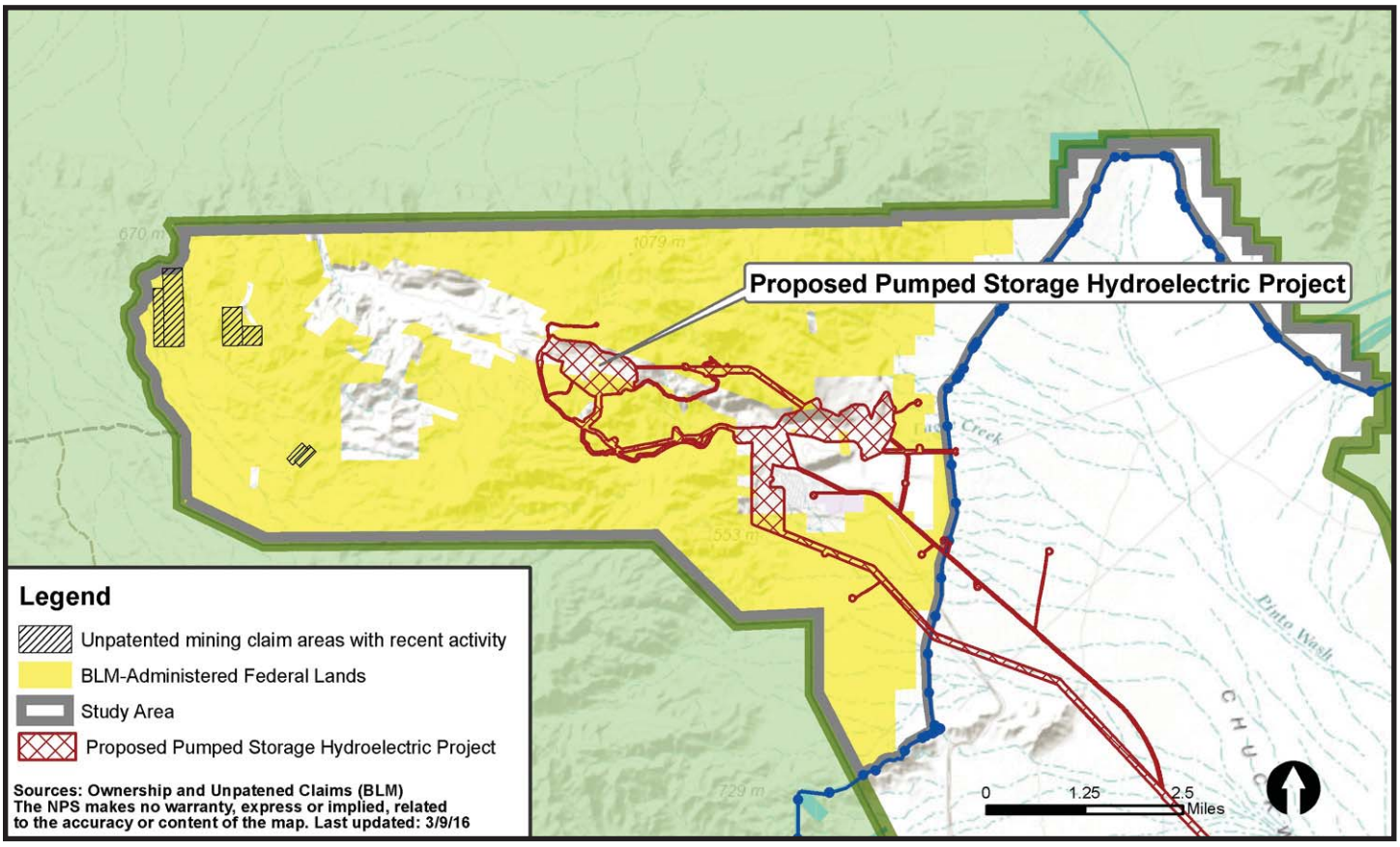
Other Existing Rights. Approximately 620 acres of federal land in this parcel group has been withdrawn under the Federal Power Act for the Eagle Mountain Pumped Storage Hydroelectric Project (Docket No. P-13123), license issued by the Federal Energy Regulatory Commission (FERC) in 2014. The BLM-managed lands withdrawn for this project have a power site reservation which restricts use of the lands for any other purposes until FERC lifts the reservation. More detailed information about this project is provided in the private lands parcel group feasibility evaluation. These lands would not be available for transfer to the National Park Service at this time. Additionally, Eagle Crest Energy Company has applied for a land use plan amendment with the BLM for a right-of-way for transmission and water lines associated with the project. The right-of-way application encompasses over 4,800 acres in and around the project area. These rights of way generally follow existing transportation and infrastructure corridors.

The FERC license contains a construction commencement date of June 2018. However, the licensee may ask for a single two-year extension of this deadline. Additional rights-of-way across federal lands will also be needed for the transmission and water lines associated with the pumped storage hydroelectric project and are currently being evaluated in an environmental assessment by the BLM.

Several transmission lines cross the federal lands, primarily in the southeastern portion of the study area. Southern California Edison has electrical infrastructure and telecommunications infrastructure located within the study area, as does Kaiser Eagle Mountain, LLC, and the Metropolitan Water District of Southern California. This infrastructure requires periodic inspection and maintenance.

Federal lands

Map 2-6: Federal Lands Parcel Group



BLM Management Policies. Multiple BLM land management policies and designations apply to the study area lands. Through the Federal Land Policy and Management Act of 1976 (FLPMA) Congress established the California Desert Conservation Area (CDCA) and directed the BLM to inventory and to prepare a comprehensive land use management plan for the CDCA (CDCA Plan). The 25-million acre CDCA includes 12 million acres of public lands. The general goal of the CDCA Plan is to provide for the use and protection of the desert's natural, cultural, and aesthetic resources. The BLM-administered land in the study area is in the CDCA Plan area and is subject to management guidelines in the 1980 CDCA Plan and its subsequent amendments (BLM 1999). *Map 2-7: Multiple Use Classes (NECO Plan)* and *Map 2-8: BLM Proposed Land Use Designations* depict existing and proposed BLM management policies for the study area.

Multiple Use Classes. The CDCA Plan establishes four multiple use classes and plan elements for specific resources or activities, such as motorized vehicle access, recreation, and vegetation. As amended in the *North and Eastern Colorado Desert Coordinated Management Plan* (NECO Plan), a plan developed for a geographic subset of the larger CDCA, public lands west and north of the Eagle Mountain Mine but east of the park boundary are managed as Multiple Use Class-L guidelines. Public lands south and east of the Eagle Mountain Mine are managed according to Multiple Use Class-M guidelines (BLM and CDFG 2002).

- Class "L" (limited use) lands are managed to provide lower intensity, carefully controlled multiple uses while ensuring that sensitive resource values are not significantly diminished. Allowable uses in Class L areas include electric generation plants (wind, solar or geothermal); gas, electric and transmission facilities and cables; communications sites; livestock grazing; mining; and low to moderate recreational activities.
- Class "M" (moderate use) lands are managed to provide for a wider variety of uses such as mining; livestock grazing, moderate to high density recreational uses; utilities, and all types of electrical generation plants (BLM 1999, BLM and CDFG 2002).

Proposed BLM Designations[3]. The *Desert Renewable Energy Conservation Plan Proposed Land Use Plan Amendment Final Environmental Impact Statement (DRECP LUPA)* (BLM 2015a), which serves as the most recent proposed land use plan amendment to the CDCA Plan, proposes to apply two new BLM land-use designations. If adopted, these designations would only apply to a little more than half of the BLM-managed lands within the DRECP Plan Area. The lands that are not proposed to receive a new land use designation in the DRECP LUPA are referred to as "unallocated lands (BLM 2015a)." The BLM has not signed a Record of Decision for the DRECP LUPA.

National Conservation Lands. BLM-managed federal lands west of the Eagle Mountain Mine (approximately 5,870 acres) are proposed to be designated as a National Conservation Lands (NCL) through the DRECP LUPA. A portion of the proposed NCL includes State School Land and private land. However, this proposed BLM land use designation would not apply to these nonfederal lands unless BLM were to acquire management authority over these lands such as through a land exchange with the California State Lands Commission (CSLC) (BLM 2015a).

The NCL designation would incorporate these lands into to the broader National Landscape Conservation System (NLCS). The 2009

[3] Note to Reader: The DRECP LUPA Record of Decision was approved in September 2016. Proposed designations described in this section have thus been adopted by the BLM.

Omnibus Public Land Management Act, PL 111–11 created the NLCS "to conserve, protect and restore nationally significant landscapes that have outstanding cultural, ecological and scientific values for the benefit of current and future generations." National program policies that generally apply to BLM public lands also apply to NLCS components to the extent that they are consistent with the designating proclamation or legislation, other applicable law, and BLM policy. The BLM's objectives in implementing the NLCS policy include:

- Effectively managing valid existing rights and compatible uses within monuments and national conservation areas.
- Managing discretionary uses within monument and national conservation areas to ensure the protection of the objects and values for which the monuments and national conservation areas were designated.
- Using science, local knowledge, partnerships, and volunteers to effectively manage monuments and national conservation areas.
- Providing appropriate recreational opportunities, education, interpretation, and visitor services to enhance the public's understanding and enjoyment of the monuments and national conservation areas.

BLM Manual 6100 provides general policy to BLM personnel on managing public lands in the NLCS. This manual lists the designations identified in the act as components of the NLCS. National program policies that are applicable to all BLM public lands apply to lands in the NLCS to the extent they are consistent with the Omnibus Act of 2009, the designating legislation or proclamation, other applicable law, and BLM NLCS program policy.

Although Public Law 111-11 provides for lands within the CDCA to become National Conservation Lands, it does not include specific management direction to protect resource values on these lands. Therefore, more specific direction is proposed in the DRECP LUPA planning process to protect these resource values. Discretionary activities would only be allowed if a NEPA analysis indicated that they were compatible with the conservation values of the area. Specific management plans would be developed for NCL and ACEC's established through the DRECP LUPA. In addition, to achieve the purposes of FLPMA Section 601 and the 2009 Omnibus, and consistent with FLPMA's multiple use and sustained yield mandate, the BLM has stated that it would consider for mineral withdrawal any National Conservation Lands it identifies in connection with the DRECP decision. In the DRECP LUPA Record of Decision, the BLM will identify priority areas within the National Conservation Lands for consideration in a Phase 1 analysis of mineral withdrawals. In identifying these priority areas, or "Phase 1" areas, the BLM will consider the following:

- History of conservation commitment
- Importance of the conservation values
- Current trends (e.g., species population trend)
- Current absence of significant mining activity or production

The evaluation of these Phase 1 areas for a potential withdrawal will be the subject of a separate planning process that would begin as soon as practicable after approval of the DRECP LUPA Record of Decision. Upon conclusion of the Phase 1 environmental analysis, review, and decision, the BLM would expect to commence a Phase 2 analysis of withdrawals for any remaining NCL within the DRECP planning area not previously considered or otherwise subject to withdrawal (BLM 2015a).

Areas of Critical Environmental Concern. In the eastern portion of the study area, the DRECP LUPA land use plan amendment proposes an

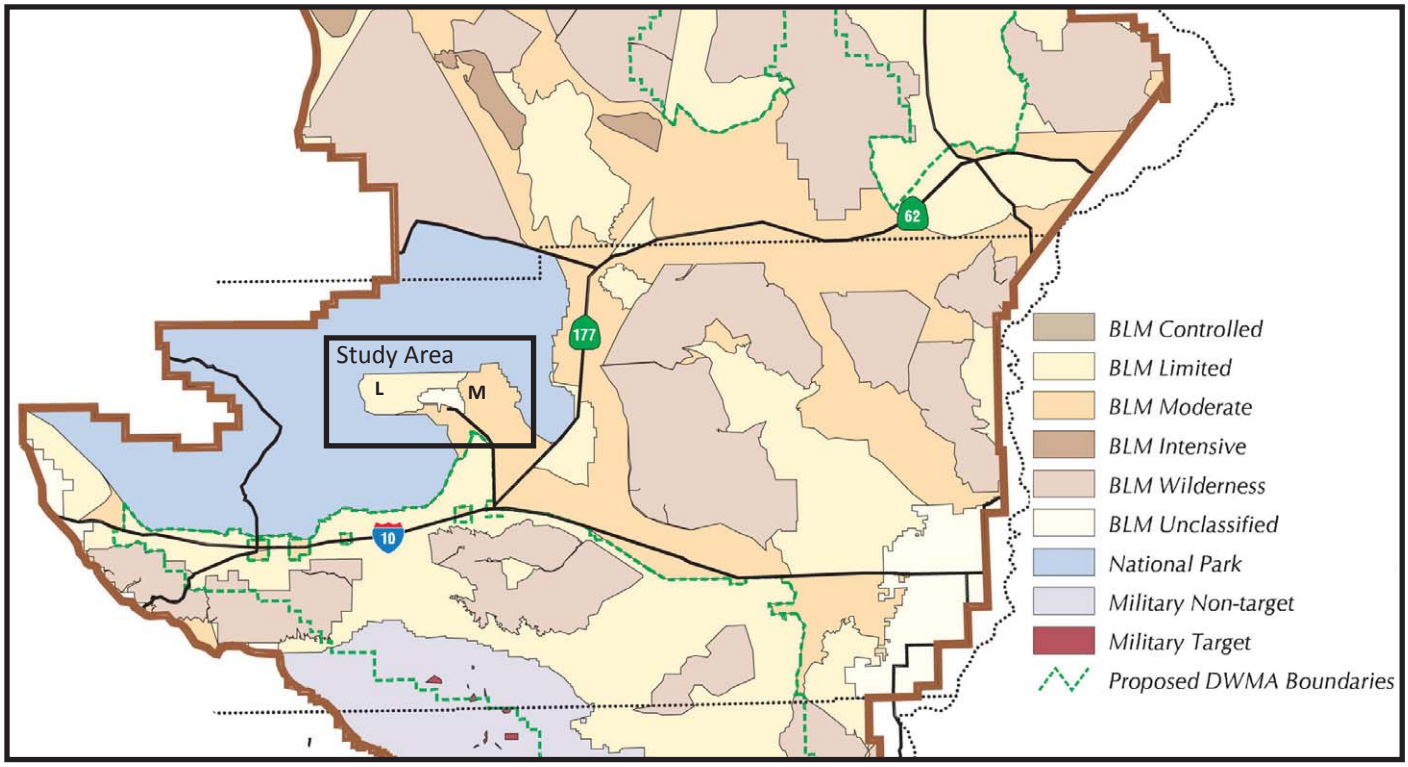
area of critical environmental concern (ACEC) for the broader Chuckwalla Valley area (Chuckwalla ACEC). The designation of ACECs was authorized in Section 202 (c)(3) of FLPMA, and was designed to be used as a process for determining the special management required by certain environmental resources or hazards (BLM 1999). To qualify as an ACEC, an area must contain resources, values, systems or processes, or hazards that meet the relevance and importance criteria. ACECs have special site-specific management prescriptions in order to protect the specific natural or cultural resource for which the ACEC was designated. Approximately 6,630 acres of federal land within the study area is included in the proposed Chuckwalla ACEC (BLM 2015a).

The DRECP LUPA proposed recommended management actions for the Chuckwalla ACEC, would take effect when a new ACEC Management Plan is completed. The Chuckwalla ACEC description states that renewable energy development would not be compatible with the proposed Chuckwalla ACEC unit values. For locatable minerals, withdrawal is recommended for areas that were part of the former Chuckwalla ACEC extent (outside of the study area). Removal of mineral materials (common varieties of sand, stone, gravel, pumice, pumicite, clay, rock, and petrified wood) would be allowed only in portions of the proposed ACEC where impacts to vegetation and wildlife would be negligible. No surface occupancy would be permitted to remove leasable minerals (e.g., oil and gas, oil shale, geothermal resources, potash, sodium, native asphalt, solid and semisolid bitumen, bituminous rock, phosphate, sulfur, and coal). Stopping, parking and vehicle camping would be allowed no more than 100 feet from the centerline of an approved route of travel (BLM 2015a).

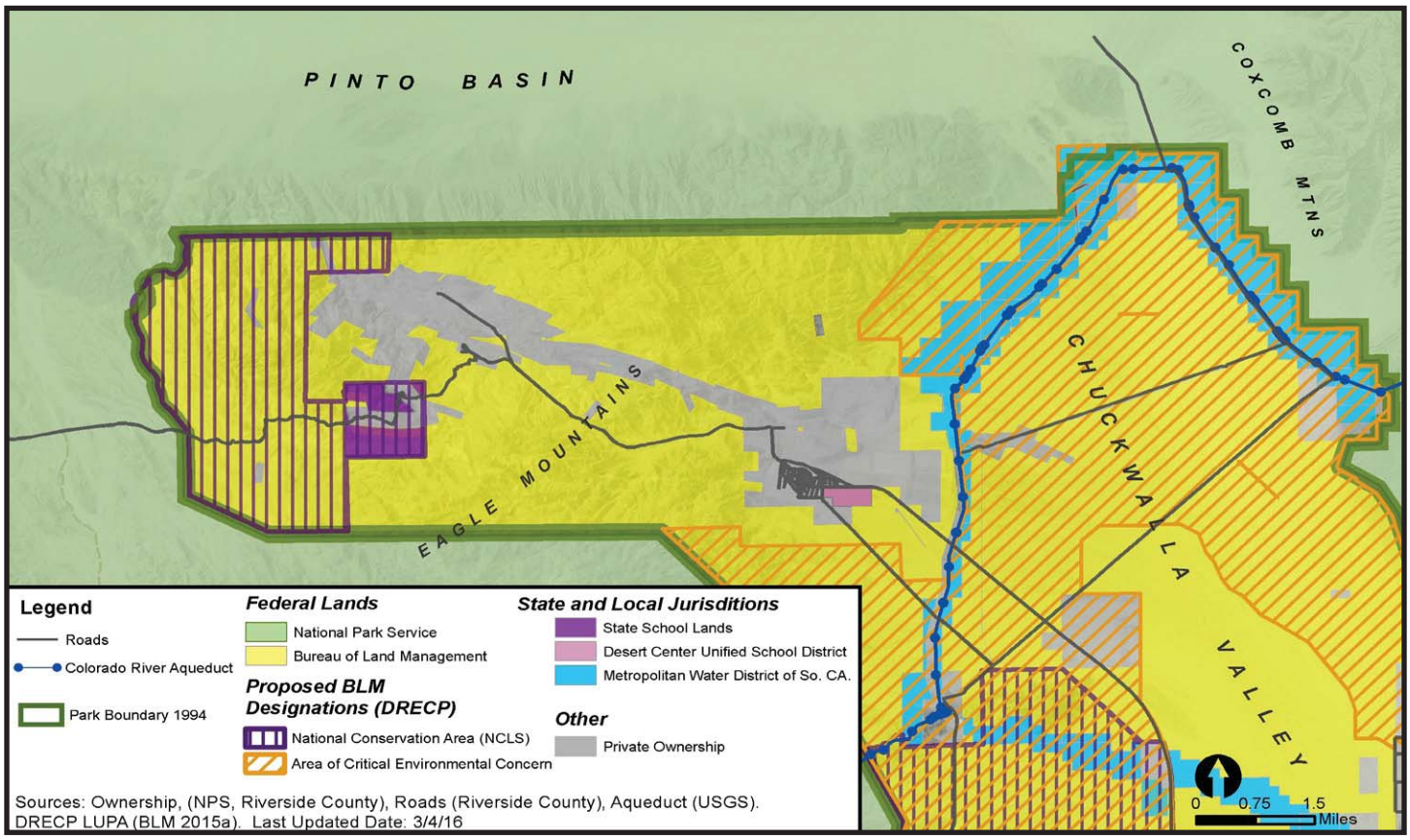
Transmission Corridors. The CDCA Plan recognizes designated approximately two-mile-wide utility corridors targeted for transmission lines, pipelines, and related structures such as substations and compression stations. One such corridor traverses the eastern edge of the study area, primarily near the Colorado River Aqueduct. The plan states that sites associated with power generation or transmission not identified in the CDCA Plan would be considered through the plan amendment process (BLM 1980). The proposed DRECP LUPA states that transmission development and operation would occur in previously designated corridors and other identified areas, both inside and outside of development focus areas. The proposed DRECP LUPA also identifies potential transmission lines that could connect renewable energy generation in the DRECP Plan Area to load centers.

Local Planning and Zoning. Local zoning would generally not apply to federally owned lands.

Map 2-7: Multiple Use Classes (NECO Plan)



Map 2-8: BLM Proposed Land Use Designations (DRECP)



Analysis – Federal Lands Parcel Group. Because the federal lands are contiguous to the park boundary, and public access is primarily from the national park, these lands would be of adequate size and configuration for inclusion in the park boundary. The DRECP LUPA recognizes that much of the area lands are of national significance. However, BLM proposed land use designations would only apply to portions of the study area.

The Federal Power Act withdrawal associated with the proposed Eagle Mountain pumped storage hydroelectric project provides that federal lands included in an application are "from the date of filing of application. . .reserved from entry, location, or other disposal under the laws of the United States until otherwise directed by [FERC] or by Congress (16 U.S.C. § 818)." As a result of safety concerns associated with the project, no public access will be permitted on the project site. For these reasons, it would not be feasible to include the 620 acres that have been previously withdrawn under the Federal Power Act for construction of the pumped storage hydroelectric project as well as its proposed associated rights of way (approximately 4,850 acres) in the park boundary at this time. At such time that ~~the 620 acres~~these lands are no longer needed for this use, ~~those~~ then those lands could be considered for inclusion in the park boundary.

Mining operations on unpatented and patented claims may only take place in parks in accordance with an NPS permit and NPS regulations. In 1976, Congress enacted the Mining in the Parks Act (54 U.S.C. §100731 et seq.), which closed all units of the National Park System to the location of new mining claims. Through the Mining in the Parks Act, Congress also directed the Secretary of the Interior to regulate all activities resulting from the exercise of valid existing rights on patented or unpatented mining claims within any unit of the National Park System. The Secretary has delegated this authority to the National Park Service (NPS). In 1978, the NPS promulgated the requisite regulations which are located in Title 36 of the Code of Federal Regulations (CFR), Part 9, Subpart A. The NPS regulations control the conduct of mineral operations so as to minimize damage to park values and purposes.

Because any transfer of land from the BLM to the NPS would be subject to valid existing rights, existing unpatented mining and millsite claims would not be voided. However, unpatented claims would have to undergo a validation process and further comply with NPS regulations before mining activity could continue. Among the requirements the claim holder must meet is the discovery of a valuable mineral deposit. ~~The burden of proving a discovery rests entirely with the claim holder.~~ If claims are determined to be valid, then mining is permitted per NPS regulations. ~~Because validation of mining claims can be a lengthy process, such costs could prove to be difficult for claimholders who currently operate under BLM's small miner waivers.~~ Such areas, which total over 300 acres[4], could ~~be~~ remain under BLM management until such time they that they are no longer active or are relinquished. However, if the remaining lands surrounding such claims were transferred to the NPS for administration, it may create challenges for federal management agencies since the lands were managed by different, and sometimes conflicting, management policies.

The vast majority of the unpatented mining and millsite claims (460) are owned by a corporate entity whose primary use of the lands and interests in lands in the Eagle Mountain area would be for a pumped storage hydroelectric project. Many of these claims are outside of the

[4] During the completion of this study and environmental assessment, the number and location of several unpatented claims held by individuals changed. One claim closed while several were added. If unpatented claim areas were excluded from a boundary addition, additional surveys would be needed to determine their exact location.

footprint of the proposed pump storage hydroelectric project and Eagle Crest Energy Company which has a substantial ownership interest in such lands has indicated that it does not intend to conduct mining operations on its unpatented mining claims at this time. If such lands were included in the park boundary and Eagle Crest Energy Company ~~or its affiliates~~ and Kaiser Eagle Mountain, LLC chose to mine on the unpatented claims, they would need to comply with NPS regulations for mining in the parks.

In summary, approximately ~~22,515~~ 17,670 acres of the federal lands parcel group would be eligible for inclusion in a boundary adjustment. This acreage excludes the lands withdrawn under the Federal Power Act for the pumped storage hydroelectric project (620 acres). The 17,670 acres also excludes lands within the proposed right-of-way for the project. However, these lands may become available for federal land transfer if not needed for the project. Retaining the six unpatented mining claims in active use by the mining club and other individuals under BLM management may be considered. However such exclusion would create a complex boundary configuration and management challenges for both agencies.

Private Lands Parcel Group

Size and Ownership. This group includes 42 parcels (or portions of parcels) totaling approximately 4,550 acres of privately owned land, most of which is associated with the Eagle Mountain Mine and under ownership by one entity, Kaiser Eagle Mountain, LLC (KEM) which was acquired by ~~Eagle Crest Energy~~Eagle Mountain Acquisition, LLC ~~Company~~ from CIL&D, LLC in 2015. The United States patented these lands to KEM's predecessors over time in furtherance of mineral production.

As a part of the sale transaction, CIL&D carried back a portion of the purchase price which was represented by two promissory notes. One promissory note was paid in full in February 2016 and the second promissory note currently has a stated maturity of May 31, 2025. The outstanding promissory note is secured, by among other things, a first deed of trust on all the land, mining claims and other property interests owned or controlled by KEM. In the event of default, CIL&D could reacquire KEM and all of its assets.

A separate parcel comprising approximately 31 acres located in the northwestern section of the study area is also included in this parcel group but is under different ownership. There is no active mining occurring on this parcel at this time. However, the current owners have indicated that this land is not available for acquisition at this point in time. See *Map 2-9: Private Lands Parcel Group*.

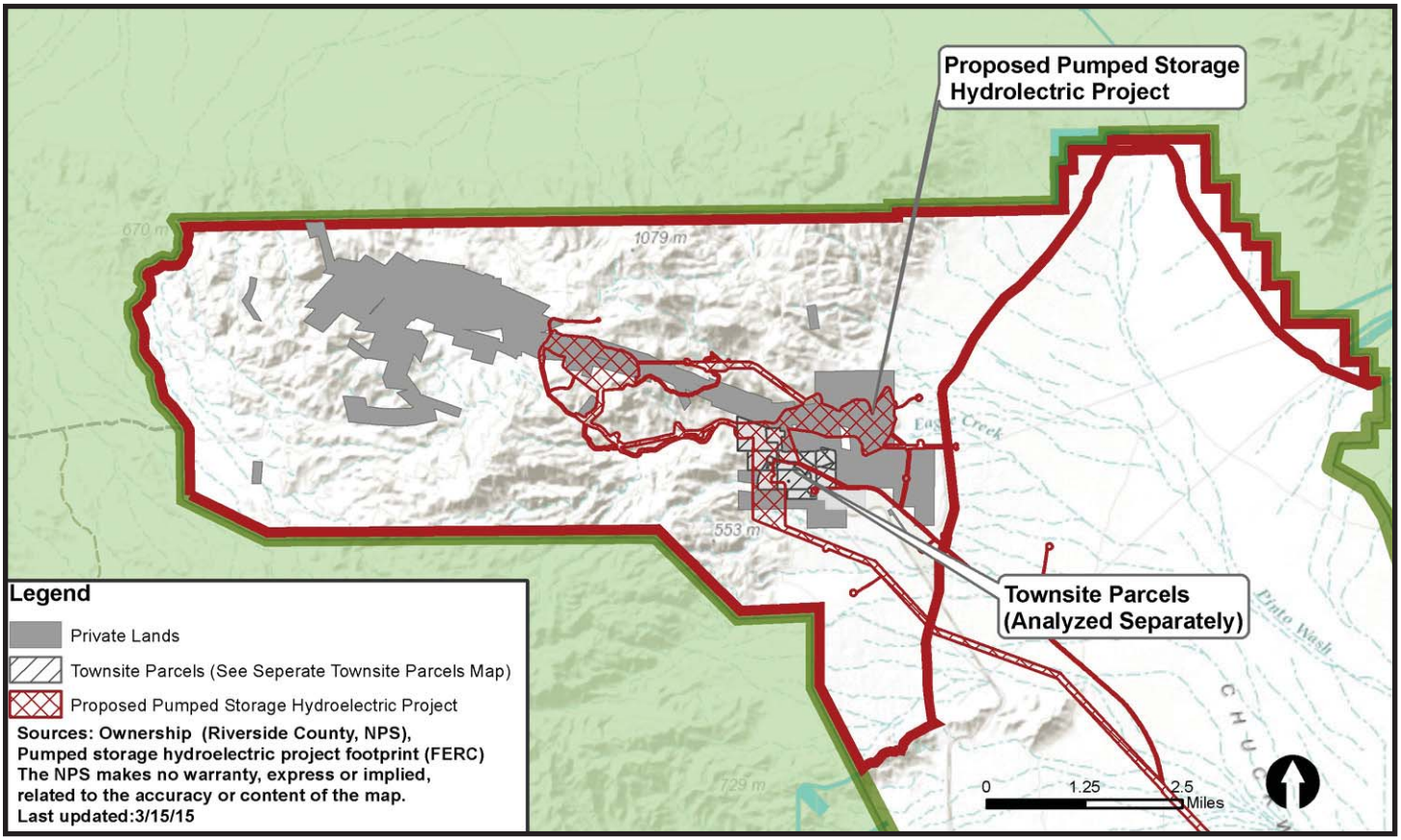
With the exception of three small parcels, the KEM private lands are contiguous and surrounded by federally owned land. KEM also owns lands that were patented to Kaiser Steel Corporation for the purposes of the Eagle Mountain Townsite, which served as the company town for the employees of the Eagle Mountain Mine from 1948 to 1983. The feasibility of these parcels for inclusion in the park boundary is analyzed separately (see below) because of the reversionary interest of the federal government in such lands.

The parcels in this group primarily consist of mountainous terrain that has been extensively disturbed as a result of past mining activity. Inactive open pits, tailings piles, and remnant tailings ponds exist on these properties. Most of the ore processing and refining facilities associated with the former mining activities have been removed (FERC 2012). Despite the disturbance from previous mining activity, some of the private land parcel group lands are part of an important migratory corridor for desert bighorn sheep (Epps et al. 2010). Additionally, the mine itself has historical value and if added to the park would provide NPS an opportunity to share with visitors its historical significance.

Kaiser Steel Corporation constructed a 52-mile private railroad to transport iron ore from the Eagle Mountain Mine to the Kaiser steel mill in Fontana, California. The northern-most 4.5 miles are within the study area. The railroad begins at the Southern Pacific Railroad at Ferrum Junction near the northeastern shore of the Salton Sea. From Ferrum Junction, the rail line travels in a northeast direction along Salt Creek, crosses under Interstate 10, and follows the foothills of the Eagle Mountains and along the western boundary of the existing Townsite and into the mine (Riverside County and BLM 1996). An existing right-of-way from the BLM covers approximately 28.6 miles of the 52-mile rail line; the remainder of the rail line traverses the private lands, and other landowners which have issued easements or other permits for the rail line (Riverside County and BLM 1996). The railroad is currently non-operational and tracks are damaged in some locations. Through an agreement with KEM, Eagle Mountain Mining and Railroad, LLC (EMMR), maintains the railroad assets. EMMR has expressed interest in repairing the railroad to facilitate the transport of aggregate from the mine.

View of the Eagle Mountain Mine, looking east from the federal lands. Photo by Steven Scamman.

Map 2-9: Private Lands Parcel Group



Current Uses and Existing Rights. Primary use of the private lands in the study area has been for mineral extraction. Large scale mining at the Eagle Mountain Mine ceased in 1983. In the future, Eagle Crest Energy Company plans to use approximately 1,650 acres of the former Kaiser Eagle Mountain Mine site for its pumped storage hydroelectric project.

Most of the lands in this group are patented mineral lands owned by KEM. A separate, individually owned patented parcel (31 acres) in the northwestern corner of the study also exists (Riverside County 2015a). The California State Lands Commission (CSLC) maintains a vested mineral interest on one of the KEM parcels within the former eastern pit of the Eagle Mountain mine. This area is within the footprint identified for the proposed pumped storage hydroelectric project. CSLC had issued a lease to Kaiser in 1978 covering 145 acres of this 467-acre parcel. Iron ore was extracted from the eastern pit for nearly 40 years until operations ceased in 1983. Kaiser's lease from the CLSC expired in December 2002 (FERC 2012). The mine waste deposited on the parcel is owned by KEM (CLSC 2015).

Mining Operations. Although full-time operation of the Eagle Mountain Mine was curtailed in 1983, the Eagle Mountain Mine has remained in operation on a more limited scale and is considered active (CA Mine ID#91-33-0060). Current activity includes a limited amount of above-ground mining, processing, and transport of material derived from stockpiles of waste rock from the previous extraction of iron ore. Products include iron ore, crushed and mixed rock, rip-rap, and decorative and landscape stone (Kaiser Eagle Mountain, LLC 2013). In addition to a current BLM approved plan of operations, which allows for mining on the federal lands on which KEM holds mining claims, KEM has vested mining rights allowing for mining on its fee-owned land.

A reclamation plan for the Kaiser Eagle Mountain Mine was completed by Kaiser Steel Corporation and approved by Riverside County in 1980. The reclamation plan covers 8,890 acres. The 2013 *Kaiser Eagle Mountain Mine Interim Management Plan* reports that approximately 4,300 acres are disturbed. The reclamation plan for the mine calls for aggregate generated during the iron ore mining to be placed in dump locations and left to weather at "their natural angle of repose." *A Storm Water Pollution Prevention Plan* (SWPPP) and Revegetation Plan have also been developed for the disturbed lands. The purpose of the SWPPP is to prevent water pollution as a result of the current small-scale mining and processing activities. The *Revegetation Plan* is prescribed in the 1980 *Reclamation Plan* and calls for voluntary re-growth of vegetation finding that there are fine materials on the surface to support such voluntary growth (Kaiser Eagle Mountain, LLC 2013).

The *Kaiser Eagle Mountain Mine Interim Management Plan*, approved by Riverside County, states that "surface mining operations at the Mine will continue for the foreseeable future, and will be responsive to market conditions (Kaiser Eagle Mountain, LLC 2013, p. 9)." Whether estimated reserves are economically recoverable depends on several factors including the market price of iron ore, costs to process and ship the iron ore, and costs for improvements to support the mining and processing (Kaiser Eagle Mountain, LLC 2013).

Construction of the proposed pumped storage hydroelectric project would preclude full-scale extraction of iron ore during the life of the project. Access to iron reserves beneath the project footprint would only become accessible for mining operations in the future if the project were decommissioned. FERC estimates that the recoverable iron ore at Eagle Mountain Mine that would become inaccessible in the east and central pits once the project is constructed and operational (FERC 2012, CLSC 2015). Above

ground mining of existing waste rock piles would continue during operation of the pumped storage hydroelectric project. Kaiser Eagle Mountain, LLC ~~(now owned by Eagle Crest)~~ has entered into an agreement with Eagle Mountain Mining and Railroad (EMMR) granting EMMR the right to conduct "above-ground mining activities on and related to the mining properties and in and related to the East Pit area of the Eagle Mountain Mine, for a renewable term up to 100 years. Other areas in and around the Townsite would be used for processing, operations, and administrative uses.

Eagle Mountain Pumped Storage Hydroelectric Project (pumped storage hydroelectric project). The proposed pumped hydroelectric storage project would supply system peaking capacity and transmission regulating benefits to the regional electrical grid. The proposed project would occupy 1,150 acres of federal lands (620 acres within the study area as described above) and about 1,377 acres of private lands, most of which (805 acres) is included within the private lands parcel group. An additional 220 acres of the proposed project boundary lies within the Townsite parcel group (FERC 2014).

The project would consist of: (1) an upper and lower reservoir (2) an underground powerhouse with four reversible pump-turbine units each rated at 325 megawatts for a total generating capacity of 1,300 megawatts; (3) a 16.4-mile-long above ground transmission line; and (4) groundwater supply facilities. The Central Pit of the Eagle Mountain Mine would be utilized for the Upper Reservoir and the East Pit of the mine would form the lower reservoir for the project (FERC 2012; FERC 2014).

The project would use off-peak energy to pump water from the lower reservoir to the upper reservoir during periods of low electrical demand and generate valuable peak energy by passing the water from the upper to the lower reservoir through the generating units during periods of high electrical demand. (FERC 2012).

The project requires a transmission line that would extend approximately 16.4 miles from the project switchyard to the Red Bluff Substation for interconnection to the Devers -Palo Verde transmission 500-kV line owned by Southern California Edison. The proposed route for the project's double-circuit 500-kV transmission line would be located almost entirely on public lands managed by BLM. Exceptions include privately owned land and a small crossing of land owned by the Metropolitan Water District of Southern California as the route crosses the Colorado River Aqueduct and transmission lines. Eagle Crest proposes a 200-foot-wide corridor for construction, operation, and maintenance of the proposed transmission line (FERC 2012, Eagle Crest Energy Company 2015).

Eagle Crest states that the pumped storage hydroelectric project facilities are not safe for public recreation due to the highly fluctuating water levels and that public access to the project area would be closed. No visitor facilities are proposed (Eagle Crest Energy Company 2015).

Local Planning and Zoning. The principal land use plan affecting the private lands parcel group is the *Riverside County General Plan (General Plan)*, which articulates the vision and planning principles for development in Riverside County. Properties in the eastern portion of the private lands parcel group are located within the *Desert Center Area Plan* which provides a more focused development plan for the Desert Center area (Riverside County 2003). *Map 2-10* depicts land use designations for the study area. Land use designations that apply to the private lands parcel group include:

- The *Community Development - Public Facilities (PF)* land use designation applies to most of the lands within the private lands parcel group. This land use designation reflects the previous proposal to construct a landfill on the Eagle Mountain Mine site. This

designation allows for civic uses such as County administrative buildings and schools.

- The *Open Space-Conservation (OS-C)* land use designation allows for the protection of open space for natural hazard protection, and natural and scenic resource preservation. Existing agriculture is permitted.
- The *Open Space – Recreation (OS-R)* land use designation applies to several areas south of the Townsite. This designation allows for recreational uses including parks, trails, athletic fields, and golf courses.
- The *Open Space - Mineral Resources (OS-MIN)* land use designation allows for mineral extraction and processing facilities. Such areas are held in reserve for future mineral extraction and processing. This designation applies to the easternmost parcels of the private lands parcel group and areas that were formerly proposed for Specific Plan No. 305, Eagle Mountain Landfill.
- The *Rural - Mountains (R-M)* land use designation allows for single-family residential uses with a minimum lot size of 10 acres, including areas of at least 10 acres where a minimum of 70% of the area has slopes of 25% or greater. The area also allows limited animal keeping, agriculture, recreational uses, compatible resource development (which may include the commercial extraction of mineral resources with approval of a surface mining permit) and associated uses and governmental uses. This policy would apply to one isolated parcel owned by KEM.

Zoning classifications are defined in the *Riverside County Land Use Ordinance*, *Ordinance 348, as amended* (Riverside County 2015b). *Map 2-11: Local Zoning* depicts the zoning classifications for the study area. The ordinance details all permitted uses on private property based on the assigned zone classification. For the Eagle Mountain Mine and Townsite, Riverside County adopted specific plans to accommodate a non-hazardous landfill that was previously proposed for the area. Specific plans are highly customized policy or regulatory tools that provide a bridge between the General Plan and individual projects, in a more area-specific manner than is possible with community-wide zoning ordinances. The specific plan is a tool that provides land use and development standards that are tailored to respond to special conditions and aspirations unique to the area proposed for development.

The eastern half of the private lands parcel group is assigned to *Specific Plan No. 305, Eagle Mountain Landfill*. The landfill proposal was abandoned by the Sanitation Districts of Los Angeles County in 2013, and the federal lands needed for the project were returned to the United States under BLM management in 2014. The *Desert Center Area Plan* states, "As an approved landfill site, the property is designated Public Facilities, which is within the Community Development foundation component. However, this site is within the Community Development foundation component solely to recognize the public facility use. Any alternative land use on this site, other than for public facilities, shall be uses within an Open Space foundation component designation (Riverside County 2003)." Although it is not currently reflected on publicly available county zoning maps, since the development of the landfill was never realized, the zoning and land use designations associated with the Eagle Mountain Mine continue to be designated as "Mineral Resources."

~~Outside of the specific plan zone area most of private land parcel group to the west lies in the *Mineral Resource Zone (M-R-A).*~~ Within ~~this~~ the *Mineral Resource Zone (M-R-A)* zone permitted uses for parcels not less than 20,000 square feet include: agricultural uses; electric and gas distribution, transmission substations, telephone

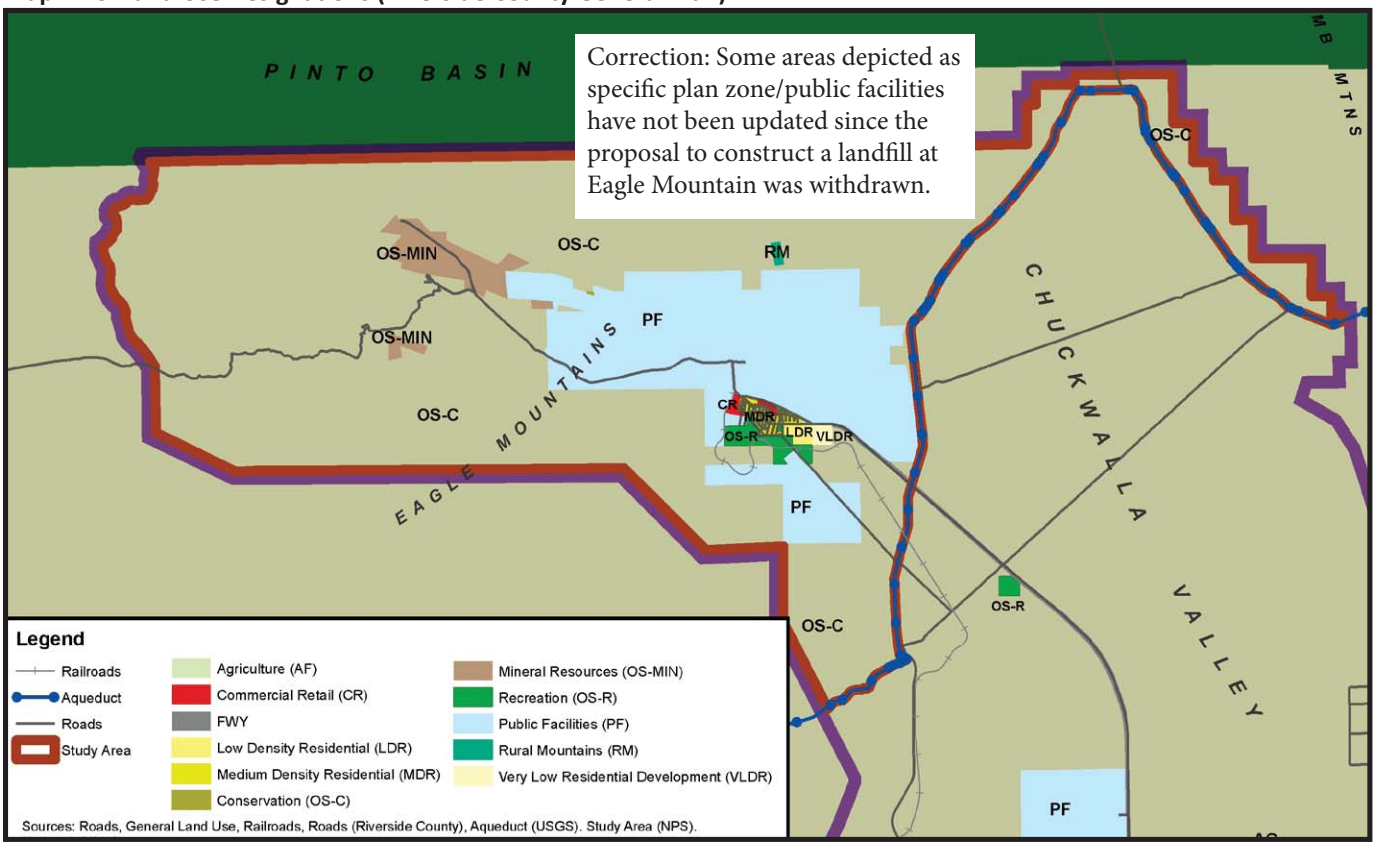
and microwave stations; water well and other uses related to the storage and distribution or water; and riding and hiking trails, recreation lakes, and campgrounds. With the issuance of a surface mining permit, various uses related to mining are allowed including excavation, processing, beneficiating, stockpiling, and facilities and equipment to support mineral extraction and processing (Riverside County 2015b). Near the Townsite, a small parcel lies in the *Controlled Development Zone (W-2)* which allows for a wide range of permitted uses including single-family dwellings, field and tree crops, outside storage of materials, and limited animal husbandry. Many additional uses are allowed by approval or by permit, including "structures and the pertinent facilities necessary and incidental to the development and transmission of electrical power, guest ranches, educational institutions, and sanitary facilities (Riverside County 2015)." Another isolated parcel in the southwestern corner of the private lands parcel group lies within the *Natural Assets Zone (N-A)*. Permitted uses in this zone include some dwellings and accessory buildings, field and tree crops, grazing subject to stated limitations, and apiaries. Several other uses, including utility substations are allowed by approval or permit (Riverside County 2015b).

Analysis – Private Lands Parcel Group. When combined with the federal lands, the private land parcel group would form a logical boundary delineation that would include areas with historical values and high potential for recreation and educational opportunities, as described in the previous section. Although much of the land is disturbed, the lands remain important for habitat for desert bighorn sheep and other wildlife.

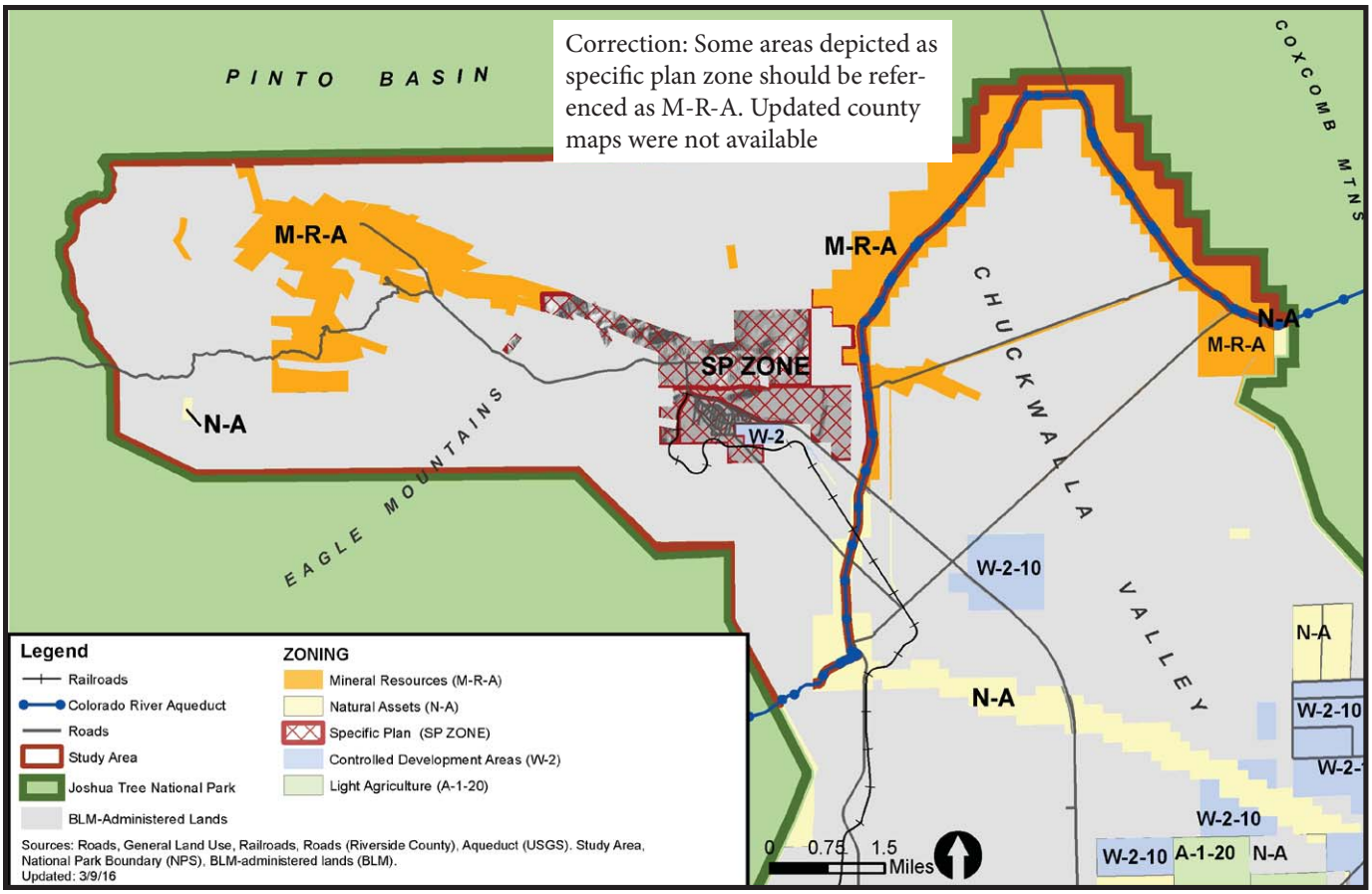
The boundary configuration would not include the private lands that have been previously withdrawn under the Federal Power Act, or other private lands currently used for commercial mining activities (approximately 2,~~320~~ 550 acres). It would also exclude the 30-acre parcel in the western portion of the study area that is not available to the NPS at this point in time. These lands would not be available for public use. At such time that the private lands are no longer needed for these uses, those lands could be considered for inclusion in the park boundary.

Approximately 2,~~230~~ 000 acres of the private land parcel group that would not be needed for the pumped storage hydroelectric project or mining activities would be a feasible addition to the national park boundary when combined with the federal land parcels. The Eagle Crest Energy Company has indicated that it would consider donation of lands excess to the proposed pumped storage hydroelectric project to the National Park Service when provisions related to the deed of trust have been met and subject to existing mining agreements with EMMR. The individually owned 31-acre parcel could be acquired or added to the boundary if the land owner was willing to sell or donate the land to the NPS.

Map 2-10: Land Use Designations (Riverside County General Plan)



Map 2-11: Local Zoning



State School Lands Parcel Group

Size and Ownership. The California State Lands Commission (CSLC) holds seven "State School Land" parcels within the study area totaling approximately ~~340~~ 379 acres. Three of the parcels are located adjacent to the Eagle Mountain Mine and are bisected by the KEM private lands (approximately ~~325~~ 335 .7 acres of patented lands). The other four parcels (approximately ~~15~~ 43 acres) are located in the far northeastern end of the study area near the Colorado River Aqueduct surrounded by lands owned and managed by the Metropolitan Water District of Southern California (MWD). Access to the larger parcels in the western end of the study area is from Black Eagle Mine Road which crosses through these parcels. There are no public roads that access the four isolated parcels located adjacent to the Colorado River Aqueduct.

Current Uses and Existing Rights. State School Lands were granted to the State of California by the federal government under the Act of March 3, 1853 (10 Stat. 244). A supplementary act in 1927 extended to the State the grant of mineral lands. School lands were placed into a statutory trust in 1984 when the Legislature enacted the School Land Bank Act (Act) and created the School Land Bank Fund. The CSLC is the trustee of the Fund. The Act states that school lands and attendant interests are to be proactively managed and enhanced to provide an economic base in support of public schools. The Act further requires the CSLC to take all action necessary to fully develop school lands, indemnity interests, and attendant mineral interests into a permanent and productive resource base. The California Public Resources Code §6217.5 requires, with one exception, that all net revenues, monies, and remittances from school and lieu lands (i.e., royalties, rents, and interest generated from promissory notes) are deposited into the State Treasury to the credit of the Teachers' Retirement Fund, which benefits the State Teachers' Retirement System (CSLC 2015).

In the past, for the 335.7 acres of patented lands, the CSLC has issued mineral prospecting permits for the exploration of these lands. It is likely that any future exploration and development of the Iron Chief Gold Mine would also involve the State School Lands that closely surround the Iron Chief Gold Mine.

The CSLC desires to retain these fee owned lands for potential future mineral exploration and development. However, in the event that KEM divests the interest of the lands in Section 36 comprising the Iron Chief Gold Mine to Joshua Tree National Park, the CSLC has stated that it may consider an exchange of these fee owned lands for lands of comparable value. Eagle Crest Energy Company which has a substantial interest in KEM has expressed a desire to donate such lands to the NPS.

The BLM and CSLC are pursuing an exchange of state and federal lands in the California desert. On October 1, 2015, the agencies signed a memorandum of intent for a proposed land exchange. The first phase of the land exchange will exchange 61,000 acres of non-revenue generating school lands in federal wilderness and other conservation areas for approximately 5,600 acres of federal lands with the potential for, or previously developed with, renewable energy facilities.

CSCL also holds a vested mineral interest on 466 acres of KEM lands that lie within the project area for the pumped storage hydroelectric project. This vested interest is discussed in the private lands parcel group analysis.

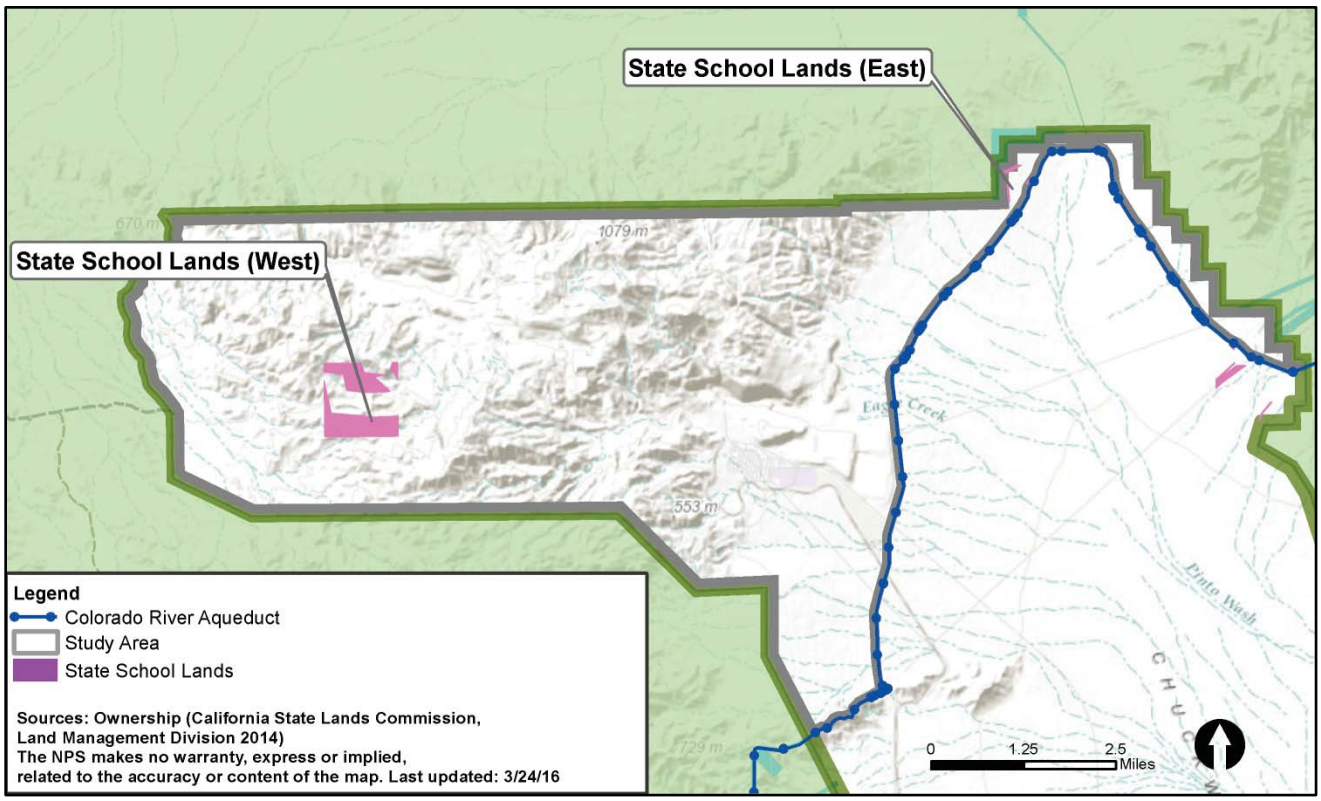
Planning and Zoning. The *Riverside County General Plan* land use designations for the State School Lands are *Open Space-Conservation (OS-C)* which calls for the protection of open space for natural hazard protection, and natural and scenic resource preservation; and *Open Space - Mineral Resources (OS-MIN)* which allows for mineral extraction and processing facilities.

Proposed BLM Designations. The ~~325~~ 335.7 acres of State School Lands located west of the Eagle Mountain Mine have been included in the area proposed as a national conservation lands in the DRECP LUPA. BLM land use designations do not apply to nonfederal lands. However, BLM may enter into land exchanges with the CSLC (BLM 2015a).

Analysis – State School Lands Parcel Group. The three western State School Land parcels (approximately ~~325~~ 335.7 acres), when combined with the federal and private land parcel groups would form a logical boundary delineation. These lands could be included in the national park boundary through a future land exchange. However, because the CSCL desires to retain such lands to achieve its goals as trustee of the School Land Bank Fund, the feasibility of adding such lands to the park boundary would only be considered if KEM donated its surrounding lands and interests in lands to the NPS, which would make it difficult for the CLSC to derive income from these properties. Only at such point in time would the CLSC consider an exchange of these fee owned lands for lands of comparable value.

The four small and discontinuous parcels located near the Colorado River Aqueduct would not be desirable for inclusion in the national park boundary. These separate, small parcels are surrounded by lands managed by MWD to support the operation of the Colorado River Aqueduct. The MWD parcel group western edge forms a natural delineation for a boundary adjustment and is consistent with the boundary configuration as defined in the California Desert Protection Act of 1994.

Map 2-12: State School Lands Parcel Group



Townsite Parcel Group

Size and Ownership. The Townsite parcel group includes 25 parcels that make up an approximately 500-acre block of land. Most of the lands are part of a 460-acre patent for a millsite and campsite that was conveyed to Kaiser Steel Corporation in 1955 (U.S. Patent # 1 153422). Pursuant to the Act of July 8, 1952, (Private Law Number 790, 66 Stat. A130), the patent states that in the event that these lands are not used for a continuous period of seven years for "camp site, mill site or other incidental purposes in connection with mining operations by Kaiser Steel Corporation or its successors in interest," the land will revert in fee to the United States. Private Law 790 also conveyed a 200 foot right-of-way to Kaiser to construct a railroad, roads, and pipelines needed to support the mine and Townsite. The right-of-way is also subject to the reversionary clause of Private Law 790. The final court order resolving the landfill litigation provides that the continuous seven-year period of non-use related to Private Law 790's reversionary interest does not apply to the period between 1999 (the date of the land exchange) and 2014 (the end of the lawsuit.) Therefore, any non-use by KEM from 1999 to 2014 would not trigger the reversionary clause. Today, KEM is the owner of the Townsite and railroad right-of-way. Future non-use of these properties could cause the United States to seek a reversion of these properties. All of the Townsite parcels are owned by KEM with the exception of one small parcel (0.15 acres) that is listed as owned by General Telephone Company of California c/o GTE in Riverside County assessor data. *See Map 2-13: Townsite and Eagle Mountain School Parcel Groups.*

Primary vehicular access to the Townsite is by Kaiser Road, which enters the Townsite from the east. Kaiser Road connects to State Highway 177 and Interstate 10 at Desert Center approximately 11 miles south of the Townsite. The Kaiser Eagle Mountain Railroad traverses the Townsite's southern and western perimeter. Although many structures have been moved, demolished or fallen into disrepair, the former Townsite's overall footprint and development pattern is still evident. While portions of the Townsite are visible from Kaiser Road, the area is fenced with controlled access.

Current Uses and Existing Rights. During full-scale operation of the Eagle Mountain Mine, the Townsite supported a community that reached 3,700 during its peak occupancy. Residents included employees of the mine and their families. Kaiser constructed 416 homes, trailer spaces, and 450 dormitory rooms and apartments. Other supporting community infrastructure included commercial services, recreational facilities, churches, schools, medical services, and a full range of utilities and services including water, sewer, electrical, and telephone (Kaiser Steel Corporation 1978, Riverside County and BLM 1996).

When Kaiser suspended regular iron-mining operations in 1983, the Townsite was closed and its residents moved elsewhere. The Townsite was vacated with the exception of a few remaining Kaiser employees. From 1986 through 2003, a privately run state prison occupied a portion of the Townsite. The shopping center structures were renovated to accommodate this use and employees of the correctional facility resided in the residential areas of the Townsite. After its closure in 2003, members of the Board of Supervisors of Riverside County studied the site as a potential county correctional facility; however, a 2007 feasibility study recommended that the County not pursue this option (DMJM Design/AECOM, 2007).

As described in the environmental impact statement (EIS) for the previously proposed landfill, water for irrigation and domestic (except for drinking water) purposes within the Townsite is provided by two Kaiser-owned wells in the Chuckwalla Basin. These wells pump water approximately 7 miles to the Town Booster Station where the water is chlorinated

and then pumped to and stored in two 500,000-gallon tanks located directly west of the Townsite. The Town Booster Station is located north of the Townsite, and south of the coarse tailings pile. From these tanks, the water is gravity-fed to the Townsite. Drinking water must be brought in from off-site. Also described in the landfill EIS, a separate unchlorinated industrial water system is located in the former mineral processing and equipment maintenance area (Riverside County and BLM 1996).

Sewer service to homes and structures within the Townsite is provided by the Eagle Mountain Mine wastewater collection and treatment system. Southern California Edison Company provides power to a substation for distribution to the mine and the Townsite. Southern California Gas Company provides natural gas to the area. Telephone services are provided by through a substation located within the Townsite (Riverside County and BLM 1996). Currently, many of the structures are in a state of disrepair from disuse. If historic structures are not maintained on a regular basis they fall into poor or ruined condition. As structural condition worsens, structures become harder and more expensive to maintain.

Portions of the Townsite parcel group are proposed to be used for the pumped storage hydroelectric project (approximately 220). Eagle Crest is not proposing to use the Eagle Mountain Townsite for employee housing, but expects that workers needing short-term housing would find lodging in the available houses, rental units, or hotel/motel rooms in the area (FERC 2012). Eagle Crest Energy Company is proceeding with a preservation program for Townsite structures per the FERC license agreement for the pumped storage hydroelectric project.

Per its mining agreement with KEM, EMMR will use portions of the Townsite parcel group for above ground mining operations and administrative purposes.

Local Planning and Zoning. Land use designations that apply to the Townsite parcel group include:

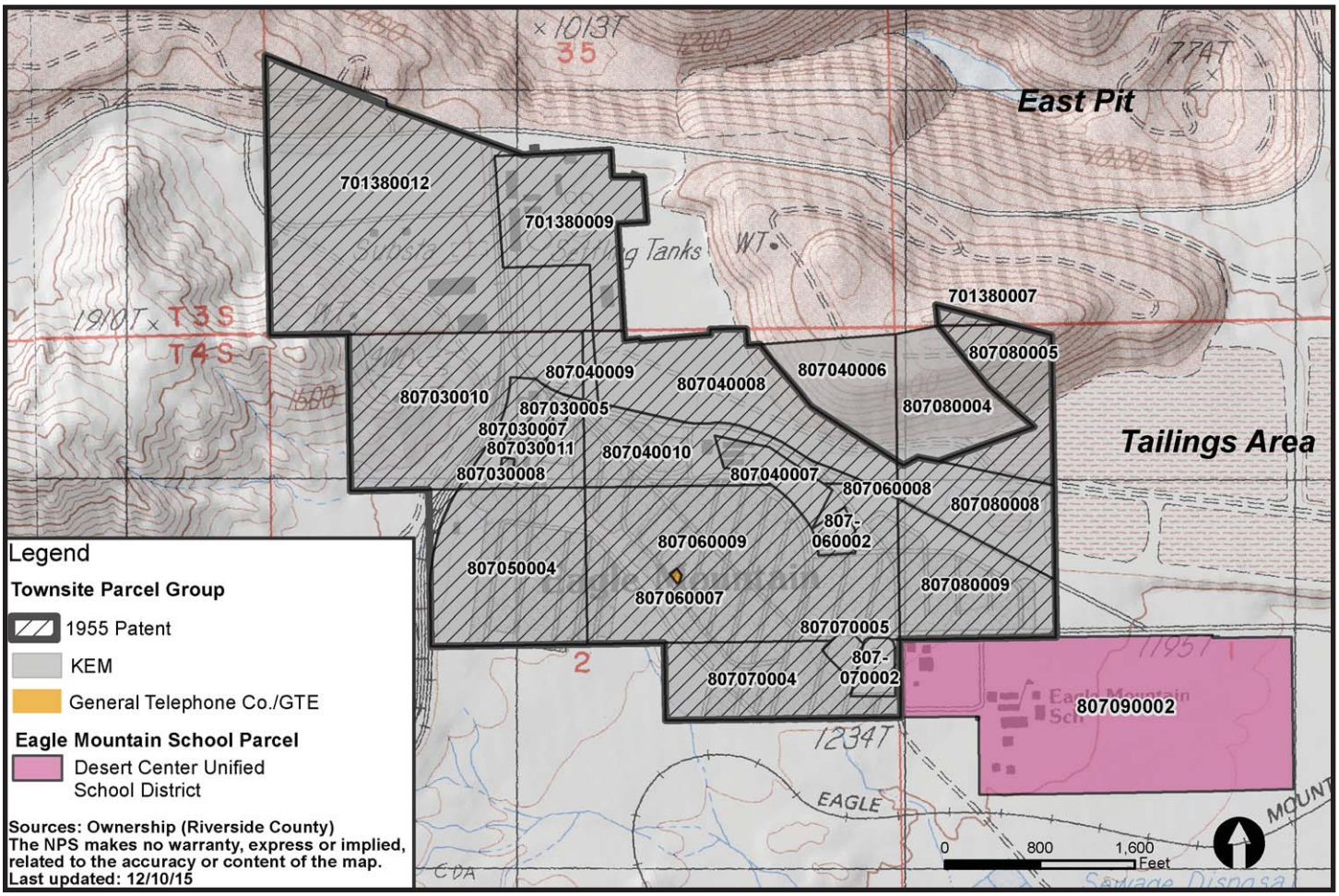
- The *Community Development - Public Facilities (PF)* land use designation applies to the northern portions of the Townsite parcel group. This land use designation reflects the previous proposal to construct a landfill on the Kaiser Eagle Mountain Mine site. This designation allows for civic uses such as County administrative buildings and schools.
- The *Open Space – Recreation (OS-R)* land use designation applies to several areas of the Townsite. This designation allows for recreational uses including parks, trails, athletic fields, and golf courses.
- The *Commercial Retail (CR)* land use designation would apply to former commercial areas within the Townsite. It would allow for local and regional serving retail and service uses.
- The *Medium Density Residential (MDR)* land use designation would allow single-family detached and attached residences with a density range of two to five dwelling units per acre. Limited agriculture and animal keeping is permitted, however, intensive animal keeping is discouraged. This designation generally applies to the residential areas of the Townsite.
- The *Low Density Residential (LDR)* land use designation allows for single-family detached residences on large parcels of ½ to 1 acre. Limited agriculture and animal keeping is permitted, however, intensive animal keeping is discouraged.
- The *Very Low Density Residential (VLDR)* land use designation allows for single-family detached residences on large parcels of 1 to 2 acres. Limited agriculture and animal keeping is

permitted, however, intensive animal keeping is discouraged.

The Townsite parcels are zoned *Specific Plan* relating to *Specific Plan No. 306, Eagle Mountain Townsite*. Adopted in 1997, Specific Plan No. 306 is a community development specific plan that was designed to guide redevelopment of the Townsite to accommodate employees of the formerly proposed landfill (Riverside County 2003). Had the landfill been constructed, the Townsite would have been revitalized to provide housing for the landfill employees. However, there is no intent to repopulate the Townsite to support the pumped storage hydroelectric project, the current planned use for the area.

Analysis – Townsite Parcel Group. Inclusion of the Townsite in the park boundary would create logical boundary delineation when combined with the federal and private land parcel groups. However, inclusion of the Townsite in the national park boundary is not feasible at this time due to the use of some areas for commercial mining activities and construction of the proposed pumped storage hydroelectric project. At such time as these activities cease, and when the Townsite would revert back to federal ownership, this parcel group would form a logical boundary delineation that could offer a range of opportunities to protect the cultural resources and provide public enjoyment opportunities for education, research, recreation, and interpretation.

Map 2-13: Townsite and Eagle Mountain School Parcel Groups



Aerial view of the Eagle Mountain Townsite in 2015.

Eagle Mountain School Parcel

Size and Ownership. An approximately 90-acre parcel located adjacent to and east of the Townsite parcel group is owned by Desert Center Unified School District for the operation of Eagle Mountain School. The school could be considered a component of the cultural landscape associated with the Townsite.

Current Uses and Existing Rights. The school is in active use and serves the greater Chuckwalla Valley. Enrollment is relatively small (23) since the full-scale operations of the Eagle Mountain Mine ceased in 1983 and the Townsite was vacated. Riverside County maintains the portion of Kaiser Road that accesses the school.

The Eagle Mountain School conducts classes for kindergarten through eighth grade and occupies the former high school campus. The adjacent middle school campus, which is also owned by the school district, is currently inactive but could accommodate an additional 150 students (Riverside County and BLM 1996).

Local Planning and Zoning. The *Desert Center Area Plan* land use designation for the Eagle Mountain School parcel is *Low Density Residential (LDR)*. Allowable uses include single-family detached residences on large parcels of ½ to 1 acre and limited agriculture including intensive equestrian and animal keeping. The zoning classification for the school parcel is *Controlled Development (W-2)*. As previously stated, this zone allows for a wide range of permitted uses. Uses allowed by approval or by permit include "educational institutions, public parks and playgrounds (Riverside County 2015b)."

Analysis – Eagle Mountain School Parcel. The Eagle Mountain School parcel would not be feasible for addition to the national park boundary at this time given its current use by the Desert Center Unified School District.

Metropolitan Water District of Southern California Parcel Group

Size and Ownership. The Metropolitan Water District of Southern California (MWD) owns and operates structures and facilities in connection with the Colorado River Aqueduct, which forms the eastern boundary of the study area. MWD is a regional wholesaler that delivers water to 26 member public agencies serving 19 million people living in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties (MWD 2014). MWD owns 30 parcels totaling approximately 2,850 acres of land that follows linearly along the Colorado River Aqueduct for the operation and maintenance of the aqueduct. MWD maintains facilities to support the aqueduct as well as permanent easement rights of way for its ditches and canals. The Colorado River Aqueduct defines the western end of the study area.

Public access is not permitted to the aqueduct and related facilities. However, where the aqueduct is above ground it is visible where public roads that cross the canal. Eagle Mountain Road provides access to the Eagle Mountain Pumping Plant to the south, but the road is gated before reaching the pumping plant (FERC 2012).

Current Uses and Existing Rights. The Colorado River Aqueduct is an open channel from the northeastern extent of the study area to approximately east of the Eagle Mountain Mine East Pit. South of the East Pit, the aqueduct flows underground into a concreate tunnel and then flows by gravity to the MWD's Eagle Mountain Pumping Plant, located on the southeastern edge of the study area on Kaiser Truck Road. Along the northern section of the aqueduct within the study area are constructed levees. The pumping plant location also includes housing for MWD employees. Near the pumping plant, MWD operates a small airstrip (FERC 2012). A 400 foot wide 230 kV transmission line and a 33-kV distribution line that run southwest to northeast along Power

Line Road is maintained by MWD (BLM and DOE 2012).

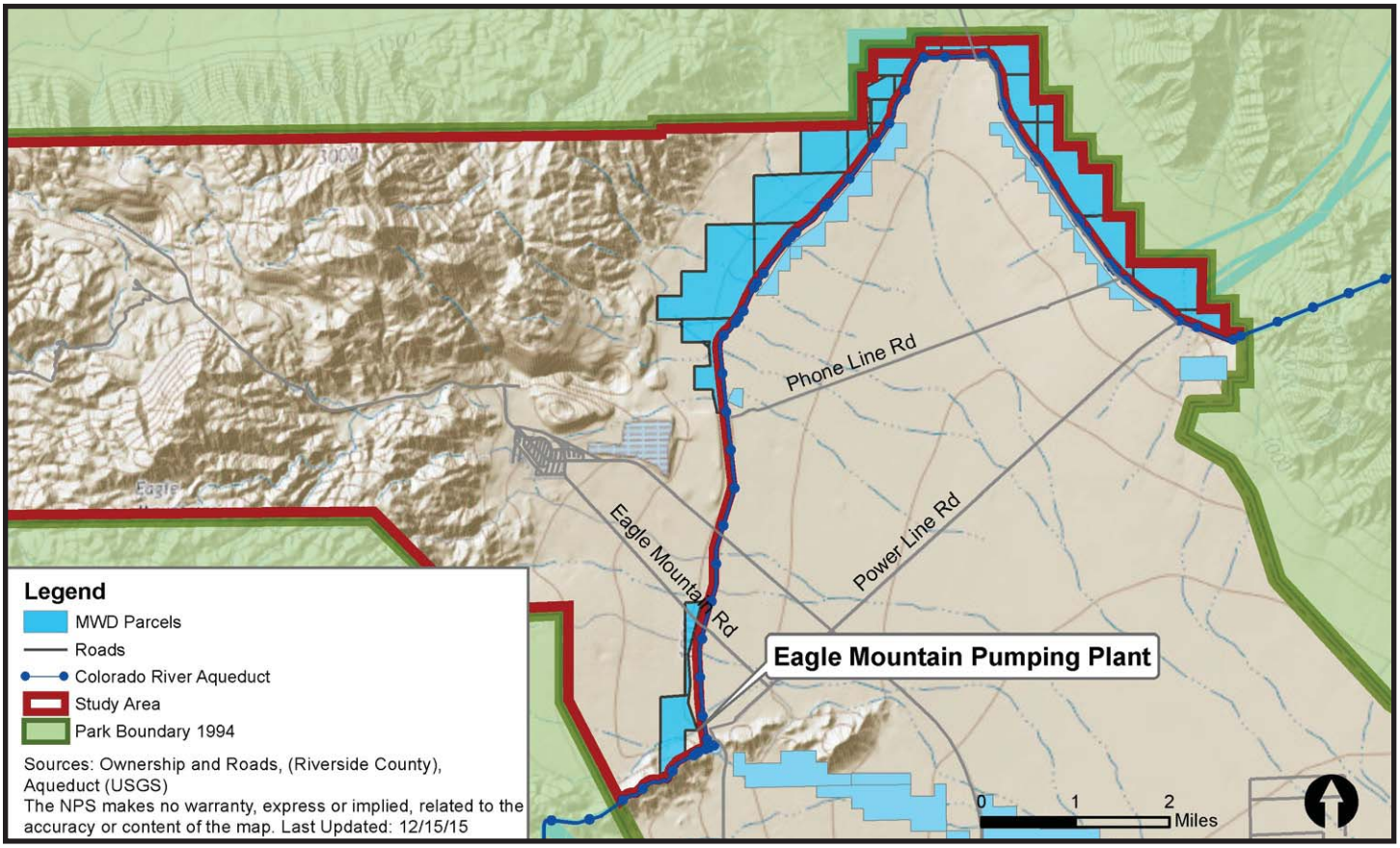
Planning and Zoning. The *Desert Center Area Plan* land use designation that applies to the MWD lands is *Open Space-Conservation (OS-C)* (Riverside County 2015a).

The MWD parcels are within two zoning areas, the *Natural Assets Zone (N-A)* (below Eagle Mountain Road) and the *Mineral Resource Zone (M-R-A)*. Permitted uses in areas zoned *Natural Assets Zone* include dwellings and accessory buildings, field and tree crops, grazing subject to stated limitations, and apiaries. Several other uses, including utility substations, are allowed by approval or by permit. For the *Mineral Resources Zone(M-R-A)*, permitted uses include: agricultural uses; electric and gas distribution, transmission substations, telephone and microwave stations; water well and other uses related to the storage and distribution or water; and riding and hiking trails, recreation lakes, and campgrounds. With the issuance of a surface mining permit various uses related to mining are allowed (Riverside County 2015b).

Analysis – Metropolitan Water District of Southern California Parcel Group. Because the lands within this parcel group are directly managed by MWD for the purposes of maintaining the facilities and infrastructure associated with the Colorado River Aqueduct these lands would not be feasible for inclusion in the park boundary. MWD requires unobstructed access to its facilities and properties at all times in order to repair and maintain its aqueduct system. Although the aqueduct has historical value, the area would not be available for visitor opportunities.

The edge of this parcel group forms a logical delineation that would include the previously described parcel groups, and is consistent with the park boundary as redefined in the California Desert Protection Act of 1994. The 1994 boundary near the study area extends only to the parcels managed by the MWD.

Map 2-14: Metropolitan Water District of Southern California (MWD) Parcel Group



Colorado River Aqueduct.

Conclusion – Boundary Size and Configuration

As determined in the previous section, all of the parcel groups, with the exception of the Metropolitan Water District of Southern California Parcels, contain resources and public enjoyment opportunities related to the park purpose of Joshua Tree National Park and could increase park management efficiency. Based on the evaluation of ownership patterns, existing rights, current land use and management policies for the six parcel groups, approximately ~~25,070~~ 20,005 acres would be considered feasible for inclusion in the national park boundary at this time, forming a logical boundary configuration that includes significant resources and public enjoyment opportunities related to park purposes. This would include most of the federal land parcel group, portions of the private land parcel group, and the western State School Land parcels. As stated in the parcel group analysis, certain lands, such as the State School Lands and certain private lands are feasible under certain conditions and would not be available for inclusion in the park boundary until such conditions are met.

Properties with important resource values that would not be feasible at this time are considered *potentially feasible* (approximately 8,610~~3,530~~ acres), meaning that when current uses cease the lands would then be desirable for addition to the park boundary. Those areas determined potentially feasible include lands associated with the proposed Eagle Mountain Pumped Storage Hydroelectric Project, the Townsite, and the adjacent school parcel. Existing uses of these parcels are currently not compatible with park management.

The MWD parcel group and State School Land parcels adjacent to the Colorado River Aqueduct are not considered feasible for park management since these lands contain facilities and infrastructure actively used for management of the Colorado River Aqueduct. The MWD parcels also form a logical boundary break that is consistent with the park boundary as defined in the California Desert Protection Act of 1994.

For the lands considered feasible and potentially feasible, three different approaches to boundary adjustment configurations are evaluated in *Chapter 3: Alternatives*. One approach (Alternative B) considers a boundary adjustment that includes only federal lands. These lands are under consideration for segregation and withdrawal as authorized by FLPMA. Another approach explores an alternative that includes the federal, state, and private lands determined feasible at this time (Alternative C). The final approach represents a long term vision for a park boundary addition (Alternative D) which incorporates strategies for including lands considered suitable and potentially feasible, should they become available for park management.

Table 2-2: Summary of Areas Determined Feasible for Addition to the Park Boundary (Boundary Size and Configuration)

Parcel Group	Total Acreage	Not Feasible (Acres)	Potentially Feasible (Acres)	Feasible (Acres)
Federal Lands Parcel Group	23,140	0	▪ 620 acres allocated to the pumped storage hydroelectric project ▪ ~4,850 acres associated with the pumped storage hydroelectric project right-of-way would only be considered for transfer following construction of the project	~~22,515~~17,670
Private Lands Parcel Group	4,550	0	▪ 805 acres allocated to the pumped storage hydroelectric project ▪ 1,~~515~~ 715 acres in private ownership (mining and other private uses) ▪ 30-acre private parcel	2,~~230~~000
State School Land Parcel Group	~~340~~379	▪ ~~15~~ 43 acres of lands located adjacent to the Colorado River Aqueduct		~~325~~335.7 (available only if surrounding private lands and mineral interests are relinquished to the NPS)
Townsite Parcels	500	0	▪ 220 acres allocated to the pumped storage hydroelectric project ▪ 280 acres (mining and private other uses)	0
Eagle Mountain School Parcel	90	0	90	0
MWD Parcel Group	2,850	▪ 2,850 lands used for operation and maintenance of the Colorado River Aqueduct	0	0
Total (Acres)	~~31,470~~~31,510	~2,~~870~~895	~8,610~~3,530~~	~~25,070~~~20,005

Other Factors

Safety

Given the long history of mining in the area, there are remnant mine shafts and other features left on the landscape. Areas used for mining are often associated with safety issues and resource impacts, depending on the extent of the mining activities. Mine sites can also present an immediate danger of physical injury or death due to open vertical shafts and horizontal adits (entrances to a mine). Mill sites that are no longer in use may contain deteriorating buildings and equipment. Dangers may include deadly gases and asphyxiation, collapsing mine walls, hazardous substances, and rotting structures. Mitigation can range from temporary measures including fencing and signs to more costly permanent measures, including steel and concrete covers. The only permanent mitigation action is to fill in shafts and adits and demolish or remove buildings and structures. However, some features have cultural values while others contain sensitive bat species (Burghart, Norby and Pranger 2014).

Mining and other mineral resource development has occurred in many areas throughout the United States that are now units of the National Park System. The NPS conducted a Systemwide inventory and assessment of its abandoned mine lands (AML) sites from 2010 through 2013, identifying 37,050 AML features in 133 NPS units. The majority of features (81%) are located in California desert national parks such as Joshua Tree National Park. The BLM has conducted similar inventories for BLM-managed federal lands in California (Burghart, Norby and Pranger 2014).

Cultural resources related to mining history are a component of the park's history and significance. National Parks such as Joshua Tree have a long history of mitigating the safety concerns related to mining infrastructure that has been applied to current mine sites throughout park. Joshua Tree National Park has worked to address the safety and environmental hazards associated with abandoned mine lands while seeking to retain resources with cultural values. This has included capping or gating existing mine shafts or adits, stabilizing mining superstructures, and heavy metal mineral clean up adjacent to milling sites. For mine sites not considered abandoned, the NPS would work with responsible parties to address the safety issues and other hazards through a variety of methods appropriate to the type of resources and the relative safety risk.

Construction of the Eagle Mountain Pumped Storage Hydroelectric Project may also pose safety issues. However, the reservoirs would be fenced, and access to other nearby project features would be controlled through security gates and enforced with onsite personnel (FERC 2012).

Hazardous Substances

The Department of the Interior discourages acquisition of property contaminated with hazardous substances. Department policy states that contaminated lands should not be acquired unless otherwise directed by Congress, court order, or as determined by the Secretary of the Interior. Prior to acquiring any land for inclusion in the park boundary, properties under consideration would be assessed for environmental contaminants (Level I environmental site assessment). If contamination exists, further evaluation would take place to determine the feasibility of managing the land given the potential liability and costs for remediation and/or restoration. This site assessment would be sufficient to evaluate the potential for environmental liabilities associated with a property acquisition. NPS policy requires subsequent assessments if known or potential environmental contamination is identified. These additional phases include a Level II Survey to conduct further research or investigation into areas of potential concern, including characterizing the nature and extent of contamination, and a Level

III Survey to determine the potential cost of remediation. Costs of remediation could be borne by responsible parties prior to transfer to the NPS.

Previous but now out-of-date environmental site assessments were completed for some lands within the study area. In 1996, the BLM completed Level I survey checklists for the Townsite and BLM administered lands that were proposed for a land exchange with Kaiser for purposes of constructing a solid waste landfill. The Level I surveys identified no potential hazardous substances either on or in the vicinity of the Townsite and concluded that "[t]he above described lands have been examined in accordance with Section 120(h) of CERCLA. No evidence of recorded information was found to indicate that any hazard substance was stored for one year or more or disposed of or released on the property (Riverside County and BLM 1996).

Although no hazardous substances were found to be stored on the Townsite lands, the buildings and structures in the Townsite likely contain hazardous materials that may require extensive abatement such as lead from paint and asbestos. If such lands were to revert back to the United States, some level of remediation would need to be considered at that time.

Invasive Exotic Plant Species

"Alien plant invasions constitute one of the most pervasive, fast-moving and often visually striking manifestations of global change" (Arroyo et al., 2000). According to Executive Order 13112 an invasive plant species is defined "as an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health." Nonnative invasive plants can establish beyond their native range often through intentional or accidental transportation of whole plants or plant propagules. Some invasive plants are escapees from cultivation and over time can become naturalized. The propagules of invasive plants can piggyback within crops or on domestic animals or even on the footwear of nature lovers out for a hike (Arroyo et al., 2000). Regardless of the pathway for introduction, invasive plants are widely recognized as a major threat to native species, only behind that of habitat loss (Wilcove et al., 1998; Levine et al., 2003; Thompson, 2005). There have been many well documented, wide spread plant invaders to the desert ecosystem, such as red brome (*Bromus madritensis*), cheat grass (*Bromus tectorum*), and salt cedar (*Tamarisk ramosisima*). In 2014, approximately 63 plants (~8%) on Joshua Tree's plant list were considered nonnative, 41 of which were classified as invasive (NPS 2014).

The abundance of exotic invasive plants within the federal lands in the study area is not currently known. However, given the remoteness of the area, such species are most likely located along the few road corridors that traverse the area. With annual rainfall in the area of 2"-4", the spread of exotic vegetation is often limited to drainages and other areas with higher than normal soil moisture content, such as the median along roadways. The environmental impact statement from the former landfill project notes that activities associated with mine operations, including the development of the Townsite, introduced exotic plant and animal species to the local ecosystem, and fragmented habitat through road construction and other development (Riverside County and BLM 1996). The environmental impact statement for the pumped storage hydroelectric project documents three known species for the disturbed mine lands and Townsite areas. These species include red brome (*Bromus madritensis*), cheatgrass (*Bromus tectorum*), Mediterranean split grass (*Schismus spp.)*—and two dicots—Sahara mustard (*Brassica tournefortii*) and red-stem filaree (*Erodium cicutarium*). As a requirement of the FERC license for the hydroelectric project, Eagle Crest intends to complete an invasive plant species monitoring and control plan that will focus on prevention,

early detection and eradication to prevent the spread of invasive plant species (FERC 2012).

Regional Growth and Development

Human activities originating outside park lands, including illegal roads and trails crossing park boundaries, as well as developments adjacent to the park, have impacts on resources within the park. Illegal roads, trails and associated driving activities damage and fragment habitat, disturb wildlife, introduce nonnative flora and fauna and alter connectivity (Ouren et.al. 2007). In addition, developments near park boundaries can disturb biota within the park, alter or block key migration corridors, and cause habitat destruction/fragmentation on lands adjacent to the park (Ennon et.al., 2012; Lovich and Ennon 2011; Rudnick et al. 2012).

Maintenance of biodiversity in the park depends on connectivity between habitats both within and outside park boundaries (Hansen et al., 2011). Developments along high-speed transport corridors to the northwest and southwest of the park pose barriers to species movements, inhibiting access to habitat outside of the park. Furthermore, since the 1970s, housing densities in these areas have increased from generally rural to exurban. Demographic projections forecast that by 2050 these areas will be heavily suburban. This land use intensification will precipitate habitat loss, fragmentation and loss of connectivity, increased colonization and spread of invasive species, and increased disturbance to ecosystems and species (Monahan et al. 2012). Large scale development of desert lands directly reduces foraging habitat available to raptors. It is not directly understood what impact this development will have on raptor and eagle populations as a whole. The park is involved with and comments on these issues and will continue to do so (NPS 2014).

The California desert has been the focus of large scale renewable energy projects. As previously stated, the Chuckwalla Valley in Riverside County has a substantial amount of existing and proposed utility scale renewable energy projects. The Desert Sunlight Solar Farm (3,700 acres), one of the largest of its kind, is located two miles east of the study area. Adjacent to the Desert Sunlight Solar Farm, another proposed solar energy project, Desert Harvest Solar Project would occupy another 1,200 acres of public lands. Two miles east is a focused development zone for renewable energy projects, the Riverside East Solar Energy Zone, where over 140,000 acres of land are allocated for renewable energy development. As of April 2015 a total of seven projects were approved or pending, totaling approximately 30,000 acres (BLM 2015c).

The proposed pumped storage hydroelectric project, surrounded on three sides by national park lands, could potentially result in impacts to the following park resources: groundwater, air quality, wildlife, night skies, viewshed, natural soundscape, and wilderness values. Eagle Crest has agreed to pursue night sky minimization measures and air and water quality protection measures; to conduct groundwater analysis; and to prepare:

- a monitoring well and seepage management plan;
- a desert tortoise protection plan;
- a predator control plan;
- an avian protection plan;
- a special status plants protection plan;
- an invasive species monitoring and control plan; and
- an historic and cultural properties management plan (FERC 2014).

Eagle Crest has prepared many of these plans and has afforded NPS, BLM and agencies the opportunity to comment on these plans. The NPS will continue to work with Eagle Crest Energy Company to seek ways to mitigate the effects of this development.

Effects of Climate Change

Joshua Tree National Park has already experienced a significant increase in temperatures and projections from global circulation models are consistent in forecasting further temperature increases for the foreseeable future (Gonzalez 2012; Kunkel et al. 2013). During the past century, average temperatures have increased by about 1° C and the 21st century projected rate of increase is about 4° C per century for moderate-emission scenarios. Kunkel et al. (2013) estimate about half this increase – about 2° C – will occur by mid-century. These projected changes will eventually affect virtually every natural resource in the park, including the iconic Joshua tree (Cole et al., 2011 and Barrows & Murphy-Mariscal 2012) and other species found throughout the park (Barrows 2009).

Impacts from climate change may increase or extend droughts, threatening area water supply, including for wildlife. Rising temperatures and altered rainfall may cause additional stress on native habitat and increase air pollution. Such changes could cause native and endemic plants to move to higher elevations when possible. There would also be transition northward and/or toward the coast, following the shifts in their preferred climate. The first climate change response identified by Barrows (2009) is to maintain connectivity to regions outside the park – a goal that will be increasingly challenged by land uses outside park boundaries (NPS 2014).

Conclusion – Other Factors

Factors that could affect the feasibility of including study area lands in the park boundary include safety, hazardous materials, exotic species, regional development, and the effects of climate change. Safety threats from mined lands would be addressed as needed. For areas that have been previously surveyed (some federal lands and the Townsite parcels), hazardous materials were not found to be stored or used on site. These surveys are now out-of-date and the areas would need to be reassessed before NPS could consider land acquisition. The structures in the Townsite may require abatement of hazardous building materials such as asbestos and lead paint. However, these lands are not considered feasible additions to the park at this time. The NPS would conduct environmental site assessments before acquiring any lands to determine potential hazards.

Exotic species are most likely to occur in previously disturbed areas, along roads, utility lines, and mining pits. However, most lands considered feasible for inclusion in the park at this time are largely undisturbed. The NPS would address any exotic species infestations which would likely entail additional costs for the NPS. Despite these threats, the area contains mostly undeveloped lands which contain significant resources. Including study area lands within the park boundary would provide the NPS with an opportunity to directly manage and protect habitat connectivity which is important for the mitigation of climate change effects and the cumulative impacts of regional growth and development.

Impacts on Local Communities and Surrounding Jurisdictions

Population near the study area is sparse and primarily concentrated in the communities of Desert Center and Lake Tamarisk. Named for its location in the middle of the Colorado Desert, Desert Center is a remote community. The nearest cities—Indio to the west and Blythe to the east—are both more than 50 miles away via Interstate 10. As stated in the *Riverside County Desert Center Area Plan*, "because of its remote location, Desert Center is not impacted by any city. In fact, it is separated even from the nearest area plans and therefore shares boundaries with none of them (Riverside County 2003)." The community of Lake Tamarisk is a small retirement community located a few miles north of Interstate 10, east of Kaiser Road. This community is comprised of single family homes, duplexes and mobile homes and includes a 9-

hole golf course. It was originally constructed by Kaiser Steel Corporation to alleviate housing demand at the Townsite during full-time mining operations. Lake Tamarisk residents must go to Desert Center for commercial services (Riverside County 2003, Riverside County and BLM 1996).

The area's population is mostly clustered near the I-10 freeway interchange and nearby at Lake Tamarisk. The 2014 population of Desert Center is estimated at 203. In terms of industry, the dominant sectors in Desert Center include: 1) transportation and warehousing, and utilities and 2) arts, entertainment, recreation, accommodation, and food service. The area contains mostly commercial services and institutional land uses. Most land is open desert. However, agricultural lands, primarily jojoba, are also located in the area (Riverside County 2003, U.S. Census 2014). More information about regional demographics and socioeconomic environment is provided in the *Affected Environment* in *Chapter 4*.

Providing new visitor opportunities in the Eagle Mountain area could have a range of economic and social impacts on the surrounding communities. Most impacts would be beneficial as national park visitors typically provide an economic benefit to the surrounding community. In 2014, the National Park System received over 292 million recreation visits. NPS visitors spent $15.7 billion in local gateway regions (defined as communities within 60 miles of a park). The contribution of this spending to the national economy was 277 thousand jobs, $10.3 billion in labor income, $17.1 billion in value added, and $29.7 billion in output. The lodging sector saw the highest direct contributions with 48 thousand jobs and $4.8 billion in output directly contributed to local gateway economies nationally. In California alone, national park visitors spent an estimated $1.7 billion in local gateway regions while visiting NPS lands in California. These expenditures supported a total of 24.2 thousand jobs, $935.2 million in labor income, $1.4 billion in value added, and $2.4 billion in economic output in the California economy. In 2014, visitors to Joshua Tree National Park spent an estimated $73.8 million in local gateway communities. These expenditures supported a total of 1,000 jobs, $38 million in labor income, $60 million in value added, and $97.2 million in economic output in local gateway economies surrounding Joshua Tree National Park (Cullinane, Huber, and Koontz 2015).

The extent to which the community would see beneficial impacts is largely related to access and visitation. The lands that are currently feasible for inclusion in the national park boundary are primarily accessible from the national park along an unimproved road passable only using four wheel drive vehicles. Given the conditions of existing roads and the limited access to portions of the study area, accessing the Eagle Mountain area from the park entrances at Cottonwood Springs (west of the study area) is currently very difficult. Further improvement of Black Eagle Mine Road may encourage more visitation to the area. However, this would not likely have an effect on the communities of Desert Center or Lake Tamarisk as visitors would enter through either the Cottonwood Springs or Twentynine Palms park entrances.

If KEM's private lands within the Townsite reverted to the federal government and became available for public use, easy access from Interstate 10 and the wider range of visitor experiences that could occur in this area may encourage more visitors to the area, generating jobs and potential revenue for the local community. Through public-private partnerships, the NPS, BLM, and local agencies and organizations could work together to create research and concession opportunities that support recreation and conservation in the Townsite area. If lands remain under BLM-administration, such partnerships could be realized through the Recreation and Public Purposes Act (68 Statute 173; 43 U.S.C. 869 et.

seq.). This act authorizes the sale or lease of public lands for recreational or public purposes to State and local governments, and to qualified non-profit organizations. Examples of typical uses under the act are historic monument sites, campgrounds, schools, and parks. Additional visitation to the Townsite area and surrounding mine could generate some increase in traffic on the county-owned Kaiser Road.

A socioeconomic concern identified during the public scoping process was the potential effect of national park service management on the extraction of mineral resources. These comments expressed concerns that including lands in the national park would prohibit access to valuable mineral resources. Mining on national park lands is subject to NPS regulations at 36 CFR Part 9A where prospective operators hold mineral interests, unless or until these interests are purchased by the U.S. government. The purpose of the Mining in the Parks Act and related NPS regulations at 36 CFR Part 9A is to protect park resources and values that may be affected by the exercise of mineral interests. Many units of the National Park System contain unpatented and/or patented mining claims, which were either located before the park was established, or when the park was open to the location of new claims. Certain BLM regulations also apply to mining claims within national parks.

Existing commercial mining activities at the Eagle Mountain Mine would not be affected by inclusion in the park boundary unless access to parklands was needed for operations. In this case, an operations plan and permit would be needed from the NPS.

Although occurrence of recoverable precious metals (e.g., gold, silver, copper, silica, carbonate rock, roofing granules) has been documented for the Eagle Mountain area, the most profitable mineral extracted from the study area to date has been iron ore (BLM 2012, FERC 2010, Powell 1984). While iron ore reserves remain at the Eagle Mountain Mine, competition from abroad and other economic factors caused the mine to close in 1983 after 35 years in operation. While market conditions could change, creating future demand, with the construction of the pumped storage hydroelectric facility on the former mine site, and with the previous removal of on-site ore processing facilities, it is unlikely that full-scale operations would resume in the foreseeable future. The FERC environmental impact statement for the pumped storage hydroelectric project states, "Reclamation of existing rock and ore materials from both recoverable and bedrock sources present within the proposed central project area would not be possible once the project is constructed and is in operation. The iron ore present beneath the project facilities, and specifically the reservoirs, would only become accessible for mining operations in the future if the project were decommissioned." Additionally, the Fontana Steel Mill that was supplied by the Eagle Mountain Mine iron ore is now closed. Above ground mining from existing waste rock piles will likely continue where feasible.

Most of the land that would be affected by a park boundary adjustment is administered by the BLM, which contributes to the social and economic characteristics of the area, primarily by providing recreation and mineral resources and energy development. Public use of the lands considered feasible for addition to the park boundary would generally continue under NPS management. However some uses may change due to NPS policies. The transfer of jurisdiction of the federal lands ~~form~~ from the BLM to the NPS would withdraw the public lands from settlement, sale, location, and entry under the public land laws, including the United States mining laws, and leasing or other disposition under the mineral and geothermal leasing laws. This would have an adverse effect on mining as no new claims could be established in the area. However, existing mineral rights would not be affected.

If active unpatented mining claims were included within an expanded park boundary, extractive mining could occur on these unpatented mining claims if the claims are determined to be valid. Mining claims in NPS-administered areas must be determined to be valid, through the completion of a validity exam, before the NPS can approve a plan of operations for mining. To be valid, a mining claim must contain a discovery of a valuable deposit of a mineral, subject to location under the Mining Law of 1872. For a millsite to be valid, the millsite must be on lands that are non-mineral in character and be in use for mining, milling, or other mining related purposes.

Because BLM cost-recovery regulations do not authorize the recovery of costs associated with validity examinations on NPS lands, the cost of the validity exams would probably be borne by the National Park Service should lands be transferred for management as part of Joshua Tree National Park. However, the validity examination would be conducted by BLM personnel. Unpatented claimants could apply for temporary approval to continue mining in the NPS-administered areas until such time that a validity exam could be conducted.~~A validity examination could be a lengthy and costly process. However, NPS could permit claimants to continue to maintain and access claims during the validity examination process.~~

Recreational uses allowed on BLM-managed lands that could be affected by a boundary adjustment would include collecting, shooting, and open off-highway vehicle (OHV) use. The NPS could choose to establish designated OHV routes to continue to allow for this use in a manner that would not impact resources. Excluding the actively mined unpatented claims from the park boundary would minimize the impact on this use to some extent by allowing existing users to continue with these activities without having to meet the ~~burden~~ requirements of a validity exam. However, new claims would not be able to be located on lands included in the park boundary. It should be noted that these uses could be affected by the proposed BLM ACEC and NCL designations identified in the DRECP LUPA. If these proposals were implemented, any uses of the designated areas would need to be compatible with BLM objectives to protect nationally significant resources and values and areas of critical environmental concern. As part of the DRECP LUPA implementation, withdrawal of mineral entry may be considered for national conservation areas (BLM 2015a).

Additional information on regulations related to mineral extraction and an assessment of land use and social and economic impacts is provided in the evaluation of mineral resource and land use impacts in *Chapter 5: Environmental Consequences*.

Conclusion – Impacts on Local Communities and Surrounding Jurisdictions

The social and economic impacts of adding study area lands to Joshua Tree National Park would likely be beneficial and would support the feasibility of an addition to Joshua Tree National Park. A boundary expansion including lands determined feasible at this time based on configuration, ownership, and current use would likely result in very small impacts to the resident population of the area since visitor access would continue through the existing national park areas. However, at such time that lands associated with the Townsite and eastern portions of the mine were to become available, making the park accessible from Desert Center, additional visitor opportunities associated with new recreational and interpretive opportunities may arise providing economic benefits to the local community.

Including BLM-administered lands in the national park boundary would withdraw lands from future mineral entry. Unpatented mine and millsite claims owned by KEM would become subject to NPS regulations, however it is not anticipated that large scale mining would

occur on these claims. If existing unpatented mining claim areas with active mining are excluded from the park boundary, it could minimize the impact on current miners. However, this exclusion would also create challenges to federal land management creating a scenario where multiple agencies are managing lands in the same area under different, and sometimes conflicting, management policies.

A boundary expansion that excludes private lands associated with the proposed pumped storage hydroelectric project and the former Eagle Mountain Mine would have very little effect on mining in the area. It is unlikely that full scale mining of iron ore would resume given incompatibility with operation of the hydroelectric project, and the fact that most ore processing facilities have been dismantled. The Fontana Steel Mill that was supplied by the Eagle Mountain Mine has also closed. If the former Eagle Mountain Mine lands became available for inclusion in the national park boundary, existing mineral rights would be upheld. Such mineral rights could also be acquired where there are willing sellers.

Costs Associated with Operation, Acquisition, Development and Restoration

Costs associated with management of a national park unit include annual operational costs (primarily for staffing) and periodic costs for land acquisition, facility development, and resource management, including restoration. The NPS allocates funds to its park units in two categories—for daily operations (annual operating costs), and for specific, nonrecurring projects. Park managers use funding for daily operations to pay for visitor and resource protection, interpretation and education, and facilities operations, among other things. About 80% or more of the park units' daily operations funds pay for salaries and benefits for staff to carry out these mission components, while the remainder is used for overhead expenses such as utilities, supplies, and training.

Project-related funding supports non-recurring projects such as replacing roofs on park facilities or rehabilitating campgrounds. Project funding also supports natural resource inventory and monitoring programs. In addition to providing the funding for operations and projects, Congress has enacted legislation authorizing park units to collect visitor fees to provide additional funds to use for certain park operations related to visitor use. Visitor fees have been used to fund projects that address deferred maintenance needs, provide new visitor programs and services, protect resources, and improve and rehabilitate facilities. Fees are collected pursuant to the Federal Lands Recreation Enhancement Act (FLREA) (16 U.S.C. 6801-6814). Park units are also authorized to accept and use monetary and non-monetary donations to meet the purposes of the NPS. Examples include donations from non-profit cooperating associations or friends' groups for interpretive exhibits, park literature, new construction, enhancement of wildlife programs, or habitat restoration. The Mojave Desert Land Trust in recent years has acquired over 8,000 acres of land on and within the park boundary and has either sold or donated them to the National Park Service.

For the purposes of this study, the NPS has developed cost estimates based on the very broad needs typically associated with expanding a park boundary.

Operational Costs

Congress provides funding for the NPS through a number of appropriations accounts; the largest is the Operation of the National Park System (ONPS), which funds on an annual basis the management, operations, and maintenance of park areas and facilities and the general administration of each national park unit. Operational costs of national park units vary widely, depending on the amount and type of resources managed, number of visitors, level of programs offered, and many other factors. *Chapter 3: Alternatives*, explores potential

operational costs in more detail for each management alternative considered in this special resource study. Staffing needs vary amongst the alternative boundary configurations presented in Chapter 3.

Overall, the increase to total park acreage would be quite small relative to the existing park size. If the maximum amount of lands determined feasible for the park boundary at this time (~~25,070~~ 20,005 acres) were added to the park it would represent a ~~3.25~~2.6% increase in total land area whereas if lands both feasible and potentially feasible were added to the park boundary it would represent a 3.75% (~28,600 acres) increase in total land area.

The study area lands are operationally remote from existing park facilities and headquarters on the north side of the park and to the west at Cottonwood Springs. Driving time from park headquarters to the study area via Black Eagle Mine Road is over two hours. That distance is reduced to one and half hours if taking paved roads to the east of the park. However, permission to access the study area via this route would need to be granted from the private landowner, KEM. From the Cottonwood Springs administrative area, the Townsite area is an hour's drive. If administrative access could be obtained through an agreement with the private landowner, NPS staff could be duty stationed in the Desert Center area or at Cottonwood Springs, thereby improving operational efficiencies. Because visitors could not access the study area through the eastern private lands, visitation would likely remain very low in the area until such time that the private lands became available for inclusion in the park boundary.

Additional staffing needed would include law enforcement, resource management, maintenance, and interpretive positions. Existing staff for Joshua Tree National Park was 99.25 full time equivalent (FTE) in fiscal year (FY) 2015. The annual operating cost of the park, which is primarily comprised of staffing costs, was $6.06 million in FY15. Annual costs for a boundary expansion including the lands considered feasible at this time could range from $150,000 to $340,000. This represents a 2.5-5% increase in park operational costs. Inclusion of all of the lands (both feasible and potentially feasible (~28,600) would increase staffing costs to $440,000, approximately 7% over existing annual operating costs

Table 2-3: Summary of Operational Costs for a Boundary Expansion

Area	Potential Expansion Area	Additional FTE required	Costs for additional FTE	Percent increase over existing operations
Lands currently feasible	~~25,070~~ 20,005 acres	2-5	150k-340k	2.4%-5.5%
Lands currently feasible plus potentially feasible areas	~28,600 acres	7	440k	7%

Development and Other Facility Costs

For the newly added areas, the NPS would invest funds to inventory and document park resources, to develop management or treatment plans and educational/interpretive materials for these resources, and to develop or improve facilities for visitors and park operations. The lands that are determined as feasible for inclusion in the park boundary have few facilities. The primary initial facility costs for adding lands to the national park boundary would include maintenance and/or improvements to Black Eagle Mine Road and remediation of any mine features that would pose a safety risk to park visitors. Additional costs would be incurred in the event that the NPS were to acquire lands associated with the Townsite.

Development Costs for Feasible Lands. To maintain the Black Eagle Mine Road to the Eagle Mine area in its current condition would result in annual operations and maintenance costs of approximately $1,000 per mile. An additional maintenance FTE may be required to maintain the road.

If NPS were to improve the quality of the Black Eagle Mine Road over existing conditions (unimproved dirt road passable by passenger car), one-time capital costs are estimated to be approximately $35,000 per mile. Improvements could range from $157,500 to $385,000 depending on the boundary configuration, and the number of road miles that would be managed by NPS. The lower range would be for improvements to the road on federal lands only. The higher end of the range would be to improve the road for its entire length within the study area. Annual operations and maintenance costs for an improved road would be approximately $1,200 per mile.

Specific costs for additional visitor facilities such as trails, campgrounds, etc. would be dependent on management priorities and approaches identified through implementation planning.

There would be some costs associated with remediating the abandoned mine lands where features pose threats to safety or resources (~~,~~ the Eagle Mountain mine is not considered an abandoned mine). All such threats could be mitigated over time and with sufficient funding. This would be completed as needed and prioritized by safety and potential threat. At Joshua Tree National Park, NPS has the capabilities to mass produce prefabricated mine covers and gates. This enables a large number of sites to be mitigated economically and efficiently (USDI – OIG 2008). The NPS would not be responsible for reclamation of lands associated with the Eagle Mountain Mine. That responsibility would remain with Kaiser Eagle Mountain per the existing reclamation plan for the mine.

The NPS may incur costs for the completion of a validity exam for unpatented mining or millsite claims on federal lands that are transferred to the NPS if claimants planned to continue mining under NPS management. The exact costs are difficult to determine at this time and would depend on existing information available about the claims. For example, if minerals extracted

from the claims have previously been tested, then costs would be less. However, if collection and testing are required, costs could be much higher.

Development Costs for Potentially Feasible Lands. The lands determined potentially feasible could come with greater development and maintenance costs to the NPS, although these costs could vary depending on the amount of remediation and reclamation that KEM, EMMR and Eagle Crest are required to do when their operations cease. The Townsite area in particular has many buildings in disrepair for which asbestos and lead paint remediation may be required. A Riverside County study of the Townsite for a potential detention facility reported that there are significant physical deficiencies in the buildings, including visible roof leaks, deteriorated ceilings, deteriorated plumbing, and potential hidden damage. Also, most of the buildings are not insulated and cannot be brought into compliance with current energy reduction requirements (DMJM Design/AECOM 2007).

The Townsite also contains considerable electrical, water and sewer infrastructure that may need to be maintained. If such lands became available to NPS, the NPS would seek to engage in public-private partnerships to offset the costs. As discussed in the previous section, another consideration would be for BLM to retain administration of some of the Townsite lands and use of the Recreation and Public Purposes Act authorities (68 Statute 173; 43 U.S.C. 869 et. seq.) to allow for the sale or lease to State or local governments, or non-profit organizations for recreational or other public purposes to offset the costs.

Land Acquisition Costs

Land acquisition costs cannot be estimated without more specific proposals for land acquisition. The primary cost for a transfer of federal lands to NPS administration includes completion of an environmental site assessment (approximately $25,000) and other administrative costs associated with completing the transfer. Other lands could be acquired by donation. Eagle Crest Energy Company has indicated a willingness to donate excess lands not needed for the pumped storage hydroelectric project after construction is complete. NPS could also work with the Mojave Desert Land Trust to acquire lands or interests in lands with conservation value for donation to the NPS for inclusion in the park boundary. Land acquisition with federal funds would subject to funding availability. Joshua Tree National Park could update its land protection plan to set priorities for acquisition of future parcels, should they become available. NPS may also choose to purchase existing mineral rights where there are willing sellers subject to available funding.

Conclusion - Costs

The NPS finds that operational costs for a boundary expansion of Joshua Tree National Park in the Eagle Mountain area would be feasible. Most of the lands considered feasible at this time are BLM-administered federal lands which would be transferred to the NPS with little cost. Such lands contain few structures or facilities that the NPS would have to maintain. Areas both feasible and potentially feasible would result in a ~~3.25~~2.6-3.75% addition to overall park acreage. Future land acquisition from private owners would only be considered where landowners have expressed interest in selling or donation. Costs for development would be dependent on management priorities and approaches identified through implementation planning and the location, size, and configuration of future land acquisition. Potentially feasible lands have a considerable amount of infrastructure and facilities and thus would incur higher costs for ongoing maintenance depending on the number, condition and type of facilities that are retained. If such lands became available, the NPS would seek to have reclamation and remediation requirements completed by responsible parties

prior to transfer. Public-private partnerships could also be explored to offset costs for repair and maintenance.

Conclusion - Feasibility Criteria Analysis

The study finds that most lands within the study area (~~25,070~~ 20,005 acres) are feasible as an addition to Joshua Tree National Park (see *Map 2-15: Feasibility Findings*). These lands include:

- **The federal lands parcel group (~~22,515~~ 17,670 acres),** except those lands withdrawn for the Eagle Mountain Pumped Storage Hydroelectric Project as permitted.
- **The portions of the private lands parcel group (~2,~~230~~000 acres)** west of the proposed pumped storage hydroelectric project and proposed rights of way. NPS could seek to acquire other private lands and mineral rights if and when there are willing sellers. The Eagle Crest Energy Company has indicated that it would consider donation of lands excess to the proposed pumped storage hydroelectric project to the National Park Service, following construction of the project, when provisions related to the deed of trust have been met, and subject to existing mining agreements with EMMR.
- **The State School Lands parcel group (~~325~~ 335.7 acres),** except the four isolated parcels adjacent to the Colorado River Aqueduct. However, such lands would only become available if the surrounding private lands are donated to the NPS, removing the potential for future revenue for the School Land Bank Fund.

Including these resources in the park would help address current threats facing park resources, such as habitat fragmentation from regional development, and help mitigate the effects of climate change on park resources.

Although some portions of the study area are not feasible for NPS management at this time, such areas (~~3,530~~8,610 acres) contain cultural resource values and public enjoyment opportunities. These lands are considered to be potentially feasible for addition to Joshua Tree National Park. NPS could consider inclusion of these lands in the park boundary in the event that current or planned uses change. Land acquisition would only be considered where landowners have expressed interest in selling or donating lands to the NPS.

These lands include:

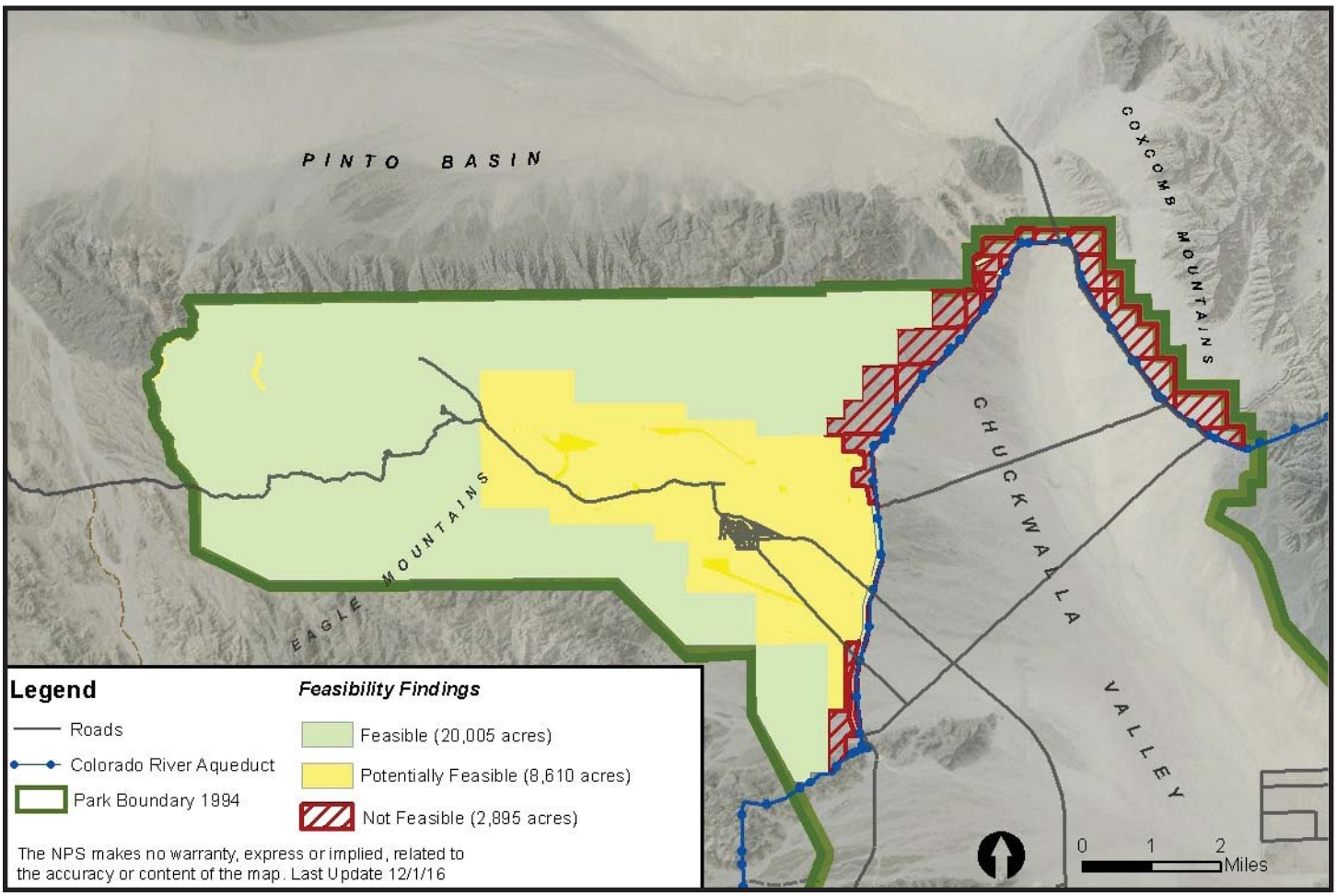
- FERC-licensed area for Eagle Crest Pumped Storage Hydroelectric Project, including areas associated with the proposed BLM rights-of-way would not be available for immediate transfer. (6,495 ~~1,645~~ acres)
- Privately-owned Commercial Mining Areas (~1,~~795~~ 995 acres)
- Eagle Mountain School (~90 acres)
- Privately-owned 30-acre parcel (patented)

Approximately 2, 895~~870~~ acres of land associated with the Colorado River Aqueduct are not considered a feasible addition to the park.

The NPS finds that operational costs for a boundary expansion of Joshua Tree National Park in the Eagle Mountain area would be feasible. Most of the lands considered feasible at this time are federal lands which would be transferred to the NPS with little cost.

Costs for development would largely be dependent on management priorities and approaches identified through implementation planning and the location, size, and configuration of future land acquisition. Socioeconomic impacts on local communities would largely be beneficial.

Map 2-15: Feasibility Findings (Updated)



Protection Alternatives Considered

The final criterion to evaluate eligibility of a boundary adjustment is a determination of whether other alternatives for management and resource protection are not adequate. The study finds that other means for resource protection in the Eagle Mountain area are not adequate for long-term protection of resources related to Joshua Tree National Park's purpose. Although the DCREP LUPA recognizes the significance of the resources in this area and proposes two separate BLM land use designations for the protection of those resources, the proposed designations apply to less than half of the federally managed BLM lands within the study area (estimated at 12,500 acres). Moreover, the ACEC designation would not provide for permanent protection of the area. Protection only extends to the life of the plan within which it was designated. In areas not identified for enhanced protection by the DRECP, allowable uses range from electrical generation plants (wind, solar or geothermal); gas, electric and transmission facilities and cables; communications sites; livestock grazing; mining; and low to moderate recreational activities. Conservation management actions identified for the unallocated BLM-managed lands may provide some additional protection of these areas, as would the adjacency of those lands to the proposed NCL and ACEC. The application of conservation measures however would likely be made on a project-by-project basis by the Bureau of Land Management. Riverside County planning and zoning would continue to define allowable uses on private lands.

Including lands in the Eagle Mountain area within the Joshua Tree National Park boundary would afford an opportunity to provide long-term comprehensive protection of the area and its resources. Without NPS management, the area would continue to be managed without a cohesive vision for protection or interpretive and educational opportunities, and more than half of the federal lands would continue to be available for resource intensive uses. Given the configuration of the area in relationship to the existing park boundary which surrounds it on three sides, incompatible uses could have adverse impacts on park resources such as wildlife, water resources, and wilderness values. Including the study area lands within the national park also gives NPS the ability to conduct on-the-ground monitoring, inventories, and research. The NPS could also expend funds on restoration activities and facility improvements that would provide better visitor access to the area.

Overall Conclusion - Boundary Adjustment Criteria Analysis

Study area lands west of the Colorado River Aqueduct and associated properties contain resources and public enjoyment opportunities related to the purpose of Joshua Tree National Park and are suitable for inclusion in the park boundary. This includes approximately 28,600 acres of lands within the federal, private, State School lands, Townsite, and Eagle Mountain School parcel groups. Adding the study area lands to the Joshua Tree National Park boundary would also improve access to the east side of the park, create a more logical boundary delineation, and allow access to NPS staff to monitor and document the resources of the area.

Of the lands determined suitable for addition to Joshua Tree National Park, approximately ~~25,070~~ 20,005 acres would be considered feasible for NPS to administer as part of Joshua Tree National Park at this time. Including these resources in the park would help address current threats facing park resources, such as habitat fragmentation from regional development, and would help mitigate the effects of climate change on park resources. Although some portions of the study area are not feasible for NPS management at this time, such areas (~8,610~~3,530~~ acres) contain resources with cultural resource values and public enjoyment opportunities. The NPS could

consider inclusion of these lands in the park boundary in the event that current or planned uses change. Land acquisition would only be considered where landowners have expressed interest in selling or donating lands to the NPS. Approximately 2, 895~~870~~ acres of land associated with the Colorado River Aqueduct is not considered a feasible addition to the park.

The study finds that operational costs for a boundary expansion of Joshua Tree National Park in the Eagle Mountain area would be feasible. Most of the lands considered feasible ~~at this time~~ are federal lands which could be transferred to the NPS with little cost. Such lands contain few structures or facilities that the NPS would have to maintain. Areas both feasible and potentially feasible would result in a ~~3.25~~2.6-3.75% addition to overall park acreage. Costs for development would be dependent on management priorities and approaches identified through implementation planning and the location, size, and configuration of future land acquisition. Socioeconomic impacts on local communities would largely be beneficial. Location of new mining claims would be precluded. However existing rights would be upheld subject to NPS policies for mining in the parks.

The study finds that other means for resource protection in the Eagle Mountain area are not adequate for long-term protection of resources related to Joshua Tree National Park's purpose. Including lands in the Eagle Mountain area within the Joshua Tree National Park boundary would provide an opportunity to provide long-term comprehensive protection of the area and its resources. Without NPS management, the area would continue to be managed without a cohesive vision for protection or interpretive and educational opportunities, and it would remain open to incompatible uses. Given the configuration of the area in relationship to the park boundary, incompatible uses could have adverse impacts on park resources such as wildlife, water resources, and wilderness values.

CHAPTER 3: Alternatives

Introduction

The National Environmental Policy Act (NEPA) requires federal agencies to explore a range of reasonable alternatives aimed at addressing the purpose of and need for the proposed action. The alternatives under consideration must include the "no action alternative" as prescribed by CEQ regulations for implementing NEPA (40 CFR 1502.14).

The alternatives analyzed in this document, in accordance with NEPA, are based on the analysis described in *Chapter 2: Application of Boundary Adjustment Criteria* as well as the results of internal scoping and public scoping. The alternatives meet the overall purpose and need for the proposed action.

Also described in this section are alternatives that were considered but dismissed from further analysis. These alternatives were dismissed because they are not technically feasible; do not meet the purpose and need of the project; would create unnecessary or excessive adverse impacts on cultural or natural resources; and/or would conflict with the overall management of the park or its resources.

The NPS explored and objectively evaluated four alternatives in this environmental assessment (EA), including the following:

- Alternative A: Continue Current Management (No Action)
- Alternative B: Federal Agency-to-Agency Land Transfer (~22,135 acres)
- Alternative C: Agency Transfer with Enhanced Habitat Connectivity and Recreation (~25,070 acres) (NPS Preferred Alternative and Proposed Action)
- Alternative D: Restore 1936 Boundary to Provide Diverse Visitor and Resource Protection Opportunities – Phased Approach (~28,600 acres)

Implementation of any of the action alternatives considered in the boundary study would require additional action. Federal lands managed by the Bureau of Land Management (BLM) could be administratively transferred to the National Park Service (NPS) as authorized by provisions of the Land and Water Conservation Fund (LWCF) Act and the Federal Land Policy and Management Act (FLPMA). Inclusion of local, state, or privately owned lands in a boundary adjustment would require Congressional action, unless such lands were donated to the National Park Service, in which case such lands could be included in an administrative boundary adjustment.

Alternatives Considered but Dismissed from Further Consideration

The study evaluated a variety of configurations associated with the proposed boundary expansion. Public scoping comments suggested two alternatives that the NPS considered but dismissed. The first would be the inclusion of all lands in the study area. The NPS has dismissed this alternative because all of such lands would not be feasible for the NPS to manage. While most of the lands under study are considered feasible or potentially feasible, the Metropolitan Water District of Southern California (MWD) parcels that form the eastern boundary are actively managed for the operation and maintenance of the Colorado River Aqueduct and are thus not compatible with park management.

The second alternative would include a broader boundary adjustment that includes lands to the east in the Chuckwalla Valley that contain important habitat for species such as the Desert Tortoise. Including these areas is beyond the scope of the study which is focused on the historical footprint of Joshua Tree National Monument in 1936. These areas were not part of the historical footprint of the national monument. Additionally, because the NPS has determined that the MWD parcels are not a feasible addition to the park boundary, including areas west of the Colorado River Aqueduct would create a boundary that is not contiguous.

SELECTED ALTERNATIVE

As fully described in the *Finding of No Significant Impact* in *Appendix F*, the Selected Alternative, a modification of Alternative C, recommends an approximately 20,005 acre-addition to Joshua Tree National Park A map of the selected alternative is also depicted in Appendix F.

This would include approximately 17,670 acres of federally owned and managed lands that would be considered for administrative transfer to the National Park Service. Also recommended would be approximately 2,000 acres of privately owned lands, and 335.7 acres of State School Lands that have been determined feasible for addition to Joshua Tree National Park. Lands recommended for inclusion in the park boundary do not include those lands and rights of way associated with the Federal Energy Regulatory Commission license withdrawal area for the Eagle Mountain Pumped Storage Hydroelectric Project. The selected alternative, if fully implemented, could allow for greater protection of existing habitat, restoration opportunities, and landscape connectivity for wildlife such as bighorn sheep, as well as new visitor opportunities.

Private land could be acquired when available, through donation or purchase by a third party from a willing seller (in fee) and donated to NPS. Eagle Crest Energy Company, which owns a substantial interest in such lands, has indicated that it would consider donating lands not needed for the pumped storage hydroelectric project to the National Park Service following construction of the project and at such time that the outstanding promissory note for the private parcels is secured. State School Lands could be acquired through a land exchange with the California State Lands Commission. The California State Land Commission would consider a land exchange, when and if the surrounding private lands and mineral interests are transferred to the NPS for management.

The long-term vision of the National Park Service would be to include in the park boundary all of the lands determined suitable for addition to Joshua Tree National Park, if and when such lands would become available to the National Park Service. This would include an additional ~8,610 acres that include lands associated with the former Eagle Mountain Mine and Townsite, if existing uses of those lands change and subsequently become available to the NPS through willing sellers. Lands associated with the right of way for the pumped storage hydroelectric project could be considered for transfer to the NPS at a later time, if not needed for the operation of the facility. Additional feasibility analysis and environmental site assessments for the remaining lands may be necessary at such time that they become available.

ALTERNATIVE A: Continue Current Management (No Action)

Description

Under the no action alternative, the park boundary of Joshua Tree National Park in the Eagle Mountain area would remain as it is today. More than half of the 31,500 acres under study would be open to resource intensive uses despite their proximity to one of the most pristine areas of the national park. No additional property would be included in the national park boundary, either by federal land transfer, donation, or through the use of appropriated funds. The Eagle Mountain area would continue to be owned and managed by a variety of public and private entities, without a cohesive vision for resource protection or public enjoyment opportunities.

Federal Lands (BLM-managed)

Currently, the Bureau of Land Management (BLM)-managed federal lands within the study area fall within "limited" and "moderate" multiple use classes which allow a variety of allowable uses ranging from electric generation plants (wind, solar or geothermal); gas, electric and transmission facilities and cables; communications sites; livestock grazing; mining; and low to moderate recreational activities as defined the California Desert Conservation Area (CDCA) Plan, as amended. While these activities may be allowed, the multiple use class determines the manner in which the activity is allowed. Within the "limited" multiple use class the land is managed to provide for lower-intensity, carefully controlled multiple use of resources, while ensuring that sensitive values are not significantly diminished. Within the "moderate" multiple use class the land is managed to provide a controlled balance between higher intensity use and providing protection of public lands. The moderate classification is designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause.

Proposed Future Designations. The Bureau of Land Management's (BLM) *Desert Renewable Energy Conservation Plan Proposed Land Use Plan Amendment, Phase 1* (DRECP LUPA)[5] recognizes the national significance of the resources in this area and proposes two separate designations that would allow for greater protection of those resources. Within these proposed designations, BLM would place a special emphasis on managing resources in a proposed National Conservation Lands (NCL) area and within portions of a proposed Chuckwalla Area of Critical Environmental Concern (ACEC) to ensure that uses do not impact the nationally significant resources. However, these proposed protective designations only apply to roughly 54% of the BLM-managed lands within the study area. The NCL proposal would include approximately 5,870 acres of BLM-managed lands in the western portion of the study area while the proposed Chuckwalla ACEC would include approximately 6,630 acres of BLM-managed land in the eastern end of the study area, north and south of the Eagle Mountain Mine and Townsite (BLM 2015a).

State and Local Lands

There would be no change in ownership of lands within the study area that are owned and managed by state and local agencies. The California State Lands Commission (CSLC) would continue to manage the State School Lands in the study area. However, the State School Lands could be considered for a future land exchange. The Metropolitan Water District of Southern California (MWD) would maintain jurisdiction and ownership of lands and retain existing rights-of-way, according to right-of-way regulations, needed for maintenance and management of the Colorado River Aqueduct. Finally, the Desert Center Unified School

5 At the time of writing, the Record of Decision for the DRECP, Phase 1 was pending, so conservation designations in the final environmental impact statement for the plan ~~are considered~~were denoted as "proposed." In completing its Record of Decision (BLM 2016) the BLM has adopted the designations. Any changes made to the Record of Decision do not change level of effect of impacts disclosed in the environmental consequences.

District would continue to operate the Eagle Mountain School.

Private Land

Private land would continue to be either undeveloped or used for industrial purposes including above-ground mining of the existing stockpiles and tailings associated with the former iron ore mine. Riverside County planning and zoning would continue to define allowable uses on private lands. Land use designations include mining, open space and recreation, low density residential development, agricultural uses, and various institutional uses (schools, landfills, pumped storage hydroelectric project, etc.).

Eagle Mountain Townsite

The Eagle Mountain Townsite would continue to be in private ownership as long as Kaiser Eagle Mountain (KEM) meets the requirements of Private Law 790 and does not trigger a reverter of the Townsite or railroad right-of-way, in which case these properties would revert to BLM management. Eagle Mountain Mining and Railroad (EMMR) leases the Eagle Mountain Mine Railroad right-of-way from KEM and has expressed interest in repairing the line to transport aggregate and other materials.

Resource Protection Opportunities

Under current management, the area's resources would be managed by a variety of landowners and agencies. If the DRECP LUPA proposed conservation designations are implemented, the BLM would place a special emphasis on managing resources identified as nationally significant within the proposed NCL and ACEC designations. Natural and cultural resource values of significance are identified for these two proposed areas including wildlife habitat and linkages, outstanding examples of diverse Sonoran Desert plant communities, and cultural values such as the World War II Desert Training Center, California-Arizona Maneuver Area

The DRECP LUPA recommends a ground disturbance cap of 1% for the proposed conservation areas. Additionally, conservation management actions identified in the DRECP LUPA for these lands, as well as the unallocated BLM lands, would specify new protections for natural resources, including sensitive wildlife species. Specific management actions related to resource protection would likely result from implementation plans if the two proposed designated areas are adopted by the BLM in the pending Record of Decision for the DRECP LUPA.

Impacts to natural resources would occur as a result of construction and operation of the proposed Eagle Mountain Pumped Storage Hydroelectric Project. The Federal Energy Regulatory Commission (FERC) license for this project identifies protection strategies and mitigation measures to address impacts from the project (FERC 2014).

Required mitigation efforts include:

- Desert tortoise clearance and relocation/translocation plan
- Special status plants protection plan
- Erosion and sediment control plan
- Invasive species monitoring and control plan
- Historic properties management plan
- Avian protection and wildlife protection
- Predator monitoring and control plan
- Aquifer testing and monitoring (water management plan)

Mining operations at the Eagle Mountain Mine would continue by EMMR under the *Kaiser Eagle Mountain Mine Interim Management Plan* (2013) and through an agreement with KEM which limits the nature of the mining activities that can occur on the site to above ground activities. Impacts to resources would depend on the scale of EMMR's future activities. Reclamation of the mine's previously disturbed areas outside of the proposed pumped storage hydroelectric project footprint would continue as noted in the 1978 reclamation plan which relies on voluntary regrowth as the method for vegetation reestablishment. Erosion is intended to be controlled by implementation of the site's Storm Water Pollution Prevention Plan (Kaiser Eagle Mountain, LLC 2013). Eagle Crest Energy is also required to implement an erosion and

sediment control plan for the proposed pumped storage hydroelectric project.

Visitor Experience Opportunities

On federal lands under BLM management, public recreation opportunities would continue to include rockhounding, off-highway vehicle use, backcountry camping, recreational shooting, and other allowable uses. Visitor use would continue to be sparse given the remoteness of the area and lack of public access points from the east. Some current recreational uses may change due to the new designations proposed by BLM. Such changes could include mineral withdrawal and designation of routes of travel for vehicle use. These determinations would be made by BLM during implementation planning associated with the DRECP. Implementation planning would determine whether such uses are compatible with protection of the nationally significant resources identified for these areas. Public access to state, local, and privately owned lands would generally remain restricted with the exception of access along public roads.

Little to no interpretation of the area's significant resources currently takes place in the study area. However, there are plaques commemorating the historic significance of the Eagle Mountain Mine and Contractors General Hospital in nearby Desert Center. The BLM is working to provide interpretation regarding World War II Desert Training Center, California-Arizona Maneuver Area where camp locations and maneuvers occurred on BLM lands. However, no portions of the training camp near the study area are identified for interpretive opportunities. Such opportunities are focused on areas that contain the highest concentration of resources and artifacts related to the training camp. Additionally, in nearby Chiriaco Summit, General Patton Memorial Museum, Inc., a non-profit entity, in association with the BLM management, operates the General Patton Memorial Museum which interprets the history of the vast training center.

Operational Management Opportunities

Over the years the NPS has played an active role in reviewing and commenting on development proposals for the Eagle Mountain area. Proposed development in the study area has the potential to impact park resources. Under the no action alternative, the NPS would continue to monitor and comment on development proposals. The NPS and other entities could also choose to enter into agreements to protect resources and provide interpretive opportunities. Such agreements would be at the discretion of those entities, agencies, and organizations. The NPS does not have access rights to any of the privately owned areas within the study area.

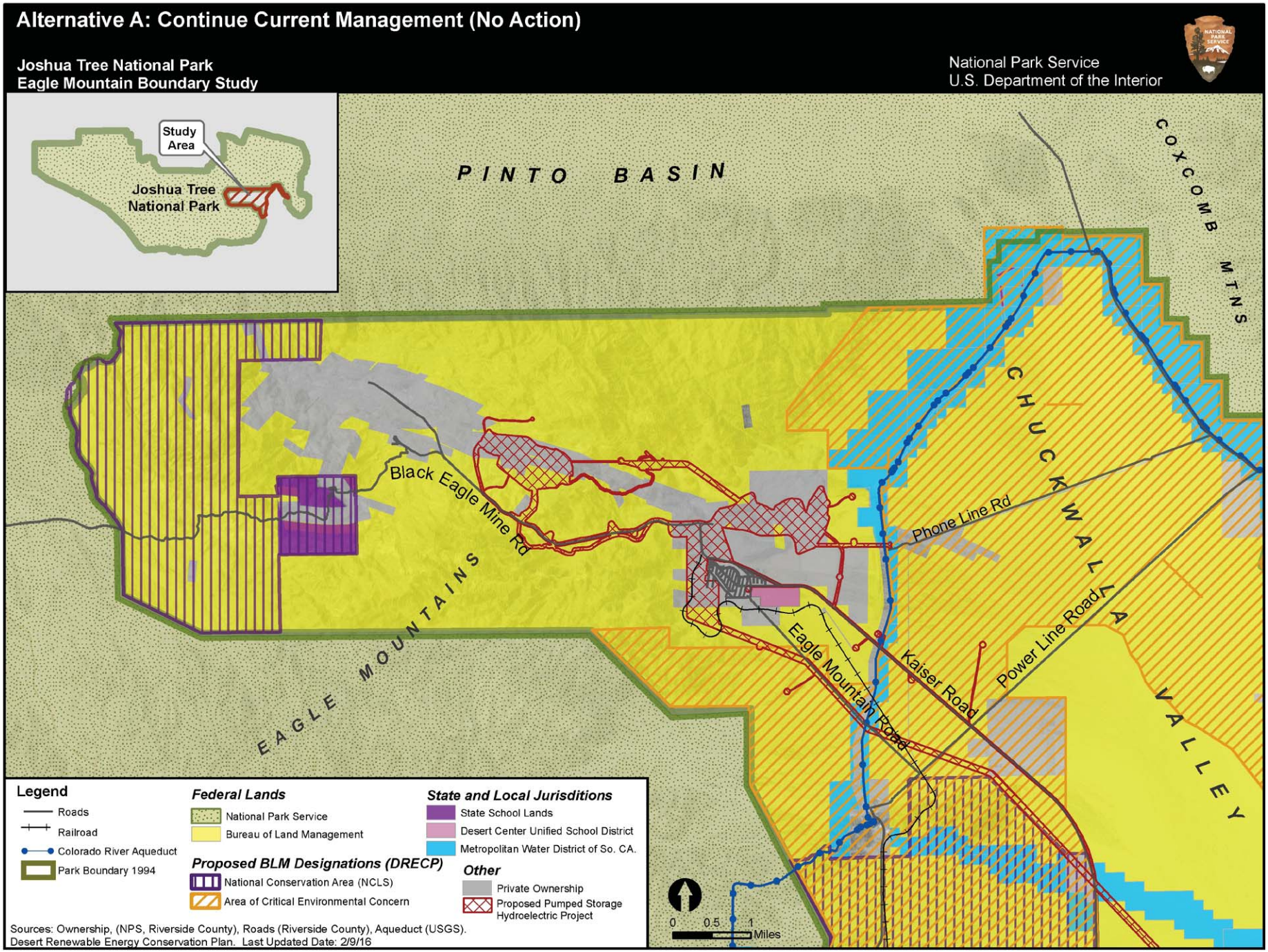
Costs

Alternative A assumes that current authorized funding levels for the NPS within Joshua Tree National Park would continue. Some fluctuations would occur to account for inflation, new management needs, and to reflect national budget priorities. The NPS base budget for Joshua Tree National Park in fiscal year 2015 was $6.06 million, which includes employee salaries and day-to-day operating expenses. Under the no action alternative, the costs to the NPS would be for staff time and involvement regarding development proposals in the study area. The costs are incurred by various staff within the existing number of full-time equivalent employees (FTE) for the park. In fiscal year 2015, the NPS employed 99.25 FTE at Joshua Tree National Park.

Joshua Tree National Park also has a volunteer program that plays a key role in supporting park operations. In fiscal year 2015 more than 500 volunteers contributed more than 42,000 hours of volunteer labor to the park. Volunteer hours were used for park administration and general management, a campground host, cultural resource management, interpretation, maintenance, natural resource management, operations, and visitor protection.

The park also receives funding from fee revenue and other NPS programs, such as those that fund construction projects and biological monitoring.

Map 3-1:


Alternative A: Continue Current Management (No Action)
Joshua Tree National Park
Eagle Mountain Boundary Study
National Park Service
U.S. Department of the Interior
Study Area
Joshua Tree National Park
PINTO BASIN
COXCOMB MTNS
CHUCKWALLA VALLEY
EAGLE MOUNTAINS
Black Eagle Mine Rd
Phone Line Rd
Eagle Mountain Road
Kaiser Road
Power Line Road
Legend
Roads
Railroad
Colorado River Aqueduct
Park Boundary 1994
Federal Lands
National Park Service
Bureau of Land Management
Proposed BLM Designations (DRECP)
National Conservation Area (NCLS)
Area of Critical Environmental Concern
State and Local Jurisdictions
State School Lands
Desert Center Unified School District
Metropolitan Water District of So. CA.
Other
Private Ownership
Proposed Pumped Storage Hydroelectric Project
0 0.5 1 Miles
Sources: Ownership, (NPS, Riverside County), Roads (Riverside County), Aqueduct (USGS).
Desert Renewable Energy Conservation Plan. Last Updated Date: 2/9/16

ALTERNATIVE B: Federal Agency-to-Agency Land Transfer

Description

Under Alternative B, the Joshua Tree National Park boundary would be expanded to include existing federal lands within the study area. Approximately 22,135 acres of land would be transferred from the Bureau of Land Management (BLM) to the National Park Service for administration as part of Joshua Tree National Park. All valid mineral rights would be retained by current claimants. Proposed transfer areas would not include BLM lands that have been previously withdrawn under the Federal Power Act for the proposed Eagle Mountain Pumped Storage Hydroelectric Project (620 acres). This project received a 50-year license from the Federal Energy Regulatory Commission ("FERC") in June 2014. The NPS acknowledges that the footprint of the pumped storage hydroelectric project on the maps is based on preliminary design, and that this may change through further design and construction. The NPS would work with Eagle Crest Energy Company to ensure that if a boundary adjustment were implemented, that the final project footprint would be considered in the configuration. Private lands and state and county-owned lands would not be included in the boundary and would continue to be used for existing purposes.

Approximately 380 acres of lands in areas with recently established and actively used unpatented mining claims would remain under BLM jurisdiction. However, if the claims were willingly relinquished or were no longer active, the NPS could pursue a transfer of administration. Such areas would need further survey to confirm locations and claim status. In the course of the study one claim was closed while two new claims were established.

State, local, and privately owned lands are not included in this boundary adjustment alternative. Uses of these lands would continue to be determined by state agencies or local planning and zoning ordinances as described in the no action alternative.

Resource Protection Opportunities

Lands added to the national park in Alternative B are primarily undisturbed lands that contain habitat important for landscape-scale conservation of the California desert and would protect adjacent park wilderness values. Including these lands in the national park boundary would provide the NPS the opportunity to protect the transferred lands in tandem with NPS-managed properties within Joshua Tree National Park. Benefits include protection from development, seamless protection of existing habitat, and restoration opportunities for disturbed lands that may provide greater landscape connectivity for wildlife such as desert bighorn sheep.

For areas included in the boundary adjustment, the NPS would work to ensure that future activities and uses do not diminish the wilderness values of adjacent areas. This would include any new visitor opportunities identified in future management plans for the newly added area.

Additional inventories, documentation and mapping of cultural sites could be undertaken, although location data for sensitive sites would not be released in order to protect the sites from vandalism. The NPS would conduct appropriate consultation and coordination with native cultural groups that have ties to the Eagle Mountain area.

The NPS would seek to work with private landowners on mitigation strategies to avoid or minimize the impacts of future industrial uses on park resources.

Resource Management Planning

Although specific implementation plans would be required for management actions such as restoration projects, the park's recently completed *Resource Stewardship Strategy* (2014) would provide initial resource management

guidance for those resources that are considered fundamental to the purpose of Joshua Tree National Park. A resource stewardship strategy is a long-range planning document for a national park unit to achieve its desired natural and cultural resource conditions, which are derived from relevant laws and NPS policies identified in a park's foundation document, or other park plans. The resource stewardship strategy serves as a bridge between the park's foundation document and everyday management of its natural and cultural resources. The resource stewardship strategy describes measurable desired conditions and possible pathways to achieve desired results for certain fundamental resources and values. Lands within Alternative B include resources that represent almost every fundamental resource and value outlined in the park foundation document and resource stewardship strategy. Those fundamental resources and values associated with lands included in Alternative B include:

- Biological diversity and healthy ecosystem function
- Interconnectivity of California desert lands
- Recreational opportunities and values
- Wilderness values and wilderness accessibility
- Ever-expanding knowledge base
- Opportunity to understand, apply, and share knowledge to benefit the park and beyond
- Geological resources and desert landforms
- Hydrological resources
- Night sky
- Clean and breathable air
- Soundscape
- Viewsheds
- Historic structures or landscapes
- Archeology (historic and prehistoric)
- Cultural anthropology
- History

Visitor Experience Opportunities

Under Alternative B, new visitor opportunities in the Eagle Mountains could be explored. Backcountry hiking, night sky viewing, and informal camping opportunities could be afforded without requiring extensive infrastructure improvements. A hiking trail connection to Cottonwood Springs could be explored. The NPS could consider improvement of the existing access road for safer visitor and staff travel. Other facilities that could be explored include trails, camping areas, or overlooks. Consideration would be given to areas where interpretive signage could provide information about the area and its history.

Some existing opportunities may be constrained by NPS policies and management. Off-highway vehicle use would be limited to designated routes, pursuant to implementation planning for the area. Some uses such as shooting would no longer be permitted. Some visitors to the federal lands conduct mining on unpatented claims. Continuation of this use would be contingent upon validity for the claim and other requirements of NPS regulations for mining.

The NPS would need to conduct further planning to determine the range of visitor use facilities that would be appropriate and compatible with the area's natural and cultural resource values and where such facilities could be appropriately sited. Any new visitor opportunities would be dependent upon access to the area. Access would continue to be limited from adjacent private and state-owned lands to the east of the proposed boundary adjustment. However, the NPS could explore cooperative opportunities to provide access along public roads or seek permission from adjacent land owners through agreements.

Although the Eagle Mountain Mine and Townsite would not be included in the boundary under Alternative B, some of these features would be visible from the boundary adjustment area, providing the NPS an opportunity to interpret the historic resources where appropriate. Additionally, the NPS could

work cooperatively with Eagle Crest Energy Company to explore interpretive opportunities in areas that would not conflict with the operation of the pumped storage hydroelectric project. Eagle Crest has expressed interest in NPS interpretation of the hydroelectric pumped storage hydroelectric project within the context of climate change and the renewable energy story within the California desert.

Public Access Following NPS Management

Following transfer of the federal lands to NPS jurisdiction, the NPS would continue to allow access to the area along existing roads, such as Black Eagle Mine Road. Any changes to access, either increasing or decreasing access, would be explored further during implementation planning.

Operational Management Opportunities

The areas proposed for inclusion in the boundary in Alternative B would allow the NPS to access and expend funds on studies and projects related to natural and cultural resource protection for most of the lands within the study area. Resources within this area would be studied and inventoried, contingent on the availability of funds. The need for inventories is heightened with the effects of climate change on park resources and the impacts that will result from construction and operation of the proposed pumped storage hydroelectric project.

Implementation Plans Needed

Following transfer of the lands to NPS for management, the NPS would complete a comprehensive site plan for newly added lands to define appropriate uses and functions for the area and to coordinate the interrelationships among uses, site resources, and facilities (for visitors and/or park operations); and establish a road map to guide decisions on needed capital improvements, preservation, and development. As described above, the resource stewardship strategy provides guidance for protection of Joshua Tree National Park's fundamental resources and would serve to provide guidance for management of the area's resources until such time that a comprehensive site plan would be completed for the area.

Costs

In the current fiscal environment, it is unlikely that funding increases will be immediately available to support the new addition. In the short-term, existing funding for Joshua Tree National Park, including revenue from park entrance fees, would be used for management of the newly added lands.

Over time, as implementation planning identifies specific projects and needs, additional funding would be sought. Aside from existing roads, the area under consideration in Alternative B contains very few facilities that would require NPS maintenance. Capital costs related to visitor services may include funding for road improvements, new trails, overlooks, camping areas, or waysides. Further implementation planning would determine appropriate visitor facilities and would identify specific costs associated with those facilities. Additional inventories, documentation and mapping of cultural sites would be undertaken to inform implementation planning where necessary. Additional costs may also be incurred to address abandoned mine sites that pose a public safety risk if responsible parties cannot be located.

Operations

Initially, existing staff at the park would manage and operate the expanded park area. However, overtime as implementation planning identifies specific resource management needs and visitor opportunities additional staffing and expertise needed for the expanded area would likely include:

- Resource management staff to document and manage the expanded scope of natural and cultural resources within the newly added area
- Interpretive staff to create and deliver visitor programs

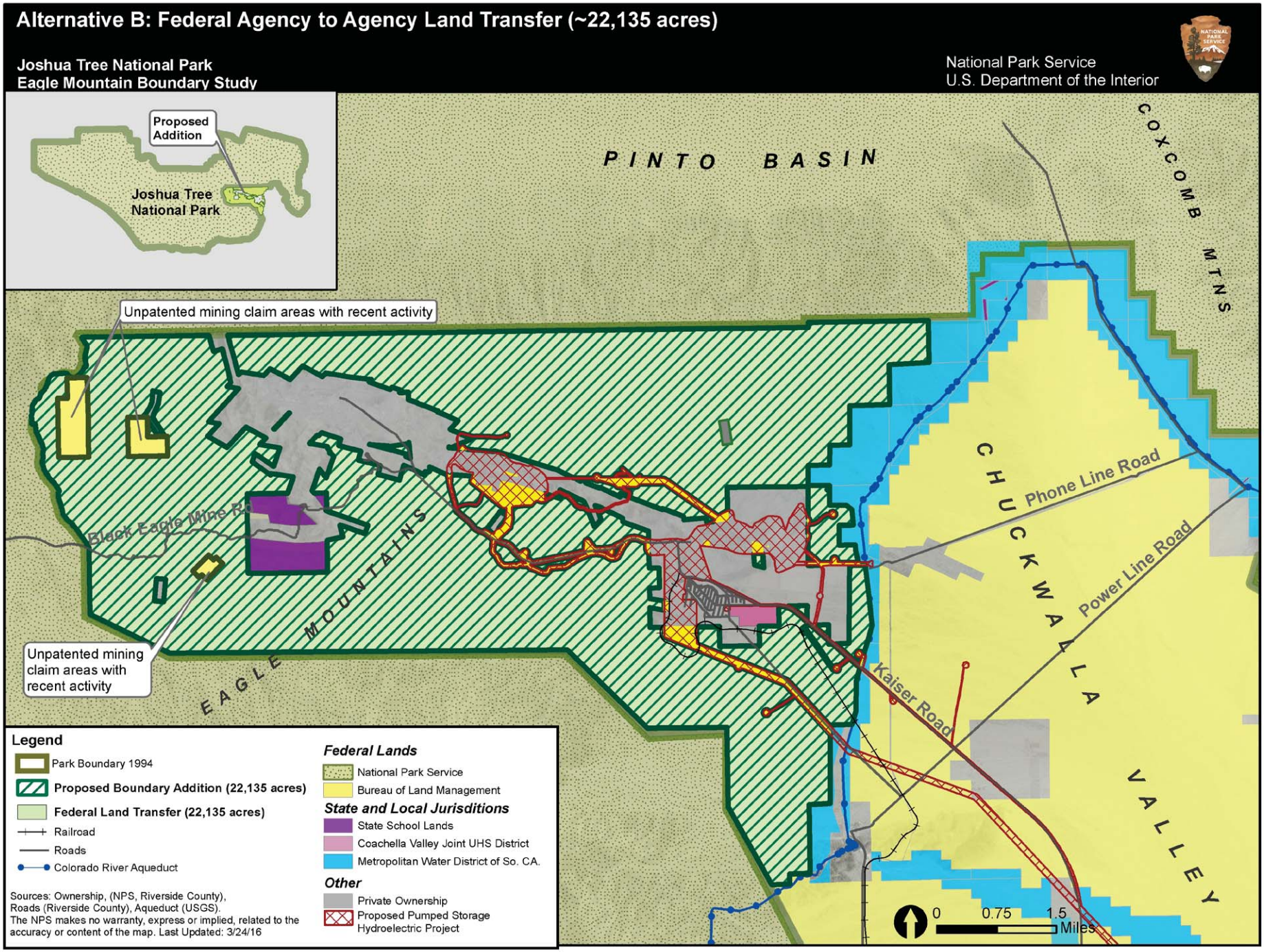
- Law enforcement staff to protect resources and ensure a safe visitor experience
- Maintenance and facilities management staff, primarily for maintenance of Black Eagle Mine Road

Total additional staffing identified would be three FTE which would require an increase of $240,000 over the park's current annual operating budget.

Facilities

The federal lands are largely undeveloped with few facilities. The NPS would assume maintenance for approximately 4.5 miles of Black Eagle Mine Road. Annual costs to maintain Black Eagle Mine Road in its current condition (passable by four-wheel drive vehicles only) annual maintenance costs are estimated at $4,500. If the NPS chose to improve Black Eagle Mine Road to accommodate passenger vehicles (unpaved), one-time capital costs are estimated at $157,500. Annual maintenance for an improved road would be $5,400.

Specific costs for new visitor facilities and any decisions regarding road improvements over existing conditions would be evaluated in subsequent, more detailed planning for the area. Planning would consider potential visitor use, facility and site design where appropriate, and detailed identification of resource protection needs. Actual costs to the NPS would vary depending on timing and implementation and contributions by partners and volunteers.


Alternative B: Federal Agency to Agency Land Transfer (~22,135 acres)
Joshua Tree National Park
Eagle Mountain Boundary Study
National Park Service
U.S. Department of the Interior
Proposed Addition
Joshua Tree National Park
PINTO BASIN
COXCOMB MTNS
Unpatented mining claim areas with recent activity
Black Eagle Mine Rd
EAGLE MOUNTAINS
Unpatented mining claim areas with recent activity
CHUCKWALLA VALLEY
Phone Line Road
Power Line Road
Kaiser Road
0
0.75
1.5
Miles
Legend
Park Boundary 1994
Proposed Boundary Addition (22,135 acres)
Federal Land Transfer (22,135 acres)
Railroad
Roads
Colorado River Aqueduct
Federal Lands
National Park Service
Bureau of Land Management
State and Local Jurisdictions
State School Lands
Coachella Valley Joint UHS District
Metropolitan Water District of So. CA.
Other
Private Ownership
Proposed Pumped Storage Hydroelectric Project
Sources: Ownership, (NPS, Riverside County), Roads (Riverside County), Aqueduct (USGS).
The NPS makes no warranty, express or implied, related to the accuracy or content of the map. Last Updated: 3/24/16

ALTERNATIVE C: Agency Transfer with Enhanced Habitat Connectivity and Recreation (NPS Preferred Alternative and Proposed Action)

Description

Under Alternative C, the boundary of Joshua Tree National Park would be expanded by approximately 25,070 acres. This would include 22,515 acres of federally owned and managed lands that would be considered for administrative transfer to the National Park Service. Also included would be approximately 2,230 acres of privately owned lands, and 325 acres of State School Lands west of the FERC license withdrawal area that have been determined feasible for addition to Joshua Tree National Park.

The boundary adjustment would not affect valid existing rights. All valid mineral rights would be retained by current claimants. Private land could be acquired when available, through donation or purchase by a third party from a willing seller (in fee) and donated to NPS. Eagle Crest Energy Company has indicated that it would consider donating lands not needed for the pumped storage hydroelectric project to the National Park Service. State School Lands could be acquired through a land exchange with the California State Lands Commission. Alternative C is the NPS preferred alternative and the proposed action.

The proposed boundary addition would not include BLM-managed lands that have been previously withdrawn under the Federal Power Act for the Eagle Crest Energy Company's Eagle Mountain Pumped Storage Project. This project received a 50-year license from the Federal Energy Regulatory Commission (FERC) in June 2014. The NPS acknowledges that the foot print of the pumped storage hydroelectric project on the maps is based on preliminary design, and that this may change through further design and construction. The NPS would work with Eagle Crest Energy Company to ensure that if a boundary adjustment were implemented, the final project footprint would be considered in the configuration.

This option could allow for greater protection of existing habitat, restoration opportunities, and landscape connectivity for wildlife such as bighorn sheep. Visitor opportunities would be similar to Alternative B. Access would continue to be limited on private lands and to FERC energy license withdrawal lands. However, the NPS could explore with Eagle Crest Energy Company, opportunities to provide access from the private lands to the east.

The long-term vision of the National Park Service would be to include in the park boundary all of the lands determined suitable for addition to Joshua Tree National Park. This would include an additional 3,530 acres that include the former Eagle Mountain Mine and Townsite, if existing uses of those lands change and subsequently become available to the NPS. Additional feasibility analysis environmental and environmental site assessments for these lands would likely be necessary at such time that they become available.

Resource Protection Opportunities

Resource protection opportunities would be similar to those described for Alternative B. In addition, inclusion of the additional private parcels west of the FERC-licensed areas could provide additional protection of park resources. The private land west of the FERC-license area has been documented as an important migration corridor for populations of desert bighorn sheep in the Eagle and Coxcomb Mountains. The area was formerly used for the Eagle Mountain Mine. Reclamation of the disturbed areas would continue under the approved reclamation plan for the mine. NPS could pursue further restoration of areas where necessary for the specific purpose of improving habitat connectivity for desert bighorn sheep and other sensitive species.

As in Alternative B, the park's recently completed *Resource Stewardship Strategy* (2014) would provide initial resource management guidance for those resources that are considered fundamental to the purpose of Joshua Tree National Park.

Visitor Experience Opportunities

Visitor experience opportunities would be similar to those described for Alternative B. In addition, the NPS could provide new interpretive opportunities regarding the historic Eagle Mountain Mine, portions of which would be included in the boundary addition.

Public Access Following NPS Management

As noted in Alternative B, the NPS would continue to allow access to federal lands along existing roads such as Black Eagle Mine Road. NPS could not provide public access to the private or state lands unless acquired by NPS. Access to the former mining pits may be restricted for safety reasons. If those lands are acquired by NPS, further analysis would be required to determine safe and appropriate access opportunities.

Operational Management Opportunities

Operational management opportunities would be similar to those described for Alternative B.

Implementation Plans Needed

Implementation plans needed would be similar to Alternative B. This would include a comprehensive site plan to define appropriate uses and functions for the area and guide decisions on needed capital improvements, preservation, and development. The park resource stewardship strategy would provide guidance for protection of Joshua Tree National Park's fundamental resources and would serve to provide guidance for management of the area's resources until such time that a comprehensive site plan would be completed for the area. Additional studies and planning would be required for any restoration efforts on the previously disturbed areas.

Costs

As in Alternative B, in the current fiscal environment, it is unlikely that funding increases would be immediately available to support the new addition upon transfer of the lands to NPS for management. In the short-term, existing funding for Joshua Tree National Park, including revenue from park entrance fees, would be used for management of the newly added lands.

Over time, as implementation planning identifies specific projects and needs, additional funding would be sought. Aside from existing roads, the area under consideration in Alternative C contains very few facilities that would require NPS maintenance. Capital costs related to visitor services may include funding for road improvements, new trails, overlooks, camping areas, or waysides. Further implementation planning would determine appropriate visitor facilities and would identify specific costs associated with those facilities. Additional inventories, documentation and mapping of cultural sites would be undertaken to inform implementation planning where necessary. The NPS would also incur some costs to address any potential safety hazards associated with mined lands if reclamation activities by KEM are not sufficient for NPS purposes. Such costs would be considerably higher surrounding the former mining pits.

Operations

As in Alternative B, initially, existing staff at the park would manage and operate the expanded park area. However, over time as implementation planning identifies specific resource management needs and visitor opportunities additional staffing and expertise needed for the expanded area would likely include:

- Resource management staff to document and manage the expanded scope of natural and cultural resources within the newly added area

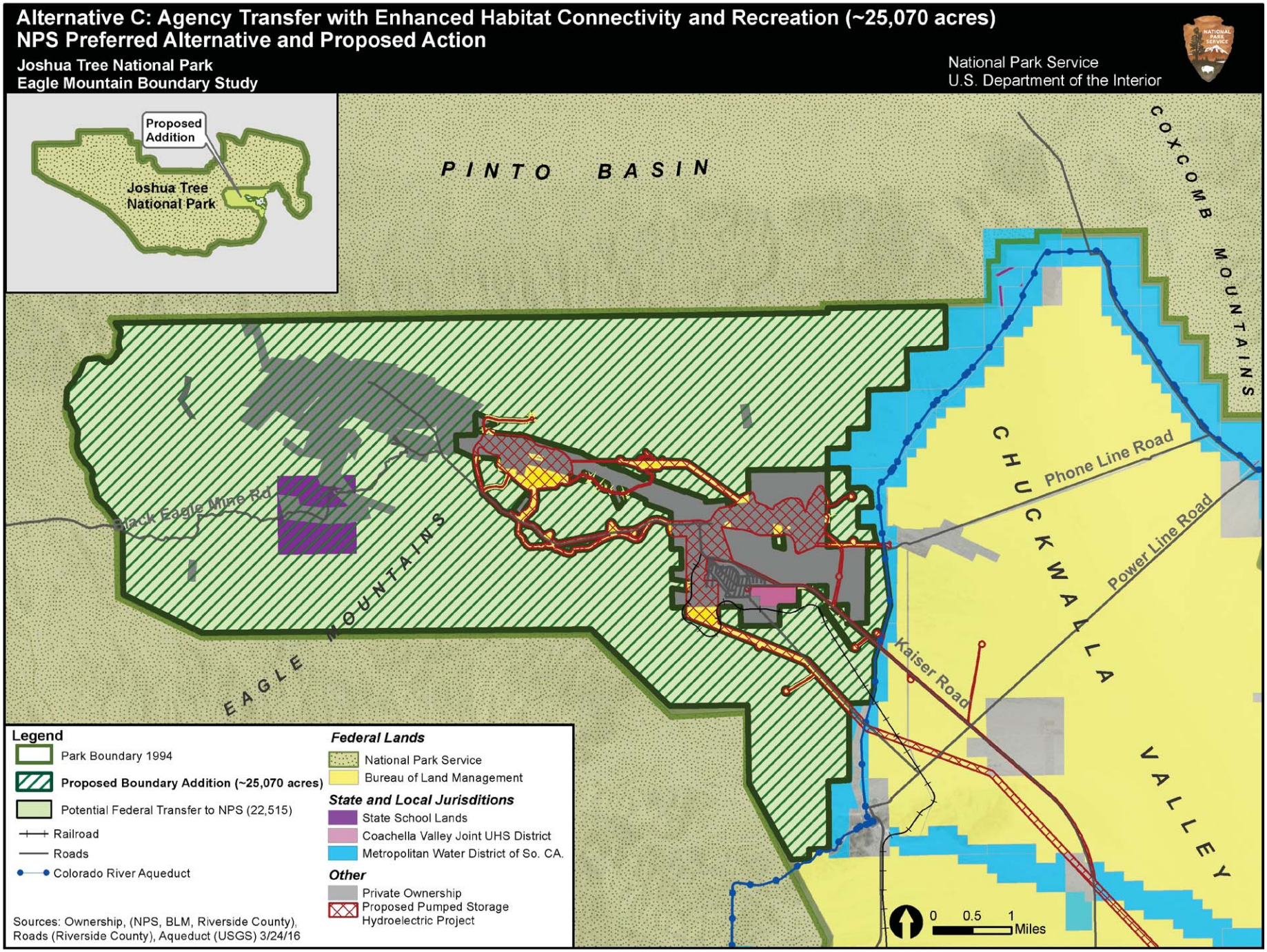
- Interpretive staff to create and deliver visitor programs
- Law enforcement staff to protect resources and ensure a safe visitor experience
- Maintenance and facilities management staff, primarily for maintenance of Black Eagle Mine Road

Total additional staffing identified would be five FTE which would require an increase of $340,000 over the park's current annual operating budget.

Facilities

The federal lands are largely undeveloped with few facilities. However, the private land would include two of the former mining pits (Black Eagle and Iron Chief) associated with the Eagle Mountain Mine. The NPS would assume maintenance for approximately eight miles of Black Eagle Mine Road and access roads associated with the mining areas. Annual operation and maintenance of the road in its current condition (unpaved four-wheel drive passable only) would cost approximately $8,000. Minimal road improvements to allow passenger cars access (unpaved) would be a one-time capital investment of $280,000. Annual maintenance costs for an improved road would be about $1,600 more annually over maintenance costs for the road in its existing condition.

Specific costs for new visitor facilities and any road improvements over existing conditions would be evaluated in subsequent, implementation planning for the area. Planning would consider potential visitor use, facility and site design where appropriate, and detailed identification of resource protection needs. Actual costs to the NPS would vary depending on timing and implementation and contributions by partners and volunteers.


Alternative C: Agency Transfer with Enhanced Habitat Connectivity and Recreation (~25,070 acres)
NPS Preferred Alternative and Proposed Action
Joshua Tree National Park
Eagle Mountain Boundary Study
National Park Service
U.S. Department of the Interior
Proposed Addition
Joshua Tree National Park
PINTO BASIN
COXCOMB MOUNTAINS
CHUCKWALLA VALLEY
EAGLE MOUNTAINS
Black Eagle Mine Rd
Phone Line Road
Power Line Road
Kaiser Road
Legend
Park Boundary 1994
Proposed Boundary Addition (~25,070 acres)
Potential Federal Transfer to NPS (22,515)
Railroad
Roads
Colorado River Aqueduct
Federal Lands
National Park Service
Bureau of Land Management
State and Local Jurisdictions
State School Lands
Coachella Valley Joint UHS District
Metropolitan Water District of So. CA.
Other
Private Ownership
Proposed Pumped Storage Hydroelectric Project
Sources: Ownership, (NPS, BLM, Riverside County), Roads (Riverside County), Aqueduct (USGS) 3/24/16
0 0.5 1 Miles

ALTERNATIVE D: Restore 1936 Boundary to Provide Diverse Visitor and Resource Protection Opportunities – Phased Approach

Description

All areas west of the Metropolitan Water District of Southern California's aqueduct lands would be considered for inclusion in the Joshua Tree National Park boundary (approximately 28,600 acres), restoring lands that were removed from the NPS boundary in 1950. This boundary configuration represents a long-term vision to restore these lands to Joshua Tree National Park, providing an opportunity for comprehensive protection of the area's resources. Some lands, such as the FERC-licensed pumped storage hydroelectric project, may not be available for decades. Such lands could be acquired when they are no longer needed for these purposes. The boundary adjustment would be implemented through Congressional legislation. Designation would not affect private land ownership or valid existing rights such as the FERC-licensed proposed Eagle Mountain Pumped Storage Hydroelectric Project. Most NPS regulations and policies apply only to federal lands managed by NPS. Some regulations may apply to certain activities such as mining.

This option could offer the greatest potential for long term protection of existing habitat and enhancing landscape-scale connectivity and restoration for area wildlife, including desert bighorn sheep. It would also provide an opportunity to fully protect cultural landscapes associated with historic mining, including the Eagle Mountain Townsite if such lands were to become available. A wider range of visitor opportunities could occur with greater access and more lands potentially available for park use.

Phasing for Alternative D

Because not all lands are currently feasible for park management, NPS would implement a phased approach to land acquisition. Lands could be acquired by purchase from willing sellers, by land exchange, or by donation. Private, state, and locally owned lands would continue to be regulated by state and local authorities.

- Phase 1 (~25,070 acres) would include: the transfer of approximately 22,515 acres of BLM-managed federal lands to NPS for administration as part of Joshua Tree National Park; approximately 2,230 acres of private lands west of the FERC-licensed withdrawal area; and State School Lands parcels (approximately 325 acres). These lands are associated with the proposed boundary adjustment considered in Alternative C.

- Phase 2 (~3,530 acres) would include all other lands determined potentially feasible, that could be acquired when current uses cease. This comprises: federal lands associated with the proposed pumped storage hydroelectric project if at any time it is decommissioned (620 acres); and the remaining lands (~2,910), much of which are associated with the pumped storage hydroelectric project and/or the Eagle Mountain Mine. These lands would be acquired only at such time as they become feasible for addition to the NPS, or otherwise available to the NPS through donation, agency transfer, or land exchange. Purchase of private lands would be from willing sellers only. Additional feasibility analysis for some lands may be necessary at such time that they become available to determine whether conditions have changed from the time of this study.

Together these areas represent a long-term vision for including lands in the Eagle Mountain area within Joshua Tree National Park to protect resources and public enjoyment opportunities

related to the purpose of Joshua Tree National Park.

Resource Protection Opportunities

Resource protection opportunities would be similar to those described for Alternative B and C in the short term. The private land west of the FERC-license area has been documented as an important migration corridor for populations of desert bighorn sheep travelling from the Eagle Mountains to the Coxcomb Mountains. In the long-term, this alternative would offer the greatest potential for protection of existing habitat and enhancing landscape-scale connectivity for area wildlife if additional lands become available for NPS management. NPS could pursue further restoration of areas where necessary for the specific purpose of improving habitat connectivity for desert bighorn sheep and other sensitive species. Ecological stress for desert bighorn sheep would be reduced with enhancement and restoration of disturbed migration corridors.

In Alternative D, the NPS could have an opportunity to protect cultural landscapes associated with historic mining, including the Eagle Mountain Mine and Townsite. Preservation of any remaining contributing structures within the Townsite area may need to be undertaken as funding is made available Because it may be an extended period of time before these areas are available for addition to the park, additional evaluation of the resource conditions and feasibility factors would need to be undertaken before the lands could be considered for NPS ownership. This would include an environmental site assessment to determine whether there are any hazardous materials on the properties that need remediating.

If historic structures with integrity are retained at the Townsite, public-private partnerships could be a mechanism to revitalize the Townsite, providing new opportunities such as a research campus or recreational concession opportunities. Portions of the Townsite could be used for a campground. Another approach involves BLM's authority under the Recreation and Public Purposes to lease or convey BLM-administered land to state and local jurisdictions, or to non-profits, for recreation or other public purposes. Conveyances to state and local agencies can be at no cost, provided the application and proposal from the local agency meets the regulatory requirements. BLM would need to retain management authority over some Townsite lands in order to exercise this authority.

The NPS could partner with colleges and universities with programs in mining and reclamation to conduct demonstration projects associated with reclamation of some of the old mine sites. Additionally, the NPS could conduct research and surveys to understand more about prehistoric uses of the area, providing greater understanding of how humans have used the Eagle Mountains over time.

Alternative D could offer the greatest potential for protection of wilderness values in adjacent park wilderness areas including dark night sky, soundscapes, and untrammeled viewsheds.

As outlined in Alternative B, the park's recently completed *Resource Stewardship Strategy* (2014) would provide initial resource management guidance for those resources that are considered fundamental to the purpose of Joshua Tree National Park.

Visitor Experience Opportunities

Alternative D, if fully implemented, could offer the widest array of new visitor opportunities, since it would provide convenient access from the I-10 corridor and visitors would have a chance to see and learn about the history of the Eagle Mountain Mine and Townsite and other resources. In Phase1, visitor opportunities would be similar to Alternative C and could include opportunities such as backcountry hiking, night sky viewing, and informal camping opportunities.

Some existing uses may be constrained by NPS policies and management. Off-highway vehicle use would be limited to designated routes, pursuant to implementation planning for the area. Some uses such as shooting would no longer be permitted. Some visitors to the federal lands conduct mining on unpatented claims. Continuation of this use would be contingent upon validity for the claim and other requirements of NPS regulations for mining. Public access to private lands would ~~be~~ continue to be restricted in Phase 1.

Phase 2 lands contain existing infrastructure such as roads and trails and would provide better access for visitors as the area is a short distance from Interstate 10. A campground could be considered in or around the existing developed area and existing paved roads could be used for bicycling. Visitors would have new opportunities to learn about the mining history and the World War II Desert Training Camp sites through a wide variety of interpretive programs. Mountain biking could be allowed on the old mining roads (mountain biking is currently not offered in the park).

The cultural resources that would come into the park boundary if Alternative D was fully implemented would both expand and fill in gaps in interpretation of the park's history. Joshua Tree National Park currently interprets early 19th and early 20th century mining and homesteading. The Eagle Mountain Mine represents mining in the 20th century, spurred by both the New Deal Program and mobilization for World War II. New opportunities for interpretation surround World War II Desert Training Center, California-Arizona Maneuver Area, and the role of Desert Center in the development of a prepaid healthcare program that eventually informed the evolution of Kaiser Permanente healthcare.

The NPS would need to conduct further planning to determine the range of visitor use facilities that would be appropriate and compatible with the area's natural and cultural resource values and where such facilities could be appropriately sited.

Public Access Following NPS Management

The NPS would continue to allow access to the area along existing roads on federal lands that would transferred to NPS in Phase 1, such as Black Eagle Mine Road. Public access would not be permitted to private, state or locally owned lands without the permission of the owner. In later phases, if the private or local/state government lands are donated, exchanged, or sold to the NPS, access may be provided. At such time as these lands are added to the boundary, further analysis would be required to determine safe and appropriate access opportunities. Initially, some areas may need to be restricted for safety purposes.

Operational Management Opportunities

Over time, Alternative D would provide a logical boundary that could be easily identified. Full implementation would also eliminate the patchwork of ownership; reducing conflicting uses and providing a unified vision for management of the area also reduce visitor's confusion regarding multi-agency regulations. Full implementation would also provide an opportunity for law enforcement and other staff to be located on site, which would improve safety, security, park operations, and visitor opportunities.

Challenges to operations that would come from full implementation would be management of extensive existing infrastructure at the Townsite, some of which is currently deteriorating. Should this property become available for park management, additional analysis and evaluation of the facility conditions would be necessary. Further planning would identify potential uses of the area and its facilities. Some facilities could be removed, and others could be restored through partnerships with state and local governments and non-profit organizations. The NPS would also have to evaluate and remediate safety hazards associated with the former mining

facilities on areas that are considered abandoned mine lands. The Eagle Mountain mine is not considered an abandoned mine.

Costs

In the current fiscal environment, it is unlikely that funding increases will be immediately available to support the new addition upon transfer of the lands to NPS for management. In the short-term, existing funding for Joshua Tree National Park, including revenue from park entrance fees would be used for management of the newly added lands.

Operations

Initially, existing staff at the park would manage and operate the expanded park area. However, over time as implementation planning identifies specific resource management needs and visitor opportunities additional staffing and expertise needed for the expanded area would likely include:

- Resource management staff to document and manage the expanded scope of natural and cultural resources within the newly added area
- Interpretive staff to create and deliver visitor programs
- Law enforcement staff to protect resources and ensure a safe visitor experience
- Maintenance and facilities management staff, primarily for maintenance of Black Eagle Mine Road

Total additional staffing proposed would be seven FTE which would require an increase of $440,000 over the park's current annual operating budget.

Facilities

Phase 1. Over time, as implementation planning identifies specific projects and needs, additional funding would be sought. Facilities costs for Phases 1 would be the same as what is expected under Alternative C. Aside from existing roads, the area under consideration in Phase 1 contains very few facilities that would require NPS maintenance. Areas included in Phase 1 would include some of the former mining pits associated with the Eagle Mountain Mine. The NPS would need to address any hazards or safety issues associated with these former pits if KEM's reclamation requirements are not sufficient for NPS purposes.

Capital costs related to visitor services in Phase 1 may include funding for road improvements, new trails, overlooks, camping areas, or waysides. Further implementation planning would determine appropriate visitor facilities and would identify specific costs associated with those facilities. Additional inventories, documentation and mapping of cultural sites would be undertaken to inform implementation planning where necessary. Additional costs may also be incurred to address former mine sites that pose a public safety risk.

Phase 2. The NPS would assume maintenance for the full length of Black Eagle Mine Road, approximately 11 miles, and other access roads associated with the mining areas. Annual costs to maintain Black Eagle Mine Road in its current condition (passable by four-wheel drive vehicles only) are estimated at $11,000. If the NPS chose to improve Black Eagle Mine Road to accommodate passenger vehicles (unpaved), one-time capital costs are estimated at $385,000. Annual maintenance for an improved road would be $13,200. Some roads could be converted to trails, while others could be restored or used for visitor access.

As described in the feasibility analysis, the lands determined potentially feasible that could come into the park during Phase 2 would come with greater development and maintenance costs to the NPS. Further analysis of such costs would need to be completed at the time that lands became available to accurately assess current conditions. The Townsite area, in particular has many buildings in disrepair for which asbestos

and lead paint remediation may be required. NPS would seek to ensure that responsible parties conduct any required remediation prior to transfer. There are significant physical deficiencies in some of the buildings, including visible roof leaks, deteriorated ceilings, deteriorated plumbing, and potential hidden damage.

The Townsite also contains considerable electrical, road, water and sewer infrastructure that would need to be maintained. If such lands became available to NPS, the NPS would seek to engage in public-private partnerships to offset the costs. Another consideration would be for BLM to retain management over some or all of the Townsite and, through the Recreation and Public Purposes Act, lease the site to State or local governments, or non-profit organizations, for recreational or other public purposes to offset the federal government's costs of maintaining the site.

Specific costs for new visitor facilities and any road improvements over existing conditions would be evaluated in subsequent, implementation planning for the area. Planning would consider potential visitor use, facility and site design where appropriate, and detailed identification of resource protection needs. Actual costs to the NPS would vary depending on timing and implementation and contributions by partners and volunteers.

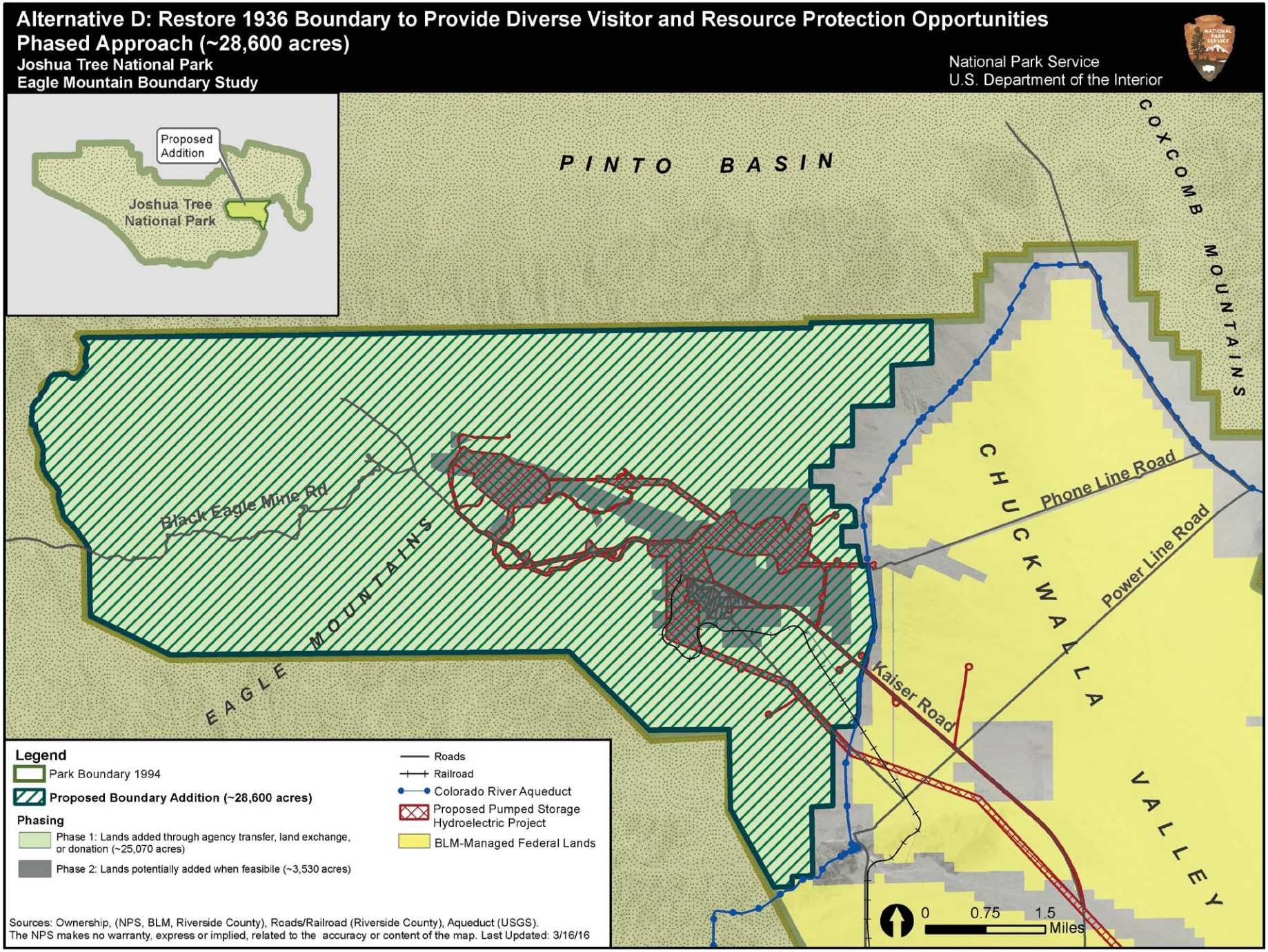

Alternative D: Restore 1936 Boundary to Provide Diverse Visitor and Resource Protection Opportunities
Phased Approach (~28,600 acres)
Joshua Tree National Park
Eagle Mountain Boundary Study
National Park Service
U.S. Department of the Interior
Proposed Addition
Joshua Tree National Park
PINTO BASIN
COXCOMB MOUNTAINS
CHUCKWALLA VALLEY
EAGLE MOUNTAINS
Black Eagle Mine Rd
Phone Line Road
Power Line Road
Kaiser Road
Legend
Park Boundary 1994
Proposed Boundary Addition (~28,600 acres)
Phasing
Phase 1: Lands added through agency transfer, land exchange, or donation (~25,070 acres)
Phase 2: Lands potentially added when feasibile (~3,530 acres)
Roads
Railroad
Colorado River Aqueduct
Proposed Pumped Storage Hydroelectric Project
BLM-Managed Federal Lands
Sources: Ownership, (NPS, BLM, Riverside County), Roads/Railroad (Riverside County), Aqueduct (USGS).
The NPS makes no warranty, express or implied, related to the accuracy or content of the map. Last Updated: 3/16/16
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Table 3-1: Alternatives Comparison Table

	Alternative A: No Action	Alternative B: Federal Agency to Agency Land Transfer (~22,135 acres)	Alternative C: Agency Transfer with Enhanced Habitat Connectivity and Recreation (~25,070 acres) (NPS Preferred Alternative and Proposed Action)	Alternative D: Restore 1936 Boundary to Provide Diverse Visitor and Resource Protection Opportunities – Phased Approach (~28,600 acres)
Area and description	• The park boundary would remain the same as designated by the California Desert Protection Act (CDPA) of 1994. • No property would be included in the national park boundary, either by federal land transfer, donation, or through the use of appropriated funds. • The 31,500-acre study area would continue to be owned and managed by a variety of public and private entities, without a cohesive vision for resource protection or public enjoyment opportunities.	• Existing federally owned and managed lands within the study area would be administratively transferred from the Bureau of Land Management to the National Park Service for management as part of Joshua Tree National Park. • Proposed transfer areas would not include BLM lands that have been previously withdrawn under the Federal Power Act for the proposed pumped storage hydroelectric project. • Approximately 380 acres of lands in areas with recently established and actively used unpatented mining claims would remain under BLM jurisdiction. • Private, state, and county-owned lands would not be included in the boundary and would continue to be used for existing purposes. • All existing valid rights would be retained (e.g. private property, mining claims).	• Includes all of the federal lands determined feasible for addition to the park (22,515 acres) and 2,555 acres of private and state lands west of the proposed Eagle Mountain Pumped Storage Hydroelectric Project area. • Proposed transfer areas would not include BLM lands that have been previously withdrawn under the Federal Power Act for the proposed pumped storage hydroelectric project. • Private land could be acquired when available through donation, or purchase by a third party from a willing seller and donated to NPS. NPS policy is to acquire land from willing sellers. State lands could be acquired through a land exchange. • Other private and county-owned lands would not be included in the boundary and would continue to be used for existing purposes. • All existing valid rights would be retained (e.g. private property, mining claims.	• All areas west of the Metropolitan Water District of Southern California's aqueduct lands would be included in the park boundary (approximately 28,600 acres), restoring lands that were removed from the NPS boundary in 1950. • This boundary configuration represents a long-term vision to restore these lands to Joshua Tree National Park. • The boundary adjustment would be implemented through Congressional legislation. • Designation would not affect private land ownership or valid existing rights such as the license for the proposed Eagle Mountain Pumped Storage Hydroelectric Project. • Because not all lands are currently feasible for park management at this time, NPS would implement a phased approach to land acquisition. Phase 1 would include lands included in Alternative C (25,070 acres), while Phase 2 would include all lands determined potentially feasible (~3,530 acres), which could be acquired at a later time when current uses cease, and if existing owners were willing to sell or donate lands to NPS.
Resource protection opportunities	• Allowable uses range from electric generation plants (wind, solar or geothermal); gas, electric and transmission facilities and cables; communications sites; livestock grazing; mining; and low to moderate recreational activities as defined in the BLM CDCA plan as amended. • Privately owned land would continue to be used for energy development, surface mining, and other residential and commercials uses in the Townsite per local planning and zoning. • Existing mitigation requirements and reclamation plans would guide resource protection efforts at the Eagle Mountain Mine and proposed Eagle Mountain Pumped Storage Hydroelectric Project.	• Including the federal lands in the national park boundary would provide the NPS the opportunity to protect the transferred lands in tandem with NPS-managed properties within Joshua Tree National Park. Benefits include protection from development, seamless protection of existing habitat, and restoration opportunities for disturbed lands that may provide greater landscape connectivity for wildlife such as desert bighorn sheep. • Areas proposed for addition are adjacent to Joshua Tree National Park wilderness areas and allow the NPS opportunities to better protect wilderness values. The NPS would work to ensure that future activities and uses do not diminish the wilderness values of adjacent areas. • The NPS would work collaboratively to document cultural resources within the newly added areas. • The NPS would conduct appropriate consultation and coordination with native cultural groups that have ties to the Eagle	**Same as Alternative B, plus:** • Inclusion of the additional private and state lands would allow for greater protection of existing habitat for wildlife such as desert bighorn sheep. • NPS could work to restore the previously mined areas, improving migration corridors for desert bighorn sheep.	**Same as Alternative C, plus:** • Alternative D would offer the greatest potential for protection of existing habitat and enhancing landscape-scale connectivity for area wildlife, including desert bighorn sheep. • In the long-term, the NPS would have an opportunity to fully protect cultural landscapes associated with historic resources, including the Eagle Mountain Mine and Townsite. • Potential for research, monitoring and educational programs with adaptive reuse of Townsite structures. • Offers greatest potential of protection for wilderness values (dark night sky, soundscapes, and visual impacts). • Provides the greatest opportunity for broad-scale restoration of disturbed lands.

	Alternative A: No Action	Alternative B: Federal Agency to Agency Land Transfer (~22,135 acres)	Alternative C: Agency Transfer with Enhanced Habitat Connectivity and Recreation (~25,070 acres) (NPS Preferred Alternative and Proposed Action)	Alternative D: Restore 1936 Boundary to Provide Diverse Visitor and Resource Protection Opportunities – Phased Approach (~28,600 acres)
		Mountain area. • The NPS could also work with private landowners on mitigation strategies to minimize the impacts from adjacent land uses. • Although specific implementation plans would be required for management actions such as restoration projects, the park's recently Completed Resource Stewardship Strategy (2014) would provide initial resource management guidance for those resources that are considered fundamental to the purpose of Joshua Tree National Park.		
Visitor experience opportunities	• On federally owned lands under BLM management, visitor opportunities would continue to include mining, off-highway vehicle use, backcountry camping, recreational shooting, and other allowable uses. • Visitor use would continue to be sparse given the remoteness of the area and lack of public access points from the east. • Public access to state, local, and privately owned lands would generally remain restricted with the exception of access along public roads. • Little to no interpretation of the area's significant resources currently takes place in the study area.	• New visitor opportunities in the Eagle Mountains could be explored (e.g. backcountry hiking, night sky viewing, and informal camping). • NPS could explore improvement of Black Eagle Mine Road for safer visitor and staff travel. Other facilities that could be explored include trails, or camping areas. • Consideration would be given to areas where interpretive signage could provide information about the area and its history. • NPS could interpret the Eagle Mountain Mine and Townsite where visible from the boundary adjustment area. Additionally, the NPS could work cooperatively with Eagle Crest Energy Company to explore interpretive opportunities in areas that would not conflict with the operation of the Eagle Mountain Pumped Storage Hydroelectric Project. • Access to privately owned properties and FERC energy license withdrawal lands would still be restricted. However, NPS could explore opportunities to provide access on public roads where appropriate, or through agreements with adjacent land owners.	• Same as Alternative B, plus: • Potential for additional interpretive opportunities regarding the historic Eagle Mountain Mine over Alternative B.	**Same as Alternative C, plus:** • A wider range of visitor opportunities could occur with greater access and more lands available for park use. • There would be opportunities for a broad array of cultural interpretation of mining sites. • Offers the greatest potential for new recreational opportunities, visitor services. • Historic resources could be used for new visitor opportunities. Examples include overnight accommodations, biking could occur on former Townsite roads. • Potential for commercial uses and concessions related for former Townsite and other mine facilities (e.g. mine tours). • Options for use and management of Townsite by other state or local governments could be explored for uses compatible with the park. • Public-private partnerships for the Townsite.
Operational management opportunities	• BLM- would continue to have jurisdiction over federally owned lands. • Private and state lands would continue to offer little to no public or NPS access.	• NPS could expend funds on studies and projects related to natural and cultural resource protection for most of the lands within the study area. • Resources within this area would be inventoried. The need for inventory and monitoring is heightened with the effects of climate change on park resources and the impacts that will result from construction and operation of energy projects in the region. • NPS policies and regulations would apply creating a seamless management approach and preventing uses that are incompatible or in conflict with park purposes.	**Same as Alternative B**	**Same as Alternative C, plus:** • Creates a more defensible and logical boundary. • Less confusion to the public in terms of land management/regulations. • Efficiencies to having the Townsite resources that could support on-site park operations.

		Transfer (~22,135 acres)	Enhanced Habitat Connectivity and Recreation (~25,070 acres) (NPS Preferred Alternative and Proposed Action)	to Provide Diverse Visitor and Resource Protection Opportunities – Phased Approach (~28,600 acres)
Costs	• This alternative would require no new federal capital or operating costs to the NPS. However, park staff would continue to spend time reviewing and commenting on development proposals and mitigation plans for the area as they relate to management of park resources. • The annual operating budget for the park in FY15 $6.06 million. Current park FTE: is 99.25.	• Capital costs may include funding for road improvements, new trails, overlooks, camping areas, or waysides. Implementation planning would identify specific costs. • Costs may also be incurred to addressed abandoned mine sites that pose a public safety risk. • Annual increases in road maintenance to maintain approximately 4.5 miles Black Eagle Mine Road would be about $4.5-5.4k annually. Road improvements (unpaved) would be a one-time capital cost of $157.5k. • The estimated increase to the park annual budget would be $240K, primarily to fund 3 FTE to staff the area.	**Same as Alternative B, plus:** • The estimated increase to the park annual budget would be $340K, primarily to fund 5 FTE to staff the area. • Annual increases in road maintenance to maintain approximately 8 miles Black Eagle Mine Road would be about $8-9.6k annually. Road improvements (unpaved) would be a one-time capital cost of $280k.	• Costs for phase 1 would be the same as costs for Alternative C. For phase 2, staffing would increase to 7 at a cost of $440k • Annual increases in road maintenance to maintain approximately 11 miles Black Eagle Mine Road would be about $11-13.2k annually. Road improvements (unpaved) would be a one-time capital cost of $385k. • Phase 2 could involve considerable costs given the amount of facilities and infrastructure within the area. Public-private partnerships could be sought to offset such costs. • Costs may also be incurred to address abandoned mine sites that pose a public safety risk.

CHAPTER 4: AFFECTED ENVIRONMENT

Air Quality

Joshua Tree National Park is protected as a Class I Airshed under the Clean Air Act, which is the highest protection afforded by the Act (NPS 1996). However, as a result of regional air pollution sources, the park has some of the worst air pollution in the national park system. A recent report completed by the National Parks Conservation Association (NPCA) on air pollution at national parks found Joshua Tree National Park to be the fourth most polluted national park (NPCA 2015). Although the Environmental Protection Agency (EPA) has mandated that the skies above our national parks be subject to the most stringent level of protection, Joshua Tree National Park consistently exceeds the 120 ppb ozone concentration levels set by the EPA for human health at its monitoring station located in the northwestern part of the park (NPS 2015a, NPS 2014, NPCA 2015). Air quality in the study area is expected to be similar.

California's geography and wind patterns cause pollution to blows into the park from surrounding urban areas. Growth in the Coachella Valley impacts air quality in the park, but the Los Angeles basin, with a population over 12 million, is the major contributor of ozone and other pollutants that reach the park (NPS 2014).

The primary human cause of pollution at Joshua Tree National Park is nitrates, formed in the atmosphere from emissions of nitrogen oxides and sulfur dioxides. These emissions are released from vehicles, power plants, and other industrial sources. Wind speed and direction, seasons, and topography can affect how pollutants are dispersed, but generally some degree of air pollution is likely detectable on most days. It is more noticeable during summer months when winds blow nitrogen oxides, volatile organic compounds and other pollutants into the desert from the Los Angeles metropolitan area. Air quality is better in the winter when the prevailing air flows are not from the Los Angeles area (NPS 2014). Dust, particulates, and smog create a haze that limits the views in and from the park and is unhealthy for people, wildlife, and vegetation (NPS 1995, NPCA 2015).

Polluted air contains particulate matter that drops out nitrates onto the soil. Desert plants that have adapted to survive in nitrogen-poor soils must now compete with non-native grasses and other exotic plant species that thrive with the added fertilizer. Ozone can burn plants and stunt growth. Particulate matter contributes to heart and lung problems, particularly for children. Air pollution also creates a haze impedes visibility. On a clear day visitors to Joshua Tree National Park can see the Mexican border from the mile-high vantage point of Keys View. But more often, visitors can barely see 45 miles away (NPCA 2015).

Small amounts of air pollution are currently generated in the study area and are primarily from automobiles and dust, which produce a minor amount of pollutants. Additionally, growing development (power plants, transportation, construction, etc.) and land use changes create dust, particulates, and smog that impact air quality and visibility. As urban encroachment continues, air quality is expected to worsen.

Climate

The Mojave and Colorado deserts intersect within the study area. Generally, the climate of the study area is typical of an arid southern low Californian desert: hot, dry summers (over 110°F) and mild to cold winters (average of

54°F). Rainfall is highly variable. It's uniformly dry and rainfall averages less than six inches/year, over the course of two raining seasons in winter and late summer.

Winter storms generally bring widespread, longer-duration, low-intensity rainfall, particularly in the western desert regions, and summer monsoons generate isolated, short, high-intensity rainfall in the eastern desert regions. The climate of the Mojave and Colorado/Sonoran deserts differs, especially with respect to temperature and precipitation. Annual precipitation ranges from approximately three inches in the low deserts (such as the Colorado) to approximately 8 inches in the high deserts and desert ranges (such as the Mojave) while annual temperature ranges from approximately 60 to 75 degrees Fahrenheit (°F) in the low deserts to approximately 45°F to 77°F in the high deserts and desert ranges (BLM 2015a).

Climate Change and Energy Conservation

It is now well established that rising global greenhouse gas (GHG) emission concentrations are significantly affecting the earth's climate (CEQ 2014). The Intergovernmental Panel on Climate Change (IPCC) established with certainty that the Earth's climate is rapidly changing and that human influence is a dominant cause. The IPCC Fifth Assessment Report (IPCC 2013) states that warming of planet's climate is unequivocal: the atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased.

The IPCC found evidence for human influence continues to grow. The IPCC concludes that the anthropogenic (human-caused) increase in GHG concentrations and other human sources caused more than half of the observed increase in global average surface temperature from 1951 to 2010. Numerous plans and strategies have been developed to respond to this growing crisis such as the President's *Climate Action Plan*, Executive Order 13693, the Environmental Protection Agency's Greenhouse Gas Reporting Program, the National Fish, Wildlife, and Plants Climate Adaptation Strategy, and others (BLM 2015a). State and federal agencies have specific climate change plans. California's Climate Change Strategy identifies several key actions to address the issue. One is a commitment that by 2030, California will increase the amount of electricity from renewable sources from 33% to 50%.

The NPS has developed both a *NPS Climate Change Response Strategy* and *Climate Change Action Plan* to help parks effectively plan for and respond to climate change (NPS 2010a, NPS 2010b). The NPS has a mandate and obligation to curb the carbon pollution that is driving climate change and we must improve its ability to prepare for existing climate impacts. Joshua Tree National Park is a participant in the NPS Climate Friendly Parks Program, which sets goals for greenhouse gas emission reductions. Joshua Tree National Park's *Climate Action Plan* describes how the park will accomplish these goals. The park replaced fossil-fuel generators in the 1990s with stand-alone photovoltaic (PV) systems to harness the abundant solar energy available in the desert. The park has continued to reduce its carbon footprint and our energy costs by installing grid-tied PV systems that produce clean electrical power. Joshua Tree National Park, located within the Pacific West Region of the National Park Service (NPS), is involved in the first regional effort in the NPS to become carbon neutral (NPS 2010a). The Pacific West Region has developed a vision of having its park operations be carbon neutral and established a goal of having all of its parks become a member of the Climate Friendly Parks Program. The park's *Climate Action Plan* is available online at: www.nps.gov/climatefriendlyparks/parks/jotr.html.

One role of Bureau of Land Management (BLM) to address climate change allows for the development of renewable energy projects on public lands in the California Desert. BLM manages approximately 22 million acres of land with high solar energy potential. BLM's Desert Renewable Energy Conservation Plan (DRECP) and Solar Energy Program provide a strategy for siting future renewable energy developments. The DRECP Preferred Alternative would designate 388,000 acres as Development Focus Areas for renewable energy, and leave an additional 840,000 acres open for potential renewable energy development. Development Focus Areas represent the areas which activities associated with solar, wind, and geothermal development, operation, and decommissioning could occur.

Topography and Geology

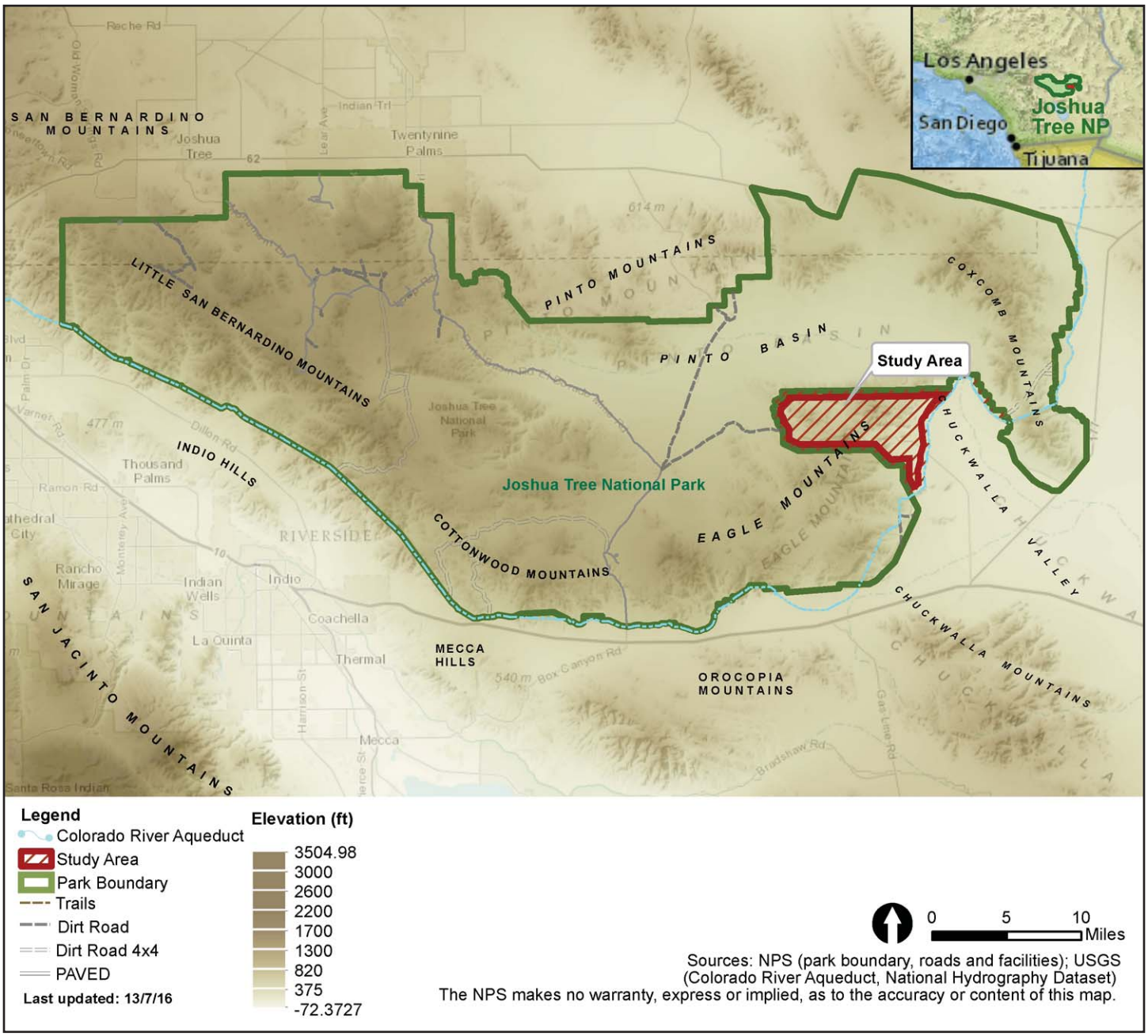
The study area is situated within the eastern part of California's Transverse Ranges province and straddles the transition between the Mojave and Sonoran deserts. The westernmost portion, adjacent to Joshua Tree National Park is in the Mojave Desert, while the majority of the study area is within the Colorado Desert. The Mojave Desert is bounded on the west by the Sierra Nevada, Tehachapi, San Bernardino, and San Gabriel mountain ranges. The Colorado Desert is bounded on the west by the Peninsular Ranges and on the east by the Colorado River. The Eagle Mountains runs through the study area. The Coxcomb Mountains are to the northeast, the Pinto Basin is north; to the south are the Orocopia, Chuckwalla, Cottonwood, and Chocolate Mountains ranges.

The land in and around Joshua Tree National Park was created at least 1.7 billion years ago when a mix of igneous and metamorphic rocks, including Pinto gneiss, developed deep under a massive mountain system. During the Mesozoic era from 250 to 75 million years ago there was active subduction of the Pacific Plate under the North American Plate leading to more upwelling of intrusive volcanic material that formed several types of granite that are found in the Eagle Mountains and other nearby mountain ranges (Dilsaver 2015, Harder 1912, Force 2001). Fractured, jointed and picturesque Monzogranite features are found throughout the park and as well the Pinto, Eagle, and Coxcomb mountains; however, these formations are not in the study area; instead, there are gentle slopes and undulating rocky slopes, outcrops and valleys.

The topography of the study area is typical of western deserts: bare mountain ranges are separated by flat connecting deserts. *See Map 4-1: Topography*. The mountains rise abruptly out of the desert to an elevation of approximately 3,000 feet. The mountains are dissected by sharp gullies with high, barren, rock walls and canyons. Alluvial fans spill from the gullies of the mountains and connect toward the center of the desert basin (or playa). On gradual mountain slopes, soils are deep, sandy, loamy, and covered with vegetation; on steeper slopes, bedrock outcrops are more gravelly with less vegetation. Many of the flat areas have a thin white crust of alkali or salt. Soil conditions consist of desert pavement, erosive (e.g., carbonate, high-silt) soils, corrosive saline soils saline, and expansive (high-clay) soils (BLM 2015a).

The Chuckwalla Valley contains an active wind-blown, or aeolian, sand migration and deposition that contribute to the formation of sand dunes on the valley floor. The general direction of the aeolian-driven sand migration is to the southeast and east, toward the Colorado River. The sand migration corridor situated within the upper Chuckwalla Valley has been designated as the "Palen Dry Lake–Chuckwalla" corridor, which runs past the central project area and to the north of Desert Center toward Palen Dry Lake (FERC 2012). There are no active faults known to exist within the study area, but San Andreas, Garlock, Blue Cut, and Pinto Mountain fault zones are nearby.

Map 4-1: Topography



The U.S. Geological Survey recently worked with Joshua Tree National Park to complete a geologic database of the park. This effort included some mapping of the Eagle Mountains. However, not all of the area was mapped. *Map 4-2: Geology* provides an overview of regional geology from the California Geological Survey, and *Map 4-3: Geology of the Eagle Mountain Mine* features a geologic map completed for the mine by the U.S. Geological Survey in 2001.

Joshua Tree National Park Geologic Description

The following geologic description is from the recent U.S. Geological Survey mapping effort at Joshua Tree National Park.

The geologically diverse terrain that underlies Joshua Tree National Park reveals a rich and varied geologic evolution, one that spans nearly two billion years of Earth history. The park's landscape is the current expression of this evolution, its varied landforms reflecting the differing origins of underlying rock types and their differing responses to subsequent geologic events. Crystalline basement in the Park consists of Proterozoic plutonic and metamorphic rocks intruded by a composite Mesozoic batholith of Triassic through Late Cretaceous plutons arrayed in northwest-trending lithodemic belts. The basement was exhumed during the Cenozoic and underwent differential deep weathering beneath a low-relief erosion surface, with the deepest weathering profiles forming on quartz-rich, biotite-bearing granitoid rocks. Disruption of the basement terrain by faults of the San Andreas system began circa 20 million years from the present (Ma) and the Joshua Tree National Park sinistral domain, preceded by basalt eruptions, began perhaps as early as circa seven Ma, but no later than 5 Ma. Uplift of the mountain blocks during this interval led to erosional stripping of the thick zones of weathered quartz-rich granitoid rocks to form etchplains dotted by bouldery tors—the iconic landscape of the park. The stripped debris filled basins along the fault zones.

Mountain ranges and basins in the park exhibit an east-west physiographic grain controlled by left-lateral fault zones that form a sinistral domain within the broad zone of dextral shear along the transform boundary between the North American and Pacific plates. Geologic and geophysical evidence reveal that movement on the sinistral faults zones has resulted in left steps along the zones, resulting in the development of sub-basins beneath Pinto Basin and Shavers and Chuckwalla Valleys. The sinistral fault zones connect the Mojave Desert dextral faults of the Eastern California Shear Zone to the north and east with the Coachella Valley strands of the southern San Andreas Fault Zone to the west. Quaternary surficial deposits accumulated in alluvial washes and playas and lakes along the valley floors; in alluvial fans, washes, and sheet wash aprons along piedmonts flanking the mountain ranges; and in eolian dunes and sand sheets that span the transition from valley floor to piedmont slope. Sequences of Quaternary pediments are planed into piedmonts flanking valley-floor and upland basins, each pediment in turn overlain by successively younger residual and alluvial surficial deposits (Powell, Matti, and Cossette 2015).

Eagle Mountain Mine Geologic Description

The U.S. Geological Survey documented the geology of the Eagle Mountain Mine in 1991. The following geologic description is from Force 2001. *See Map 4-3: Geology of the Eagle Mountain Mine*.

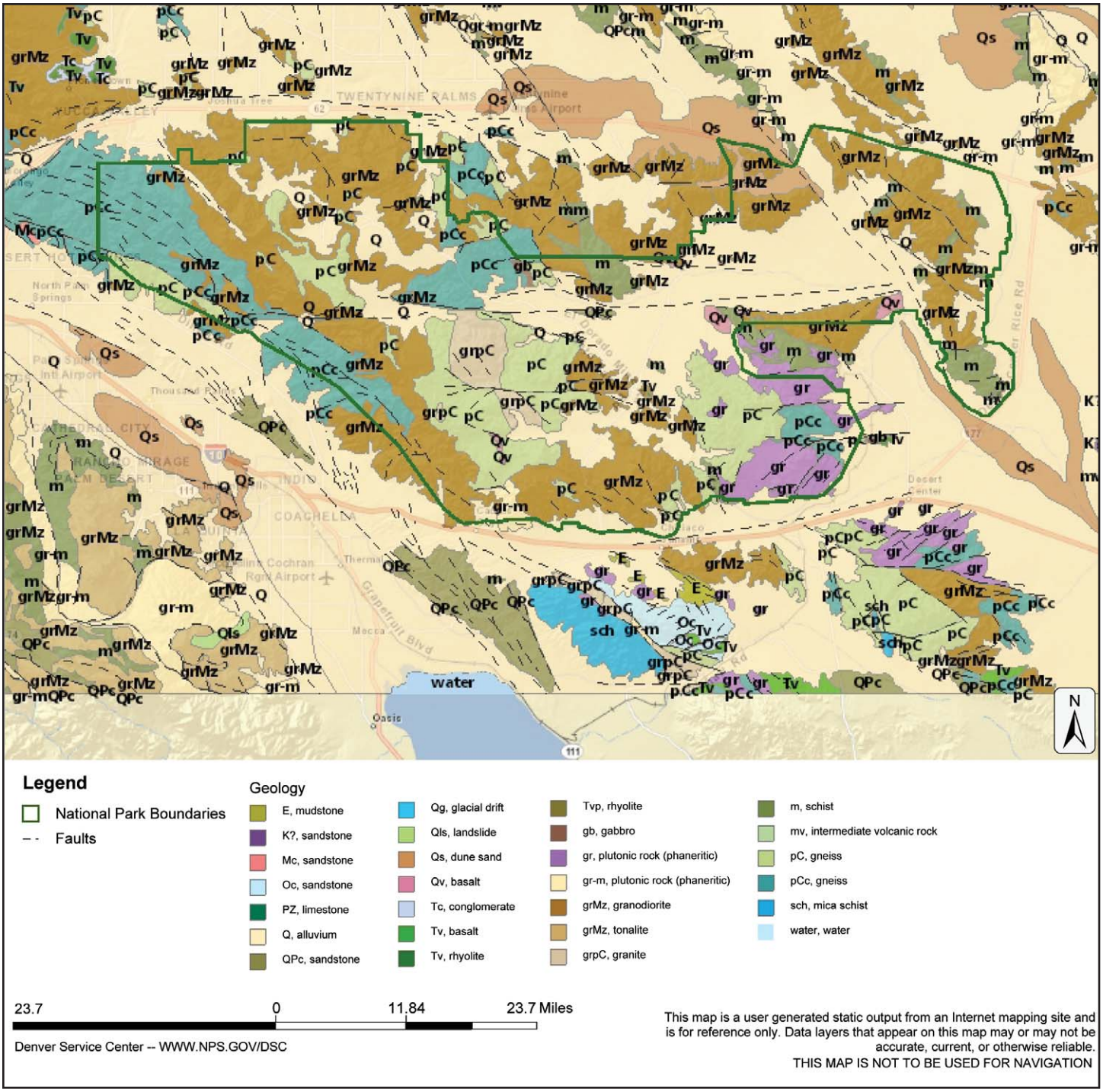
Gneissic basement rocks are overlain by two sedimentary units, separated by unconformities. The lower unit contains carbonate rocks and quartzite; the "vitreous quartzite" of previous workers, however, is an alteration feature rather than a stratigraphic one. The upper unit contains thick conglomerates. This layered sequence of rocks is deformed into a west-plunging anticline. Intrusion by Jurassic quartz monzonite apparently followed this deformation.

Quartz monzonite forms a branching network of sills, some of which dilate the contact between the upper and lower sedimentary sequences. Intrusion resulted in extensive, mostly-anhydrous skarns, but stratabound iron ore is just as closely related to some other features: 1) regional alteration of quartz monzonite, with iron ore adjacent to little-altered rocks along the boundary between sodic and potassic domains, 2) the two unconformities, which apparently formed stratigraphic traps for precipitation of stratabound iron ores, 3) a north-facing monoclinal plane between folds, which was preferentially replaced.

Iron ore replaces a variety of host rocks along the two unconformities, forming massive to globular bodies, and its mineralogy correlates with deuteric alteration features, not anhydrous skarn. Its pyrite contains as much as 3% cobalt.

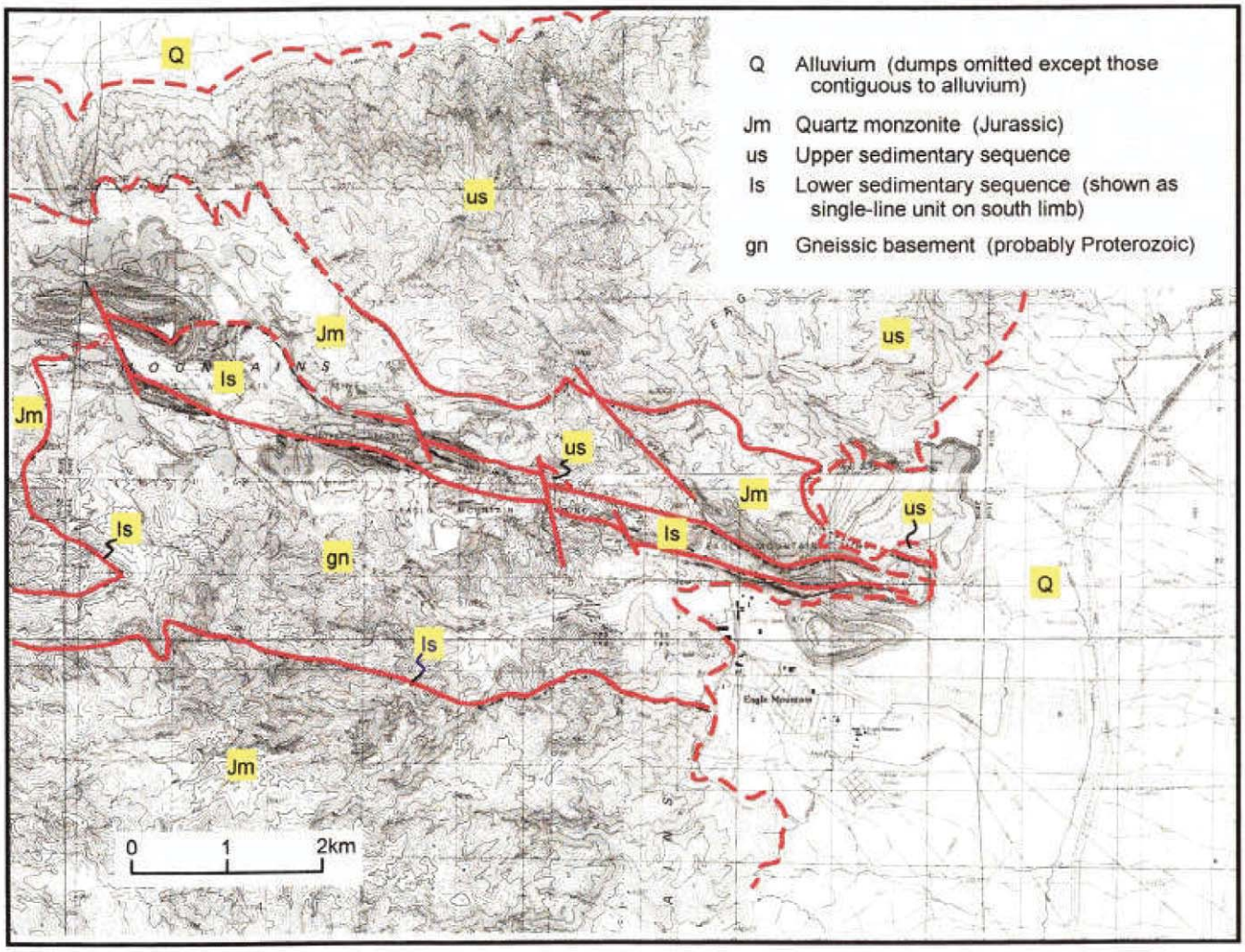
Iron was only one of five elements that showed mobility in this region on a scale that suggests basic crustal processes. The others in probable order of flux magnitude are silica, magnesium, sodium, and potassium, to form regionally distributed “vitreous quartzite,” dolomite, and secondary feldspars, respectively.

Map 4-2: Geology



Source: California Geological Survey, Geologic Data Map No. 2, Compilation and Interpretation by: Charles W. Jennings (1977), Updated version by: Carlos Gutierrez, William Bryant, George Saucedo, and Chris Wills.

Map 4-3: Geology of the Eagle Mountain Mine



Reconnaissance geologic map of the eastern and central parts of the Eagle Mountain mine area at 1:48,000, on topographic base.

Force, Eric R. (2001). Eagle Mountain mine—Geology of the former Kaiser Steel operation in Riverside County, California. U.S. Geological Survey Open-File Report 01-237, Tucson, AZ.

Mineral Resources

Authorities

The Mining Law of 1872, as amended, the major federal law governing locatable minerals, declared all valuable mineral deposits in lands belonging to the United States to be free and open to exploration and purchase. This law provides citizens of the United States the opportunity to explore for, discover, and purchase certain valuable mineral deposits on public domain lands.

The Federal Land Policy and Management Act of 1976 did not amend the 1872 law, but did affect the recordation and maintenance of claims. Persons holding existing claims were required to record their claims with the managing federal land agency by October 1979, and all new claims were required to be recorded with the managing agency. Its purpose was to provide the government with information on the locations and number of unpatented mining claims, mill sites, and tunnel sites; to determine the names and addresses of current owners; and remove the cloud of title on abandoned claims.

History and Mineral Availability

A geologic survey and assessment has not been completed for this boundary study. However, a Mineral Potential Report to assess the mineral potential of the federal lands in the study area will be completed before any action is taken on the BLM segregation and withdrawal process. Past mining records, previous mineral reports for land in and adjacent to the study area and the *Desert Renewable Energy Conservation Plan Proposed Land Use Plan Amendment Final Environmental Impact Statement* (DRECP LUPA) provide an overview and assessment of the potentially present minerals.

Mining is an integral part of the region's history, beginning over 130 years ago when prospectors roamed the west in search of gold, silver, and other valuable minerals. There are nearly 300 abandoned mines in Joshua Tree National Park and several mining districts in and adjacent to the park including the Twentynine Palms, Dale, Rattler, Monte Negras, Eagle Mountains, Cottonwood Spring, Piñon, and Gold Park districts (Trent 1998). In the late 1880s, gold and silver discoveries in the Chuckwalla Mountains caused the greatest gold rush in Riverside County (BLM 2012).

Mines in the Eagle Mountains produced gold, lead, silver, tungsten, copper, and limestone (see *Table 4-1: Former Mines and Associated Commodities Within the Study Area* and *Map 4-4: Minerals*). The mineral mined in the largest quantity was iron, with the richest deposit located in the northern Eagle Mountains at the Eagle Mountain Mine. The Eagle Mountain Mine was the largest mining operation west of the Mississippi River and mined 100 million tons of iron ore during its operation from 1948 to 1983 (BLM 1993). Metal production from the Eagle Mountain mining district also included 7,257 oz. of gold, 14,768 oz. of silver, 1.48 million pounds of lead, and 114,424 pounds of copper (Powell et. al. 1984).

In 1984, a *Mineral Resource Potential Report of the Eagle Mountains Wilderness Study Area* was completed for land in the western study area (Powell et. al. 1984). This report states that gold, silver, tungsten, molybdenum, manganese, zinc, copper, lead minerals, scheelite, galena, pyrite, fluorite, hematite, limonite, copper carbonate minerals and dendritic manganese oxide are likely to occur in the Eagle and Chuckwalla Mountains (Powell et. al. 1984). The report also states that the rare earth minerals of thorium, lanthanum, and yttrium were detected in mineral samples and are likely to occur in some of the more common minerals identified in heavy mineral fractions from the Eagle Mountains, such as apatite, fluorite, sphene, and zircon (Powell et. al. 1984).

The Powell report stated gold, silver and tungsten are common in the Transverse Ranges and Mojave Desert provinces of southern

California, but that the deposits are generally small in volume and of low to medium grade, although some high grade pockets have been found. It also noted that the occurrence of larger subsurface gold and silver deposits are possible because the geologic setting of the area is similar to other large gold producing regions in the Rand, Cargo Muchacho, and Chocolate Mountains (Powell et. al. 1984).

An assessment of the mineral potential for the lands within the 160,000 acre Riverside Solar Energy Zone (SEZ), which lies approximately 10 miles from the eastern boundary of the study area (BLM 2012), made similar conclusions. This report states that deposits of locatable minerals exist at the base of adjacent mountain ranges. The area contains known deposits of locatable minerals, most of which occur along the margins where site boundaries overlap the base of adjacent mountain ranges. Based on mineral maps, the report found the area to have reasonable potential for iron, gold, silver, uranium, thorium, copper, tungsten, lead, zinc, gypsum, silica, and wollastonite (BLM 2012). The DRECP LUPA identified the Riverside SEZ as a high potential mineral location area (Figure R1.15-1)[1].

A broad mineral analysis was completed for the 22 million acre DRECP plan area. It concluded that no rare earth minerals were present in the study area (Figure III.15-3) and that the boundary study area was not an area of high mineral potential (Figure R1.15-7) (BLM 2015a).

Table 4-1: Former Mines and Associated Commodities Within the Study Area

Mine	Commodity
Rainbows End Mine	Copper
Belt Mine	Copper
Mission Sweet Mine	Gold
Iron Chief Mine	Gold
Waterloo Mine	Gold
Iron Chief Mine	Gold
Cactus Group Mine	Gold
Black Giant Mine	Iron
Eagle Mountain Mine*	Iron
Eagle Mountain Mine and Plant	Iron, Silica, Sulfur, Magnesite, Phosphorus-Phosphates, Calcium, Aluminum
Iron Chief Mine	Iron, Sulfur, Phosphorus-Phosphates, Silica
Black Eagle Mine	Lead, Copper, Gold, Silver
Big Henry Mine	Tungsten

Source: USGS 2011
*Mine is still active.

Mineral Categories ~~and Current Uses~~

Minerals on Bureau of Land Management (BLM) managed land are categorized as leasable, saleable, or locatable. Each classification is administered differently according to federal regulations and may have different requirements for acquisition, exploration, and development.

Leasable minerals are explored-for and developed in accordance with the Mineral Leasing Act of 1920, other leasing acts and BLM regulations. Leasable minerals today include oil and gas, oil shale, geothermal resources, potash, sodium, native asphalt, solid and semisolid bitumen, bituminous rock, phosphate, sulfur, and coal. The study area also does not contain geothermal energy resources, oil, gas or other leasable resources (BLM 2015a).

[1] High-potential mineral areas are lands with existing and/or historic mining activity and a reasonable probability of future mineral resource development.

Locatable minerals are any minerals not leasable or salable, and are managed under the General Mining Law of 1872 and BLM regulations (43 CFR 3700 and 3800). Mining claims are staked on locatable minerals on public domain lands. Some typical locatable minerals potentially available in the study area include gold, silver, iron, copper, cobalt, tungsten, silica, gemstones, lead, zinc, barite, gypsum, and certain varieties of high calcium limestone.

Locatable minerals can be obtained by filing a mining claim. The BLM policy and guidance for locatable minerals includes *BLM Manual 3800—Mining Claims Under the General Mining Laws and BLM Handbook H-3042-1—Solid Minerals Reclamation Handbook*. The Federal Land Policy and Management Act of 1976 recognizes the rights of locators to claims filed under the Mining Law of 1872, including the right of ingress and egress. A mining claim is a parcel of land probably containing valuable mineral in its soil or rock, and appropriated by an individual, according to established rules, by the process of "location." There are 460 active unpatented claims held by Kaiser Eagle Mountain, LLC ~~(subsidiary of Eagle Crest)~~. There are an additional six active unpatented claims held by others, most of which are placer claims~~ with mining activities that do not involve the use of earth-moving equipment or explosives.~~ These claims are primarily prospected primarily for gold. Rockhounding - collecting rocks, mineral specimens, gemstones, or petrified wood for non-commercial purposes– does not require a permit or mining claim and is also considered a casual use of public lands. See *Appendix D: Unpatented Mining Claims* for a full list of claims and locations and *Map 4-5: Mining Claims, Past and Present Mineral Producers* for a map depicting mining claims and mineral producers in the study area.

Current Uses and Mining

Six unpatented claims are held by private individuals or mining clubs. These claims are mined casually and do not involve the use of earth-moving equipment or explosives.

There are 460 unpatented claims held by Kaiser Eagle Mountain, LLC (KEM) but no extractive mining currently occurs on these claims. There are also patented claims within the study area associated with the former Eagle Mountain Mine~~, which are currently owned by Eagle Crest Energy Company (recently purchased from CIL&D),~~ and one other patented claim held by another private owner.

As stated above, millions of tons of iron, a locatable mineral, were extracted from the Eagle Mountain Mine before its closure. Open pit, multi-bench, drill and blast extraction, multi-stage separation, crushing and other processing operations no longer occur at the mine. ~~However~~,

The Eagle Mountain Mining & Railroad Company, LLC (EMMR), a wholly-owned subsidiary of CIL&D, LLC, has a Mining Lease and Agreement and various implementing agreements with ~~Kaiser Eagle Mountain, LLC~~KEM (each dated June 29, 2015) that allows EMMR to mine (extract~~ion,~~ process~~ing~~ and transport off-site of aggregate from stockpiles and related support activities) the stockpiled rock, iron ore pellets, coarse and fine tailings. ~~do still occur~~. Additionally, The County of Riverside considers the Eagle Mountain Mine as having vested mining rights due to the continuing removal and transport of surface mined materials. The Mining Lease does not currently include new extractive mining as such rights are reserved to and owned by ~~Kaiser Eagle Mountain, LLC~~KEM.

These activities are allowable surface mining operations as defined by Surface Mining and Reclamation Act (SMARA), Section 2735. In a 2013 Interim Management Plan (IMP)

completed for the Kaiser Eagle Mountain Mine, Kaiser Eagle Mountain, LLC placed the mine in administrative "idle" status and clarified that surface mining operation at the mine have been and will remain ongoing (Kaiser Eagle Mountain, LLC 2013). This "idle" status means that surface mining operations are curtailed by more than 90 percent of the operation's previous maximum annual production, with the intent to resume those surface mining operations at a future date. The estimated maximum production of the aggregate per year is 18,500 tons (Kaiser Eagle Mountain, LLC 2013~~)~~ Both ~~Kaiser Eagle Mountain~~KEM and EMMR report ~~It is estimated~~ that there are over 165 million tons of stockpiled rock and over one billion tons of in place rock ~~located in and around~~at the West End of the Eagle Mountain Mine (BLM 1993). The rock and aggregate resources stockpiled in the eastern half of the Eagle Mountain Mine have not been estimated, but EMMR predicts it totals over 44 million cubic yards. Markets for the mined aggregate exist; such aggregate may be used and sold at the discretion of the owner.

Eagle Mountain Mining and Railroad (EMMR), a Kaiser subsidiary, is planning to increase the sale and shipment of material off-site by 2018 and asserts the possibility that large-scale mining activities could also resume (Kaiser Eagle Mountain, LLC 2013). The rights for new extractive leasing are under the ownership and control of Kaiser Eagle Mountain, LLC. In 1983~~.~~, Kaiser Steel's Mining Engineering Department ~~estimated,~~estimated that there w~~ere~~as approximately 335 million tons of measured and indicated iron ore at Eagle Mountain. In 1987, the U.S .Bureau of Mines estimated the mine's reserves at 339.5 million tons. The 2013 IMP stated that several studies, including a U.S. Geological Survey study titled "Eagle Mountain Mine, Geology of the former Kaiser Steel operation in Riverside County, California" indicate~~s~~ that there may be as much as 550 million tons of iron ore reserves at the mine (USGS 2001). A mineral report prepared by the BLM in 1993 found that lands under consideration for the proposed Eagle Mountain Landfill did not contain minerals of economic value that could be developed under the United States mining and mineral leasing laws, and that the probability of future development of mineral resources within the mine is low.

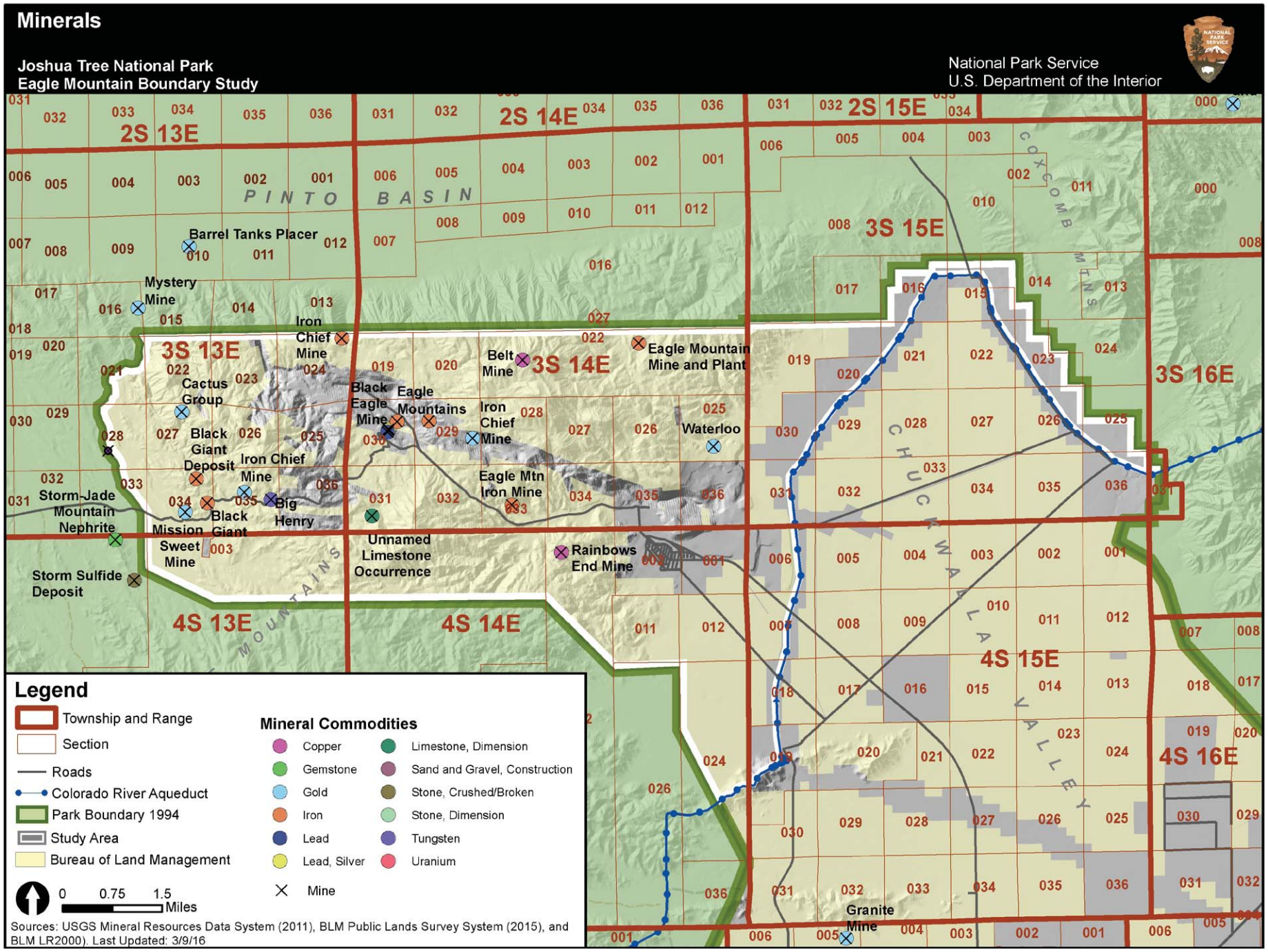
Extractive mining could only resume if CIL&D reacquires ~~Kaiser Eagle Mountain, LLC~~ KEM or if ~~Kaiser Eagle Mountain, LLC~~KEM decides to undertake extractive iron ore mining if it became economically viable.

Salable minerals, or mineral materials, are common varieties of minerals and building materials such as sand, stone, gravel, pumice, pumicite, cinders, and clay. The BLM manages salable minerals under the Materials Act of 1947, as amended, and implementing regulations (43 CFR 3600), which authorize disposal either through a contract of sale or a free use permit. There are no salable minerals on BLM managed land.

More information on mining history, mining claims, and current mining practices can be found in the *Land Use* and *Visitor Opportunities and Access* sections.

Aggregate and other rock products continue to be extracted from tailing piles at the Eagle Mountain Mine

Map 4-4:


Minerals
Joshua Tree National Park
Eagle Mountain Boundary Study
National Park Service
U.S. Department of the Interior
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2S 15E
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3S 16E
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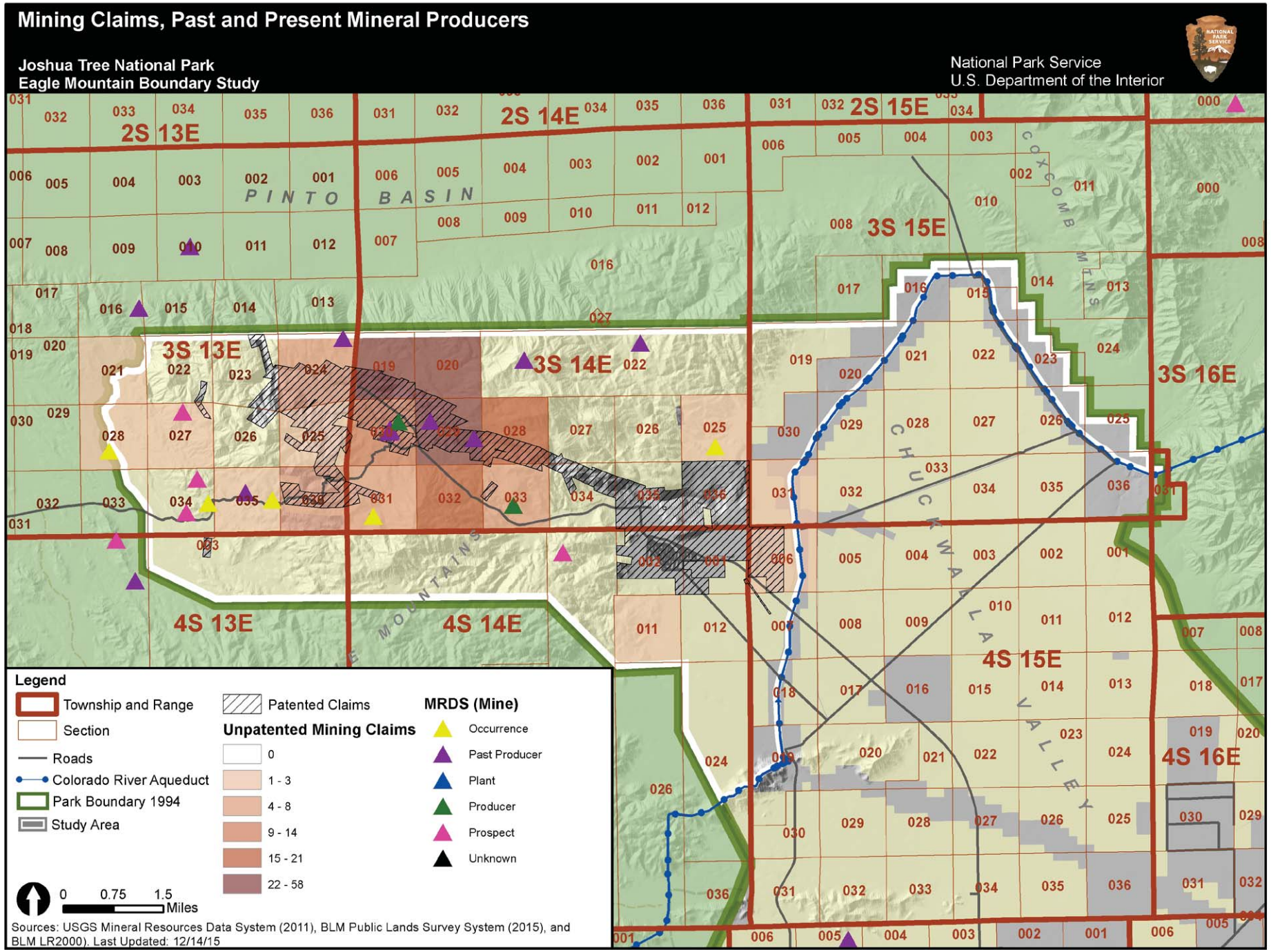
4S 14E
4S 15E
4S 16E
PINTO BASIN
COXCOMB MTNS
CHUCKWALLA VALLEY
MOUNTAINS
Barrel Tanks Placer
Mystery Mine
Iron Chief Mine
Belt Mine
Eagle Mountain Mine and Plant
Cactus Group
Black Eagle Mine
Eagle Mountains
Iron Chief Mine
Waterloo
Black Giant Deposit
Iron Chief Mine
Eagle Mtn Iron Mine
Storm-Jade Mountain Nephrite
Mission Sweet Mine
Black Giant
Big Henry
Unnamed Limestone Occurrence
Rainbows End Mine
Storm Sulfide Deposit
Granite Mine
Legend
Township and Range
Section
Roads
Colorado River Aqueduct
Park Boundary 1994
Study Area
Bureau of Land Management
Mineral Commodities
Copper
Gemstone
Gold
Iron
Lead
Lead, Silver
Limestone, Dimension
Sand and Gravel, Construction
Stone, Crushed/Broken
Stone, Dimension
Tungsten
Uranium
Mine
0 0.75 1.5 Miles
Sources: USGS Mineral Resources Data System (2011), BLM Public Lands Survey System (2015), and BLM LR2000). Last Updated: 3/9/16


Mining Claims, Past and Present Mineral Producers
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4S 16E
PINTO BASIN
COXCOMB MTNS
CHUCKWALLA VALLEY
MOUNTAINS
Legend
Township and Range
Section
Roads
Colorado River Aqueduct
Park Boundary 1994
Study Area
Patented Claims
Unpatented Mining Claims
0
1 - 3
4 - 8
9 - 14
15 - 21
22 - 58
MRDS (Mine)
Occurrence
Past Producer
Plant
Producer
Prospect
Unknown
0 0.75 1.5 Miles
Sources: USGS Mineral Resources Data System (2011), BLM Public Lands Survey System (2015), and BLM LR2000). Last Updated: 12/14/15

Paleontological Resources

Paleontological resources are fossilized remains of nonhuman organisms. Most paleontological sites include remnants of species that are now extinct. These fossilized remains of ancient plants and animals have the potential to yield important scientific data. Paleontological resources are closely tied to the geology of an area; they are contained within the geologic deposits or bedrock that underlies the soil layer.

Metamorphic gneissic rocks, volcanic rocks, or intrusive igneous granitic rocks of the late Mesozoic age are not likely to contain fossils. However, generally, fossils are typically preserved in sedimentary rocks, but could also be preserved in volcanic rocks and low-grade metamorphic rocks. Both types of rock are present in the study area, and the presence of fossils is likely (FERC 2012).

Water Resources

NPS *Management Policies 2006*, Section 4.6, Water Resource Managements that the NPS will perpetuate surface water and groundwater as integral components of park aquatic and terrestrial ecosystems.

Surface Water

The Colorado River is the major watercourse in the southwest, spans six states, forms a boundary between California and Arizona, and extends into Mexico. The study area is within the Chuckwalla watershed, which extends over portions of Riverside and Imperial counties and drains to the Colorado River. The central portions of the watershed include the Palen and Chuckwalla Valleys. The Colorado River Aqueduct begins near Parker Dam on the Colorado River and eventually emerges and begins flowing through 60 miles of siphons and open canals on the southern Mojave Desert and Eagle Mountains. The aqueduct forms the eastern border of the study area.

Located in an arid desert region of eastern Riverside County, the study area has an average annual precipitation of approximately four inches/year. Perennial streams are relatively non-existent due to low precipitation, high evaporation, and permeable soils, but some ephemeral streams do exist. In rare large rainfall events, substantial runoff occurs in dry washes or these ephemeral streams. Springs are present in the Eagle Mountains south of Pinto Basin, and the Eagle Creek and Bald Eagle Creek flow into the Lower Reservoir in the Eagle Mountain Mine (FERC 2012). Flood waters usually evaporate rather quickly due to the arid climate. *Map 4-6* depicts area watersheds and *Map 4-7* shows water resources including groundwater basins.

Groundwater. With the lack of surface waters, water in the desert is primarily obtained from underground aquifers. Water found in aquifers was trapped with sediments when they were deposited on the valley floor millions of year ago. This ancient water moves through fractures and joints in the bedrock and flows into springs, seeps, and wells. Water in the area is approximately 160 feet underground.

Groundwater basins are hydrogeologic units that contain one or more connected or interrelated aquifers. The study area is within the Pinto Valley Groundwater Basin and the Chuckwalla Valley Groundwater Basin and near the Palen Valley, Orocopia Valley, and Hayfield Basins. The Pinto Valley groundwater aquifer is hydraulically connected to the Chuckwalla groundwater aquifer and the Pinto Valley basin is upgradient from the Chuckwalla basin (Woodward 1998).

Chuckwalla Valley Groundwater Basin. The surface area of the Chuckwalla Valley groundwater basin is 605,000 acres (940 square miles) and underlies the Palen and Chuckwalla Valleys. The basin is bounded by consolidated rocks of the Chuckwalla, Little Chuckwalla, and Mule Mountains on the south, of the Eagle Mountains on the west, and of the Mule and McCoy Mountains on the east. Rocks of the

Coxcomb, Granite, Palen, and Little Maria Mountains bound the valley on the north and extend ridges into the valley (CDWR 2004).

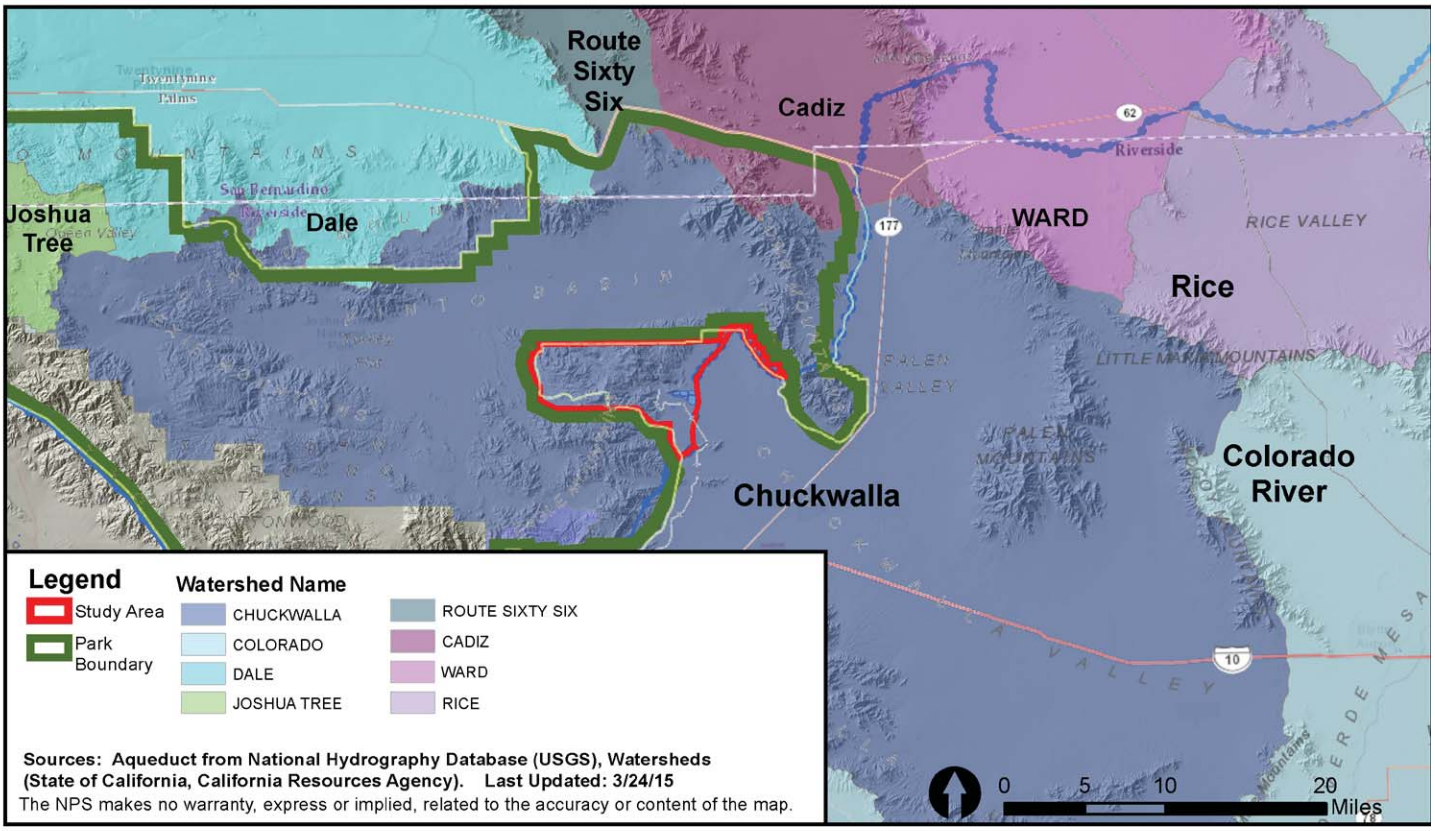
Groundwater flows southeastward from the basin's boundary with the Cadiz Valley and Pinto Valley basins through the narrows between the McCoy and Mule Mountains and into the adjacent Palo Verde Mesa Basin (Steinemann 1989; USGS 2013). The total storage capacity is estimated to be about 9,100,000 acre-feet, but the actual quantities may vary substantially based on actual well depth and quantities. The U.S. Geological Survey, Bureau of Land Management and other agencies are currently conducting studies to determine the actual water budget of the basin which would determine the amount of inflow and outflow of the groundwater basin. It is necessary to develop a water budget for any basin to estimate all sources of recharge and discharge.

Pinto Valley Groundwater Basin. The Pinto Valley Groundwater Basin encompasses 183,000 acres (286 square miles) and underlies the Pinto Valley. It is bounded by non-water bearing rocks of the Coxcomb Mountains on the east and northwest, of the Pinto Mountains on the north, of the Eagle Mountains on the south, and of the Hexie Mountains on the west. The valley is drained eastward by the Fried Liver, Smoketree, and Porcupine Washes. The total storage capacity is estimated at 230,000 acre feet, but the amount of groundwater currently stored there is unknown, and may vary substantially (DWR 2004). The abovementioned water budget study that is currently underway will determine the water budget for the Pinto Valley Basin aquifer as well.

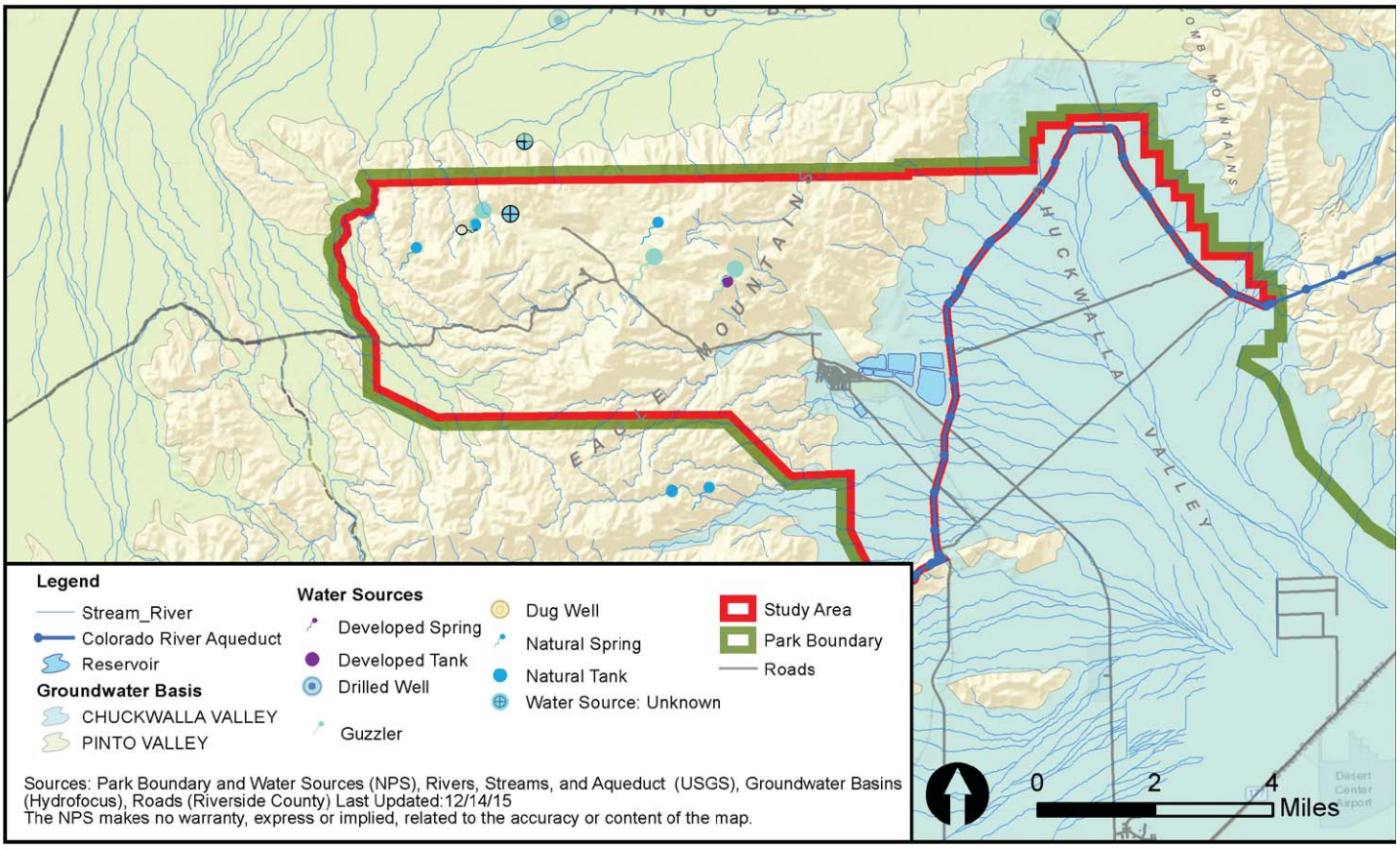
Groundwater Recharge. The *Desert Renewable Energy Conservation Plan* (BLM 2015a) provides some general concepts on how and when groundwater is recharged. It states that groundwater recharge usually comes from precipitation, but the degree of recharge is extremely variable due to area differences such as precipitation rates, potential evapotranspiration, bedrock permeability, soil thickness and vegetation characteristics. Because annual rainfall amounts in the desert are low and desert plants capture most of the rainwater, rainfall recharge rarely occurs on the valley floor except, perhaps, in very wet years (Stonestrom et al. 2007). In the mountain ranges between basins, rainfall is greater and much of the ground surface consists of exposed rock or thin soils. This prevents plants from capturing all of the rainfall before it either infiltrates into underlying bedrock fractures or runs off. Infiltration into the mountain bedrock fractures can gradually percolate downward and laterally into the alluvial basin deposits at lower elevations (BLM 2015a). ~~The issue of groundwater recharge is a complicated and controversial topic, and experts from state and federal agencies do not agree on the extent of recharge to groundwater aquifers. The debate over recharge for the Chuckwalla groundwater basin specifically will likely continue until more studies are complete and empirical data can be analyzed.~~

Water Quality. Groundwater quality in the proposed project area is typical for desert areas of southern California. The pH ranges from about 7.4 to 8.5; total dissolved solids levels at 425–950 milligrams per liter (mg/L) are generally above the California maximum containment level of 500 mg/L; and sulfate and chloride are generally both below the maximum containment level of 250 mg/L. Boron, fluoride, and arsenic are commonly higher than recommended concentrations for drinking water (Mathany et al. 2012, FERC 2012). Human caused 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 ground water. Surface waters are extremely limited in the study area; however, intense, short-duration rain events can lead to high sediment loaded runoff.

Map 4-6: Watersheds



Map 4-7: Water Resources



Vegetation

Although the desert appears to be harsh and unchanging, it is a dynamic landscape with rich biological and physical diversity, particularly in the transition zones of the Mojave and Colorado deserts. Overall, the California desert flora includes approximately 2,267 plant taxa (species, subspecies, and varieties) native to California. About 232 taxa (10%) in the California deserts are nonnative. The Mojave Desert in California has about 1,409 native taxa and there are approximately 709 native taxa in the Colorado Desert. The Mojave Desert has a higher level of plant diversity compared to the Colorado Desert due to differences in temperature, rainfall, topography and elevation, and gradient (BLM 2015a, Dilsaver 2015).

There are two major natural vegetation types in the study area: Lower bajada and fan Mojavean–Sonoran desert scrub and Sonoran–Coloradan semi-desert wash woodland/scrub. There are also bedrock cliff and outcrops and disturbed areas which are characterized by little or no vegetation, and a small amount of mid-elevation mixed desert scrub along the northern study boundary. Warm desert pavement is present in the eastern part of the study area (BLM 2015a). There could be wetlands in areas near washes, but their presence is unlikely. See *Map 4-8: Vegetation* for a map of vegetation types in the project area (BLM 2015a).

Desert scrub occurs on lower canyon slopes, bajadas, sandy flats, and access roads. The dominant species include creosote (*Larrea tridentata*), burro bush (*Ambrosia dumosa*), and brittlebush (*Encelia farinosa*). Other species include cheesebush (*Ambrosia salsola*), white rhatany (*Krameria grayi*) and a variety of cacti such as silver cholla (*Cylindropuntia echinocarpa*), pencil cholla (*Cylindropuntia ramosissima*), beavertail cactus (*Opuntia basilaris*), and hedgehog cactus (*Echinocereus engelmannii*).

Desert dry wash woodlands/scrub occur in well-defined washes primarily consisting of desert ironwood (*Olneya tesota*), smoke tree (*Dalea spinose*), palo verde (*Parkinsonia aculeate*), mesquite (Prosopis pubescens), desert willow (*Chilopsis linearis*), and/or cat's claw (*Acacia-greggii*). Other species that are commonly found along wash corridors in the study area include desert brickellbush (*Brickellia arguta*), desert lavender (Hyptis emoryi), cheesebush, chuparosa (*Justicia californica*), Anderson wolfberry (*Lycium andersonii*), desert almond (Prunus fasciculate) and white-stemmed milkweed (*Asclepias albicans*). Subsurface moisture in desert washes supports stands of microphyll woodlands (*See Map 4-9: Microphyll Woodlands*) with old-growth stands of blue paloverde and ironwood. Desert pavements are closely packed rock surface substrates created through wind and water erosion that generally have very low permeability and moisture available to plants (Miller et al. 2009).

The extent of invasive species is unknown. Invasive plant species could include red brome (*Bromus madritensis*), cheatgrass (*Bromus tectorum*), Mediterranean split grass (*Schismus* spp.), Tournefort's Sahara mustard (*Brassica tournefortii*) or red-stem filaree (*Erodium cicutarium*) (NPS 2014).

Special Status Plants

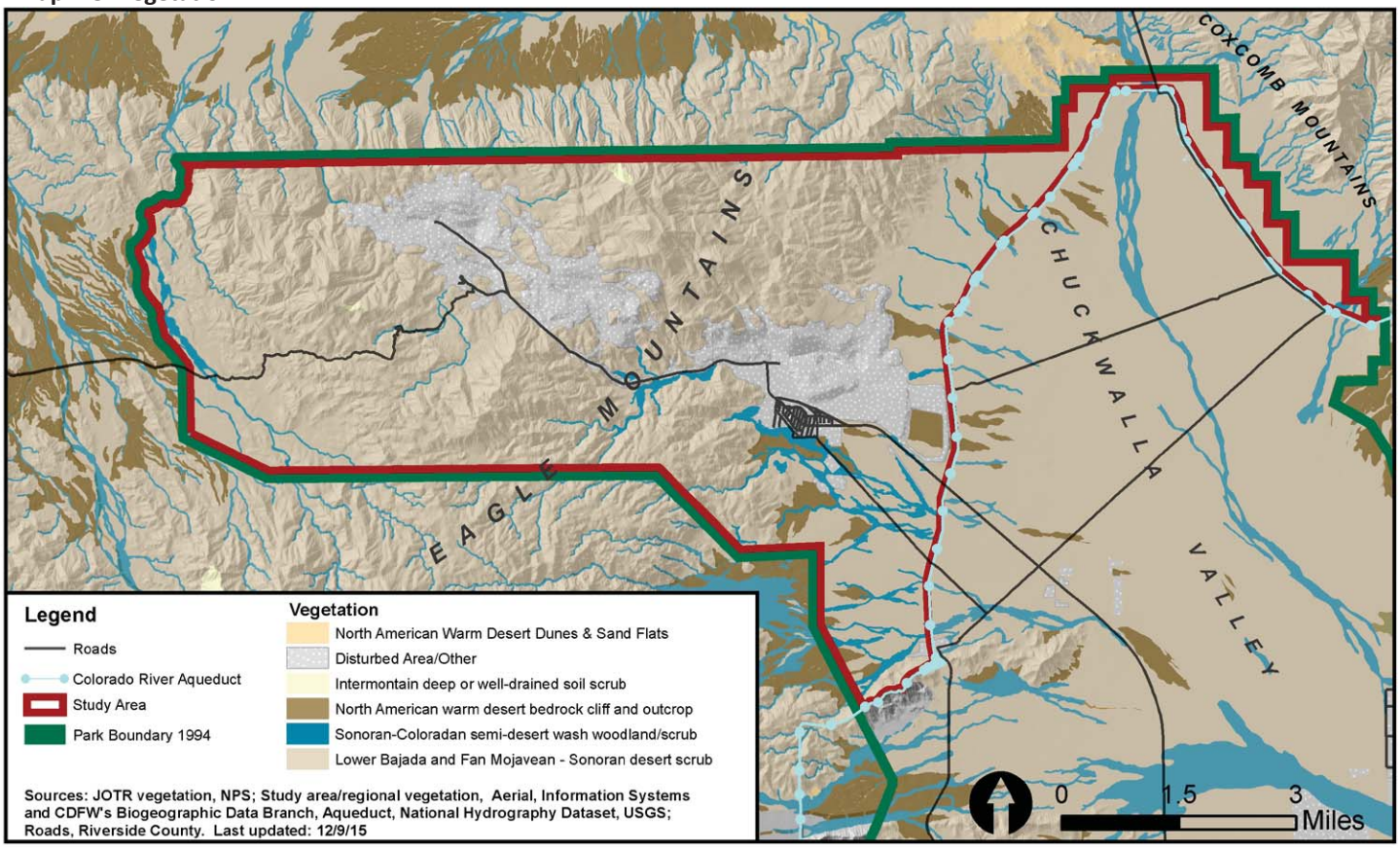
There are three federally listed species that could potentially exist in the project area, although only one of them, the Coachella Valley milk-vetch (*Astragalus lentiginosus var. coachellae*) has a high likelihood of occurring in the study area due to the presence of sand ramps at the base of the range and the proximity of known locations (<6 miles in Chuckwalla Valley). Triple-ribbed milk-vetch (*Astragalus tricarinatus*) and Parish's daisy (*Erigeron parishii*) may also be present.

There are over 20 rare and/or sensitive plants that are likely to occur within the study area, with an additional species that could potentially

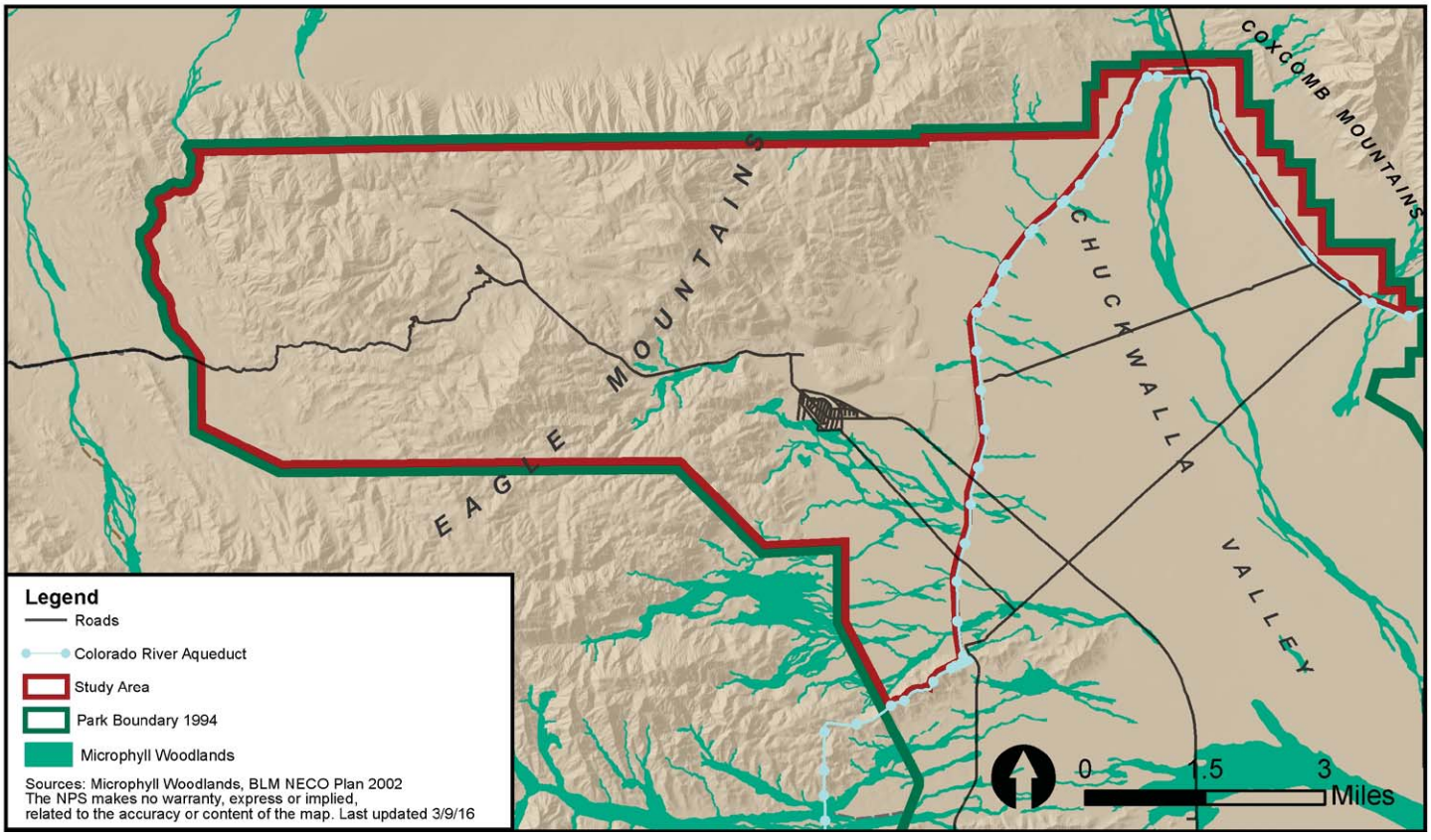
occur if suitable habitat is present. Several rare taxa are known to occur within a few miles of study area and therefore are likely to be present. They include California ditaxis (*Ditaxis serrata var. californica*), Harwood's milk-vetch (*Astragalus insularis var. harwoodii*), and Los Animas colubrine (*Colubrina californica*). Parish's club cholla (*Corynopuntia parishiorum*) and Alverson's foxtail cactus (Coryphantha alversonii) are also present. The Eagle Mountains are also host to a rare vegetation type, Hall's Tetracoccus (*Tetracoccus hallii*). These stands generally occur on colluvial slopes with *Yucca schidigera, Simmondsia chinensis, Nolina bigelovii,* and *Ephedra nevadenis*, and are likely to occur within the study area. In addition, there are isolated stands of Teddy-bear Cholla (*Cylindropuntia bigelovii*) found on the southern slopes of the Eagle Mountains very near the study area. These stands are rare within the region. Three species newly described to science are known to occur in the Eagle Mountains. They include *Eschscholzia papastillii, E. androuxii*, and *Cylindropuntia chuckwallensis*; the latter two are considered rare (La Doux and Babich 2013). See *Appendix D: Sensitive Species Lists* for a full list of potentially present special status species. *Map 4-10: Special Status Plant Species* depicts sensitive plant species that have been documented in the study area as identified in the California Natural Diversity Database.

Old-growth microphyll woodlands present in the study area provide the highest amount of aboveground biomass of any plant community in the Sonoran Desert outside of the Colorado River riparian zone and constitute a reservoir for carbon sequestration. *Map 4-9: Microphyll Woodlands* depicts the location of these woodlands. The complex physical structure and cover of the woodlands provide essential habitat for neotropical migratory birds crossing the California deserts to reach nesting sites in the Pacific Coast states and Alaska (BLM 2015a).

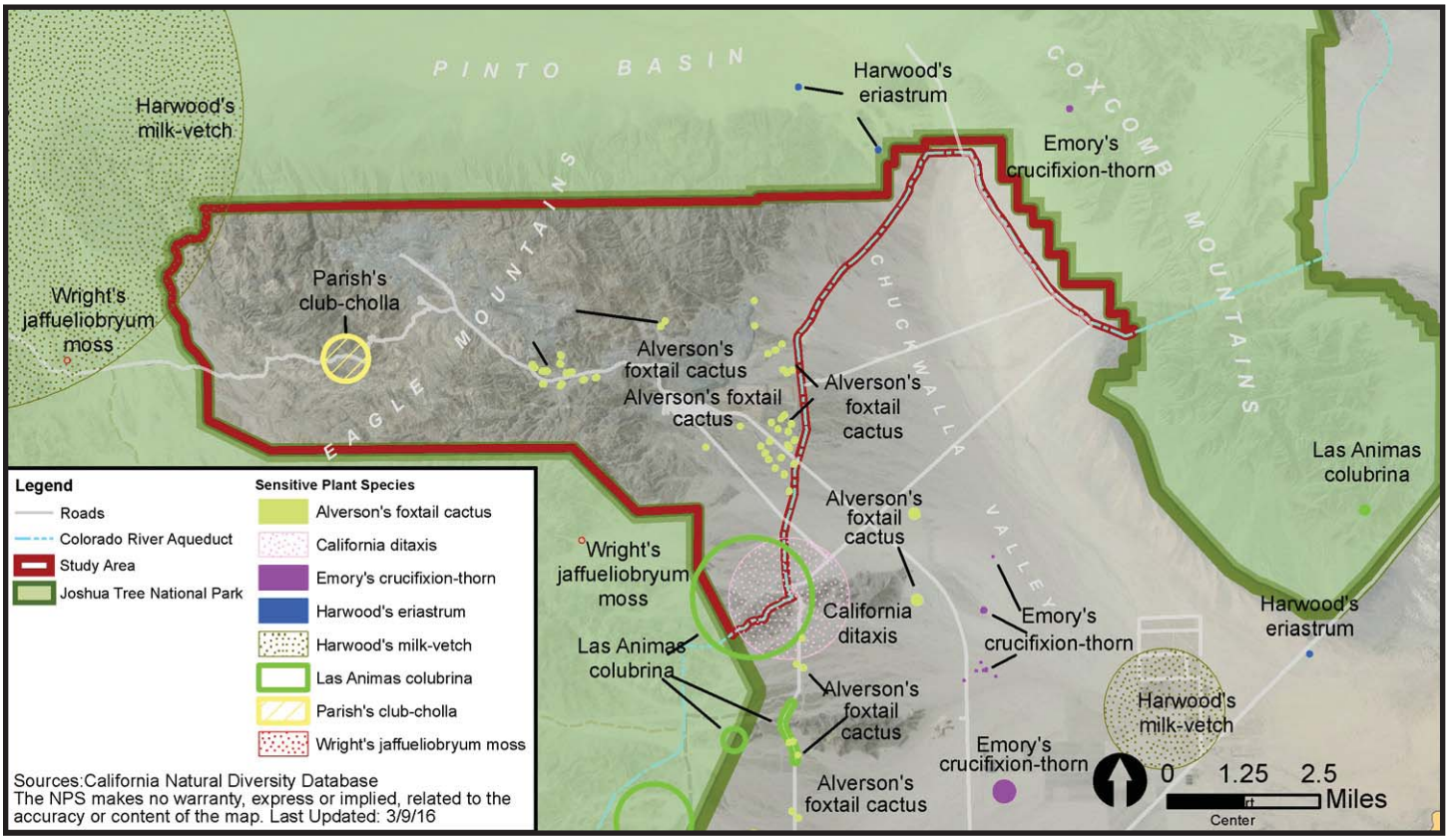
Map 4-8: Vegetation



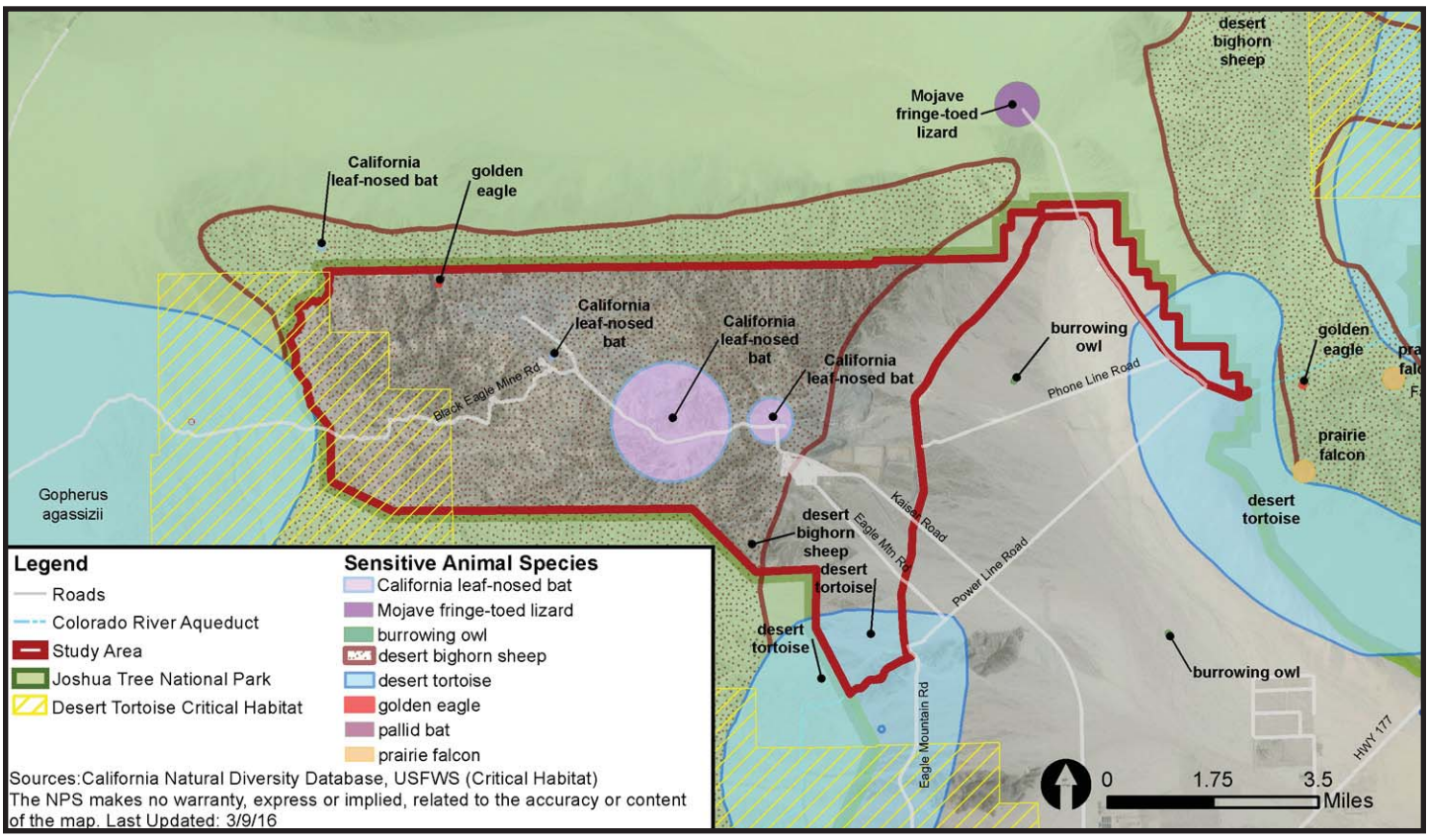
Map 4-9: Microphyll Woodlands



Map 4-10: Special Status Plant Species



Map 4-11: Special Status Animal Species



Wildlife

Desert scrub vegetation that covers the majority of the study area supports many species of birds, mammals, and reptile. Desert washes provide nesting habitat for a variety of bird species. Rocky outcrops provide habitat for nesting birds, reptiles, bats, and desert bighorn sheep. Common invertebrates found throughout all habitats include spiders, beetles, true bugs, wasps, and ants.

A wide variety of reptile species occupy desert scrub and woodlands. The desert tortoise (*Gopherus agassizii*) occurs throughout most of the undisturbed bajada type lands found in the eastern and western ends of the project area. Other reptile species likely include the side-blotched lizard (*Uta stansburiana*), desert iguana (*Dipsosaurus dorsalis*), zebra tailed lizard (*Callisaurus draconoides*), desert horned lizard (*Phrynosoma platyrhinos*), desert spiny lizard (*Sceloporus magister*), long-nosed leopard lizard (*Gambelia wislizenii*), western whiptail (*Aspidoscelis tigris*), gopher snake (*Pituophis cantifer*), coachwhip (*Masticophis flagellum*), western groundsnake (*Sonora emiannulata*), western shovelnose snake (*Chionactis occipitalis*), and western diamond-backed rattlesnake ((*Crotalus atrox*). Amphibians are less common due to general lack of water, but the red-spotted toad (*Anaxyrus punctatus*) could be potentially present in limited areas of standing water within the study area (FERC 2012, BLM 2015a).

Large numbers and varieties of birds fly through or nest in the area, which is adjacent to the Pacific Flyway, one of the four major North American migration flyways. Many of the bird species occurring in the study area are migrants that use the flyway in spring and fall. More than 250 species of birds have been recorded in Joshua Tree National Park and it's likely that many of these species also occur in the vicinity of the proposed project. Bird species occurring in desert washes include Gila woodpecker (*Melanerpes uropygialis*), common nighthawk (*Chordeiles minor*), ash-throated flycatcher (*Myiarchus cinerascens*), LeConte's thrasher (*Toxostoma lecontei*), orange-crowned warbler (*Oreothlypis celata*), Wilson's warbler (*Cardellina pusilla*), mourning dove (*Zenaida macroura*), Gambel's quail (*Callipepla gambelii*), common nighthawk (*Chordeiles minor*), verdin (*Auriparus flaviceps*), black-throated sparrow (*Amphispiza bilineata*), savannah sparrow (*Passerculus sandwichensis*), and cactus wren (*Campylorhynchus brunneicapillus*). The white-throated swift (*Aeronautes saxatalis*, rock wren *(Salpinctes obsoletus),* and canyon wren (*Catherpes mexicanus*) may use rock outcrops, talus slopes and cliffs in the area. Raptors that nest or forage in the desert include golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis),* northern harrier (*Circus cyaneus),* Swainson's hawk (*Buteo swainson),* red-tailed hawk (*Buteo jamaicensis*), prairie falcon (*Falco mexicanus*), American kestrel (*Falco sparverius*), merlin (*F. columbarius*), burrowing owl (*Athene cunicularia*), short-eared owl (*Asio flammeus*), and great horned owl (*Bubo virginianus*). Secluded rock outcrops and ledges provide nesting habitat for many of these birds of prey (FERC 2012, BLM 2015a).

Most of the mammals in the study area are most likely represented by rodents such as: mule deer (Odocoileus hemionus), white-tailed antelope ground squirrel (*Ammospermophilus leucurus*), black-tail jackrabbit (*Lepus californicus*), Merriam's kangaroo rat (*Dipodomys merriami*), desert kangaroo rat *(Dipodomys deserti*), white-throated woodrat (*Neotoma albigula*), little pocket mouse (*Perognathus ongimembris*), cactus mouse *(Peromyscus eremicus*), and long-tailed pocket mouse (*Chaetodipus formosus*). Carnivores create homes in desert scrub communities, although in fewer numbers. Desert kit fox (*Vulpes macrotis arsipus*), gray fox ((*Urocyon cinereoargenteus californicus*), bobcat (*Lynx rufus*), coyote (*Canis latrans*) are likely to occur (BLM 2015a). Desert bighorn sheep (*Ovis canadensis nelsoni*) reside and move through the steep and rugged mountains. Several bat species

use rock outcrops and crevices for day roosting sites. The disturbed Eagle Mountain Mine and Townsite created habitats for wildlife species that do not typically occur in undisturbed desert areas. These species include the common raven (*Corvus corax*), house sparrow (*Passer domesticus*), and European starling *Sturnus vulgaris*) (FERC 2012). Several bat species may also roost in the mine structures.

Special Status Wildlife

Numerous threatened and sensitive animal species are known and suspected to occur in the study area. The NPS has not completed natural resources surveys specifically for this boundary study. However, species information is available from other area planning projects and Joshua Tree National Park. The park has extensive data on the resources present on adjacent desert lands within the park and it is highly likely that many of these wildlife species also occur within the boundary study area.

Special status species include plants and wildlife that have been designated or proposed as rare, sensitive, threatened, or endangered by U.S. Fish and Wildlife Service (USFWS) or the California Fish and Wildlife Service (CFWS) and protected under either the Endangered Species Act (ESA) or California Endangered Species Act (CESA). A list of these species can be found in *Appendix E: Special Status Species Lists and Map 4-8 Special Status Animals*.

Populations of several species known to occur within the study area are in decline and are particularly vulnerable due to loss of habitat, compromised migration corridors, limited range, or disease. The study contains important habitat for the desert tortoise, desert bighorn sheep and many other special-status animals. Old-growth microphyll woodlands, described in the previous section, *Vegetation*, provide essential habitat for neo-tropical migratory birds crossing the California deserts to reach nesting sites in the Pacific Coast states and Alaska (BLM 2015a). Vulnerable species are discussed below.

Desert Tortoise

California's state reptile, the federally and state listed, threatened desert tortoise (*Gopherus agassizii*), lives in the Mojave, Sonoran, and Colorado deserts in a variety of habitats at elevations ranging from below sea level to 7,300 feet. These slow-moving herbivores spend 95% of their lives underground, in burrows dug in firm desert soils. Desert tortoises are well adapted to the harsh desert environment; they rest during winter and summer to regulate body temperature and can survive for more than a year without access to water. In late winter or early spring, they emerge from their winter burrows. During the hot summer, they retreat back to their burrows but often emerge after summer rain storms to drink. In southern California deserts, desert tortoises most commonly occur in creosote bush scrub on gently sloping terrain with sandy-gravel soils and lush vegetation such as bunch grasses, cacti, and trees. Although desert tortoises don't migrate per se, continuous large areas of occupied habitat link populations together genetically, allowing for the movement of genes and ensures genetic diversity (Edwards 2004).

Known and modelled habitat for the desert tortoise exists within and surrounding the study area, especially on the eastern and western ends. There is important habitat for the desert tortoise along the eastern end of the project area and is pinched between the project area and the Desert Sunlight Solar Farm (Nussear 2009). This area is one of the only connections of desert tortoise habitats found within Joshua Tree National Park (Pinto Basin) and the Upper Chuckwalla Valley, Upper Pinto Wash, Pinto Mountain and Chemehuevi Critical Habitat Units and Desert Wildlife Management Areas. The protection and restoration of this corridor is necessary to the conservation of the desert tortoise. *Map 4-12: Desert Tortoise Habitat - Study Area* shows a narrow corridor of occupancy between the mine area and low potential habitat to the southeast. This area is of great interest in the regional conservation of desert tortoise as it is the main

link between highly protected habitats in Joshua Tree National Park and habitats south of I-10. This area was described in detail by the biological opinion written by the U.S. Fish and Wildlife Service for the Desert Sunlight Solar Farm Project (Desert Sunlight) depicted in *Map 4-12: Desert Tortoise Habitat - Study Area*.

Surveys completed for the Desert Sunlight project found high densities of desert tortoises in the western portion nearest to the Eagle Mountain site. The study area also contains the important, regional north/south habitat connection that links the desert tortoise habitat corridor in Joshua Tree National Park to valuable habitat south in the Orocopia and Chuckwalla Mountains. This habitat corridor is one of the last remaining in the area and is vital to the population's genetic diversity as well as to the ability of desert tortoises to move between large blocks of suitable habitat.

Major threats to desert tortoises and their habitats include human development and urbanization; unauthorized off-highway vehicle use and vehicular activity; illegal collecting; ravens; mortality on paved roads; livestock grazing; feral burros; drought; nonnative plants and changes to natural fire regimes; environmental contaminants; and climate change (USFWS 2011a and 2011b).

Desert Bighorn Sheep

Desert bighorn sheep (*Ovis canadensis nelsoni*) are an iconic species of special management concern for the National Park Service (NPS) and Bureau of Land Management (BLM). These impressive, stocky sheep have large curled horns that continue to grow throughout their lives. Bighorn are well adapted to a desert life; they can go for extended periods of time without drinking water and are agile and expert climbers of steep, rocky desert mountain terrain. They live in a large number of desert mountain ranges and in canyons and rocky areas. These gregarious sheep form herds and rams travel between the herds during breeding season. In summer, they move to better grazing sites and cooler conditions in the mountains. Throughout the rest of the year, herds are dispersed and move between water sources.

Research provides evidence of desert bighorn sheep movement within the study area. There are two distinct herds that live in and move through the study area: the Eagle Mountain herd and the Coxcomb Mountain herd. Genetic testing has identified the corridor from the Eagle Mountains across the study area to the Coxcomb Mountains to be extremely important for maintaining connectivity among desert bighorn herds within Joshua Tree National Park, the bighorn population in the Coxcomb Mountains is considered most important to maintaining population connectivity, while those in the Eagle Mountains are considered second most important. Among all existing bighorn herds in the greater Mojave Desert (37 populations), both of these populations rank in the top third in terms of importance to bighorn meta-population connectivity (Epps et. al. 2005).

Desert bighorn sheep have been known to use both undisturbed land as well as areas of previous human activity associated with the mining operations. Studies have shown that sheep move through the private land that is proposed for the Eagle Mountain Pumped Storage Hydroelectric Project (Divine and Douglas 1996, Divine 1998, Epps et al. 2007, Epps et al. 2010). A 2010 survey of wildlife in and around the study area conducted to inform the planning for the proposed Eagle Mountain Pumped Storage Hydroelectric Project identified 51 desert bighorn sheep were seen in six different locations (Wildlife Research Institute 2010). Three of these individuals were in the study area. ~~During a biological survey conducted for the Eagle Crest Energy Pumped Storage project, 51 desert bighorn sheep were seen in six different locations~~ (Wildlife Research Institute 2010). The corridor from the Eagle Mountains to the Coxcomb Mountains, through the study area, is extremely important for

maintaining connectivity among desert bighorn herds and maintaining genetic diversity of the population (Epps et. al. 2005). See *Map 4-13: Bighorn Sheep Habitat – Study Area*.

Many factors contribute to low population numbers and the increased sensitivity of the species. These risks include increased habitat fragmentation, inbreeding, changes in vegetation, predation, human development, disease from livestock, and diminishing water sources (BLM 2015a).

Burrowing Owl

The burrowing owl is a bird species of special concern in California that may be present in the study area. These small, long-legged owls occur across most of the Mojave and Colorado deserts and have been described the species as quite scarce from Inyo County south through the eastern Mojave Desert. Burrowing owls live in colonies and nest in burrows dug by other animals in open, arid, treeless space with low vegetation. They may dig their own nest or utilize the abandoned burrows of ground squirrels, foxes or pocket gophers or use human-made structures, such as culverts or debris piles. Owls are active during the day, but revert to their burrows in the mid-day heat. They generally remain close to their burrows during their lifespan but can forage up to a mile away. Direct causes of mortality in burrowing owls include predation by hawks, owls, badgers, coyotes foxes, domestic dogs and cats, and others; vehicular collisions; wind turbines; barbed wire fences; shooting; road maintenance; tilling, pesticide application and other agricultural practices; and disease and parasites (Gervais et al. 2008). Eradication programs that have decimated rodent populations have, in turn, decreased the abundance of key prey available for burrowing owls (BLM 2015a).

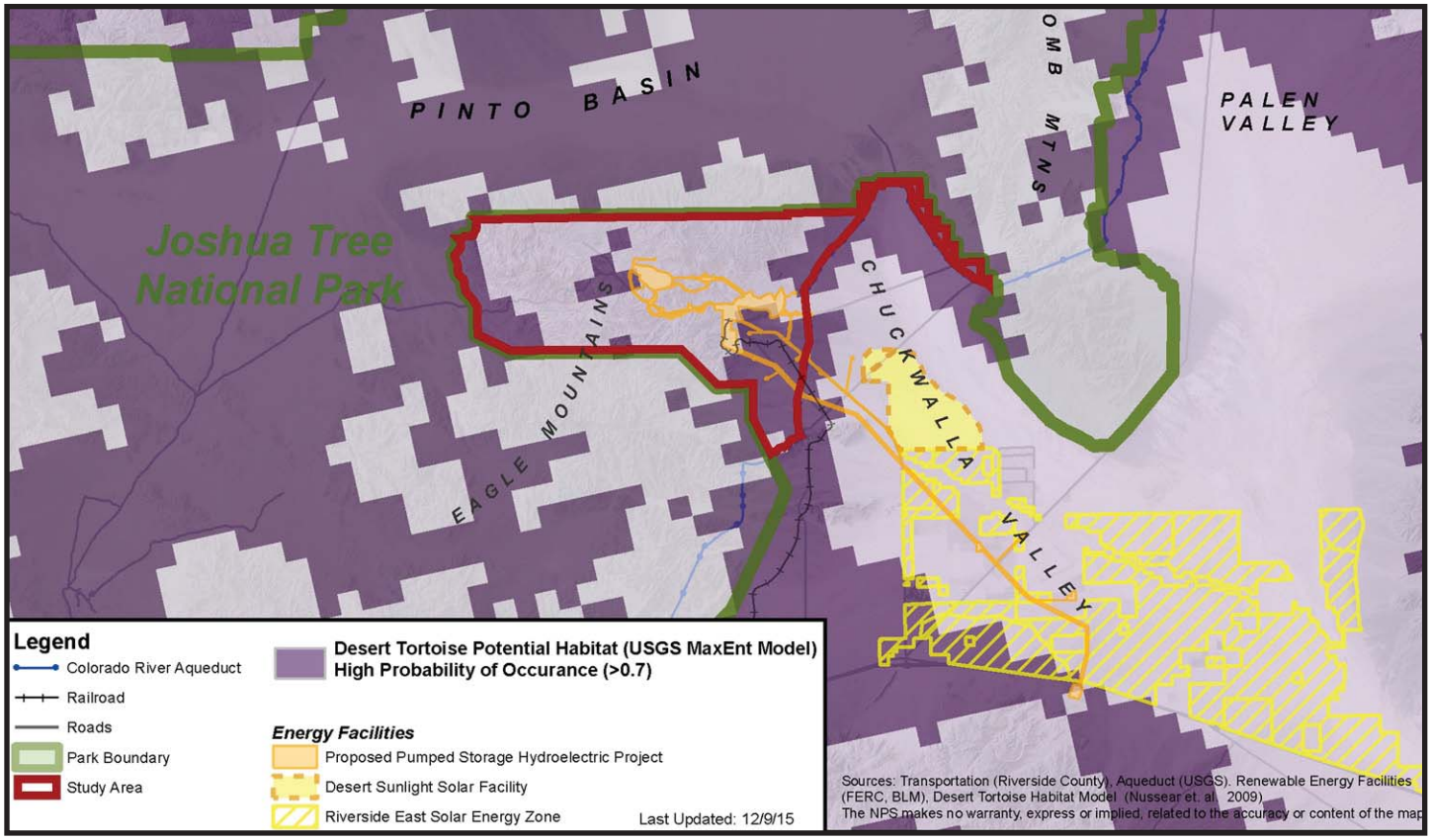
Golden Eagle and Other Raptors

Several special-status raptor species, including golden eagle and prairie falcon occur in the study area. This species was once a common resident throughout the open areas of California but numbers are now reduced near developed areas. Golden eagles nest on open cliff areas, and mountain cliff sites are important to maintaining robust golden eagle populations. Prairie falcons nest on vertical cliff faces. Foraging habitat for both species includes wide open areas where small and mid-sized animals are present for food. Nesting season for golden eagles in the southern part of their range (including the project area) can begin as early as January and can last through August. Nesting season for the prairie falcon lasts from mid-February through mid-September with peak season from April to early August. Other raptor species potentially present 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 2012).

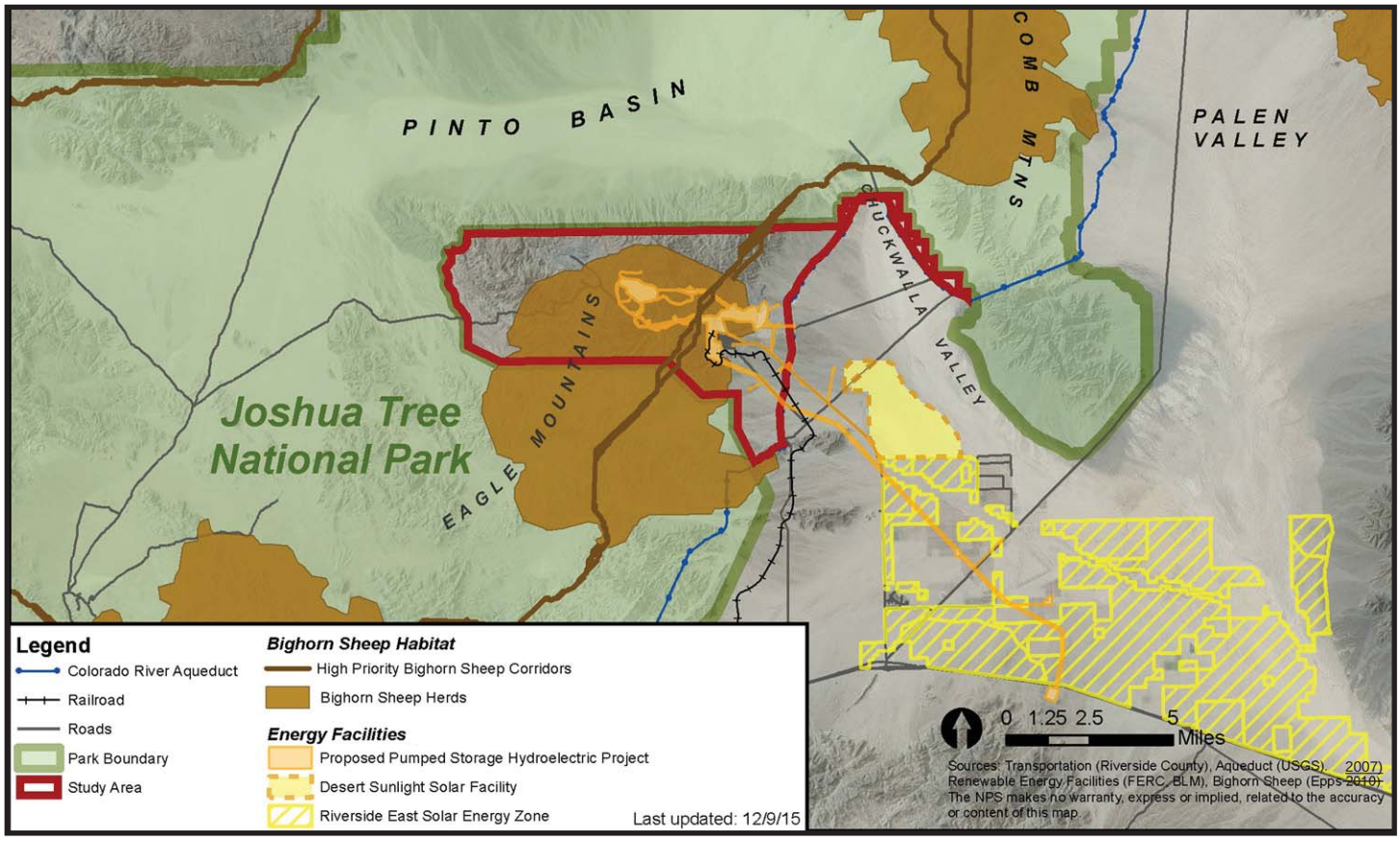
Golden eagle surveys were conducted for the Eagle Mountain Pumped Storage Hydroelectric Project in a 10 mile vicinity of the proposed project boundary. Thirteen mountain ranges were surveyed by biologists via helicopter and a total of fourteen territories of golden eagles were found containing a combined 34 nests. In addition to golden eagles, 12 other species were seen (i.e., barn owls, desert bighorn sheep, Cooper's hawks, common ravens, great horned owls, a long-eared owl, an osprey, prairie falcons, red-tailed hawks, Swainson's hawks, and turkey vultures) for a total of 340 wildlife documentations (FERC 2012). The chain of wilderness areas linking the Colorado River with the *Desert Renewable Energy Conservation Plan Land Use Plan Amendment* proposed National Conservation Lands provide habitat continuity for eagle foraging (BLM 2015a, Wildlife Institute, Inc. 2011).

These species are protected under the Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Act of 1940, but their populations are still at risk. Birds suffer losses of native foraging and nesting grounds to development, are poisoned by pesticides or lead, or have fatal encounter with man-made structures (BLM 2015a).

Map 4-12: Desert Tortoise Habitat - Study Area



Map 4-13: Bighorn Sheep Habitat - Study Area



Bats

The Lower Colorado River corridor has the highest biological diversity of bat species in the western United States and numerous sensitive bat species are known to occur in the study area. These species all prefer roosting areas associated with caves, cliffs, or rocky outcrop habitat. Foraging habitat for these species exists in desert scrub and desert riparian areas. Bats were found to roost in adits at the Eagle Mountain Mine and were observed near the mill site at the mine. Joshua Tree National Park has a history of installing bat-friendly gates that provide habitat to bats while preventing human access. The bat species potentially present in the study are include: Yuma myotis (Myotis yumanensis), California myotis (*Myotis californicus*), long-legged myotis (*Myotis volans*), western pipistrelle (Pipistrellus hesperus), spotted bat (Euderma maculatum), pocketed free-tailed bat (Nyctinomops femorosaccus), fringed myotis (*Myotis thysanodes*), western small-footed myotis (*Myotis ciliolabrum*), pallid bat (*Antrozous pallidus)*, and California leaf-nosed bat (*Macrotus californicus*) (BLM 2015a, FERC 2012).

Cultural Resources

The study area contains a diverse set of cultural properties that include prehistoric and historic archeological resources, historic structures, cultural landscapes, ethnographic resources and potential traditional cultural properties and sacred sites. Cultural resources within and near the proposed withdrawal area were identified from Joshua Tree National Park resource information, Bureau of Land Management (BLM) studies and previous planning documents for the area.

Prehistoric Resources

Prehistoric cultural resources are associated with human occupation prior to European contact in the 18th century. These resources may include sites, structures, rock art, trails, or other artifacts of Native American life. The first indigenous Americans arrived in California approximately 13,000-15,000 years ago (late Pleistocene era). Archaeological evidence in and around the region of Joshua Tree National Park confirms that people lived and hunted in a cooler and more moist grassland environment between 10,000 and 4,000 years ago (Dilsaver 2015). These descendants of Pleistocene and Archaic people, and those who followed after them (such as the Pinto Culture), learned to adapt and thrive in harsh environment by making careful use of local plants and living in oases and along water courses (NPS 1996, ASM Affiliates 2011a, BLM 2011). These people hunted both large and small game, gathered seasonal wild plants, and likely manipulated land to their benefit by practicing various forms of gardening. They also likely used fire to revitalize the land and prevent catastrophic fires (NPS 1996, BLM 2015a). They generally lived in small, mobile bands with a highly developed network of trails and connections with other groups. There was considerable cross cultural connection despite occasional aggression and warfare. Segments of two east-west trails are still present in vicinity of the study area. The trails were major transportation corridors used for hunting, trading and ceremonial purposes. The routes are marked by votive stone piles (cairns) and ceramic scatters (pot drops) (Johnson and Johnson 1957, ASM Affiliates 2011a). The trails could be eligible for the National Register of Historic Places (NRHP) and considered a Traditional Cultural Property (TCP).

Prehistoric archeological resources reflect the lifestyle of mobile hunter-gatherers and include shell beads, remnants of stone tool making, hammers, mortars, pestles, millstones, handstones, scrapers, stone pendants, pots, seasonal camps, rock-shelters, milling sites, lithic and ceramic scatters, and rock art sites (ASM Affiliates 2009a). Surveys conducted for past projects in Eagle Mountain area documented over 130 small, isolated finds (FERC 2012). Resources include prehistoric lithics, milling stones, ceramics, pot drops, cairns, rock rings, cleared circles, bedrock milling and trash

scatters. Some of these finds have the potential to be eligible for listing in the National Register of Historic Places.

Ethnographic Resources

Ethnographic resources represent the heritage of a particular ethnic or cultural group and may include traditional resource collecting areas, ceremonial sites, landscape features, cemeteries, shrines, etc. Because of native people's long history within the study area, there is potential for the land to contain ethnographic landscapes, objects, plants and animals, or sites and structures. There is potential for sacred sites to occur near current or past eagle nesting sites. For Native American tribes, eagles are spiritually, culturally, and ecologically significant. Eagle Mountain was aptly named due to the presence of golden eagles, and these sites could exist throughout the study area. A survey completed for the landfill project included ethnographic interviews and field visits with one Cahuilla, one Chemehuevi and two Mohave consultants, as well as phone interviews with other groups and an ethnohistoric literature review. Both the Chemehuevi and Cahuilla elders recounted knowledge recounted knowledge of hunting activities in the Eagle Mountains but no groups attributed sacred sites or special spiritual or cultural significance to the area (ASM Affiliates 2009a).

Today, within Joshua Tree National Park, tribes wish to gather traditional plants for food, medicine and religious practices, meditate, pray in a sacred area, or study the artifacts in the park collection to confirm more of their heritage and pass it onto younger generations (NPS 1996).

Joshua Tree National Park consults with numerous federally recognized tribes that have associations with park. They maintain a strong interest in the region as it contains sites and resources that are traditionally significant to their living traditions and cultures (NPS 1996). They include: the Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, Cabazon Band of Cahuilla Mission Indians, Cahuilla Band of Mission Indians, Chemehuevi Indian Tribe, Colorado River Indian Tribe, Fort Mojave Indian Tribe, Los Coyotes Band of Mission Indians, Morongo Band of Mission Indians, Ramona Band of Cahuilla Indians, San Manuel Band of Serrano Mission Indians, Santa Rosa Band of Cahuilla Indians, Soboba Band of Luiseño Indians, Torres Martinez Desert Cahuilla Indians and the Twenty-nine Palms Band of Mission Indians. Other groups also have interests in the study area. In particular, at scoping, the representatives from the Azteca/Mexica culture expressed interest and concern about access to and preservation of sacred sites.

Indian Trust Resources

Trust resources are those natural resources reserved by or for Indian tribes through treaties, statutes, judicial decisions, and executive orders, which are protected by a fiduciary obligation on the part of the United States. None are expected to exist within the study area.

Historic Period

The historic period occurred after initial contact between Native American groups and European explorers. Europeans landed in California in the 18th century, and by the mid 1700's, the Spanish had set up missions along the coast and dispatched priests to explore the area and connect Alta California with Sonora, Mexico. By the 1700's, three Indian groups lived in the vicinity of the study area: the Cahuilla, the Chemehuevi and Serrano. These native peoples hunted, gathered, and farmed the area, and the Eagle Mountains may have been traditional locations for the tribes to hunt sheep and deer. They traveled seasonally and some tribes maintained contact with others in the region. A fourth group, the Mojave, did not live in the area, but regularly traveled across it from their homelands along the Colorado River. Among the earliest "roads" passing through the Coachella Valley was an Indian trade route known as the Cocomaricopa Trail (it was later

"re-discovered" and renamed the Bradshaw Trail) (FERC 2012, Recon 1991).

A wide range of cultural resources could be present from this time period including habitation sites, temporary camps, rock shelters, caves, milling stations, lithic scatters, chipping circles, lithic quarries, ceramic scatters, cemeteries, cremation features, rock alignments, geoglyphs, petroglyphs, pictographs, trails, roasting pits, cairns, isolated artifacts, mines, homesteads, historic-era campsites, and historic-era debris concentrations (BLM 2015a).

The North Chuckwalla Mountains Petroglyph District is located east of the study area and is listed in the National Register of Historic Places (NRHP). It contains thirty-six cultural loci, including petroglyph concentrations, rock rings, cleared circles, trail fragments, flaked stone lithic deposits, bedrock milling features, deposited ceramics, and a rock cairn with an associated wooden cross. The NRHP-listed North Chuckwalla Mountains Quarry Archaeological District is also east of the study area (BLM 2011).

For Euro-Americans, the two initial means of making a living in California's deserts were ranching and mining. The first Americans to use the Joshua Tree area consistently were cattlemen during the 1870s. Grazing continued beyond the designation of Joshua Tree National Monument in 1936 and did not officially end until the conclusion of World War II. The impact of the grazing business on the future park primarily affected the water resources. Ranchers and settlers built small dams to amass water in low places among the many rocks and boulders. People also came to the desert for land and recreation. Available land always generated enthusiasm for a new region, even one as forbidding as the deserts of California (Dilsaver 2015). In 1872, the Homestead Act encouraged people to move to the deserts east of San Bernardino and Riverside counties. A trail known as Frink's Route or Brown's wagon road was developed in search of a railroad route. In 1862, the Bradshaw Trail became a more popular route through the area (BLM 2011). Two petroglyphs were found to be associated with the Frink's and Bradshaw Trail; they have not been evaluated for eligibility for listing in the NRHP (BLM 2011). In 1873, the Southern Pacific railroad began constructing a line through the Colorado Desert. By May 1877, the railroad connected Los Angeles with the west bank of the Colorado River opposite Yuma, Arizona (Dilsaver 2015).

The discovery of gold in the Sierra Nevada foothills in 1848 had a tremendous impact on the economy for several decades. Although it came much later to the deserts than other parts of California, mining dominated the region prior to World War I. Access to mines from major settlements and suppliers of industrial machinery and tools required transportation over land that only a few Native American trails crossed. Miners had to scrape out wagon roads to and from every mine and mill to connect with the railroads and rudimentary highways that passed by to the north and southwest. Extensive mineral exploration in the study area began in the 1860's when the miners looked for new areas to mine. Gold and silver attracted miners initially, but interest grew in other minerals such as lead, zinc, and iron. In the early California gold camps, miners invented a legal system whereby an individual or group could lay claim to an area for mining purposes. The land technically was federal property, but a miner could hold his claim as long as he (or she) continued working it. Mining districts formed to hammer out the rules and enforce them. This home-grown system became law with the federal Mining Acts of 1866 and 1872 (Dilsaver 2015).

The greatest period of mining occurred between the 1870s and 1890s and was facilitated by the Southern Pacific Railroad. In 1881–1882, four men founded the Eagle Mountain Mining District to mine for iron, gold, and silver and staked various mining claims in the area, one of which was called Iron Chief Mine. The Iron

Chief Mine produced moderate quantities of gold-bearing ore from 1892-1902, and water for the operations was supplied by an 18-mile long pipeline originating at Cottonwood Spring (Dilsaver 2015). In 1909, the Southern Pacific Railroad purchased the mining claims of the Iron Chief Mine including 187 patented claims. Operations at the Iron Chief Mine ceased sometime around 1908 and lay dormant until the 1940's when sold to Kaiser Steel Corporation (Dilsaver 2015, ASM Affiliates 2011a). Remnants of the mining period could include mine claim cairns, mining equipment or associated trash (ASK Affiliates 2009a).

Homesteading continued during the early 20th century. In 1921, Stephen ("Desert Steve") Ragsdale and his wife purchased a 160 acre homestead patent from another family, and then eventually patented up to 700 acres on either side of the newly constructed U.S. Route 60 (now Interstate 10). In 1925, they founded the town of Desert Center. There are some ruins remaining from the original homestead (FERC 2012) in area; their eligibility to the NRHP has not been determined.

The Colorado River Aqueduct was constructed between 1931 and 1941 by the Metropolitan Water District of Southern California. It was one of the major Colorado River water delivery public works projects. It was constructed to provide the growing Los Angeles area with more drinking water. The first water deliveries began in January 1939 (Hundley 1992). This feature has been recommended as eligible for listing in the NRHP (ASM Affiliates, Inc. 2009b).

In 1936, President Franklin D. Roosevelt established Joshua Tree National Monument as a unit of the national park system. The area included 825,340 acres of land, some of which remained in private ownership or encumbered by patented and unpatented mining claims. Even before Joshua Tree National Monument was created, many people opposed the idea of an environmental preserve in California's deserts, particularly from mining interests.

At this time miners started to direct their attention on the substantial iron ore in the Eagle Mountain area. World War II started in 1939 and created an enormous demand for steel, particularly for shipbuilding. Industrialist Henry J. Kaiser and Dr. Sidney Garfield were in the area for the construction of the Colorado River Aqueduct and later worked together on an insurance program for employees (see *Boundary Adjustment Criteria Evaluation* in *Chapter 2* for additional details). In 1942, Kaiser opened the West Coast's first steel mill in Fontana, California with iron ore supplied by the Vulcan Mine in Kelso, California. This steel went to Kaiser's west coast shipyards, where Liberty and Victory ships were built at record speeds. Kaiser then looked to Eagle Mountain for additional iron ore and existing mining patents from the Southern Pacific Railroad, now protected under the national monument. In 1943, Kaiser started work on a 55 mile rail spur from Eagle Mountain to Southern Pacific's main line to access the mills. Upon completion of Kaiser Industrial Railroad (Eagle Mountain Industrial Railroad) in 1948, active mining began and materials were transported to the steel mill in Fontana, California. Eagle Mountain Road was the first paved road in the area and constructed around 1943 (BLM 2011). Mining equipment, structures and railroad yard remnants could still be found onsite (Dilsaver 2015, ASM Affiliates 2011a).

The southern California deserts were also used for military training during World War II. The Desert Training Center opened in 1942 under the command of George S. Patton. It was renamed the California-Arizona Maneuver Area (C-AMA) in 1943 after the fighting in North Africa ended and troops destined for other theaters of operations trained at the facility (Lynch et al. 1982). This was the largest military training installation ever created, with 11 camps, consisting mostly of temporary buildings and tents, spread across the desert of southern

California. The camp closest to the study area was Camp Desert Center, extending immediately east of Eagle Mountain Road and north of the old former Interstate 10. Two historic refuse scatters associated with the Desert Training Center have been evaluated as eligible for listing in the National Register of Historic Places (Bischoff, Allen, and Baxter 2012).

In 1950, recognizing that almost a quarter of the land within Joshua Tree National Monument was being actively mined, Congress removed 265,000 acres of land from the monument's boundaries. This occurred after years of discussion and debate about the national monument given the complexity of ownership patterns and mineral interests within the boundary upon its establishment in 1936 (Dilsaver 2015).

Kaiser Steel Corporation (KSC) purchased patented mining claims within the monument from Southern Pacific Railroad in 1944. Production in the Eagle Mountain Mine began in 1948 under a special use permit from the National Park Service (Powell et. al. 1984, Dilsaver 2015). In 1955, the Department of the Interior issued a land patent to KSC for approximately 460 acres of land at Eagle Mountain for a mining camp and mill site. This patent included a provision that the property would revert in fee back to the United States if it was not used for a continuous period of seven years as a camp, mill, or other related mining operations. In 1956, pursuant to the Act of July 8, 1952, the Department issued KSC a patent for a railroad. Over the years, KSC obtained patents for additional property. Kaiser Road was constructed by Kaiser Steel Corporation between 1957 and 1963 to provide access to the Eagle Mountain Mine and Townsite (BLM 2011).

Ultimately, four large open pits of between 1-2 miles in length were excavated. The mine expanded and the camp turned into a bustling company town with a population of almost 4,000 at its peak with housing, community and recreation facilities, churches, schools, and emergency services. The Townsite had wide, landscaped streets lined with over four hundred homes, hundreds of trailer spaces, boarding houses and dormitories. Kaiser Road was constructed between 1957 and 1969 to provide access to Eagle Mountain Mine and the Town of Eagle Mountain. KSC's patented lands, together with approximately 2,000 acres of adjacent public lands encumbered by Kaiser's mining and mill site claims, comprised the Eagle Mountain Mine. The road exists in the study area and is in good condition, although heavily graded. Surveys completed for the Desert Sunlight Solar Farm Project found one archeological site (a historic age refuse deposit) and one isolated find (historic can) within 150 feet of the road (BLM 2011).

Competition from overseas steel markets, as well as environmental concerns, forced the mine to close full scale operations in 1983. Kaiser Steel Corporation entered bankruptcy in 1987 and emerged as Kaiser Ventures and a wholly-owned subsidiary called Kaiser Eagle Mountain, Inc. When full-scale mining operations at Eagle Mountain Mine ceased, the Townsite was mostly vacated. Many of the structures were removed, left vacant, or vandalized after full-scale mining operations ceased. The Townsite was used as a Youth Correctional Facility from 1986 to 2003 (DMJM Design/AECOM 2007). A large number of buildings remain in the Townsite unoccupied.

The Eagle Mountain Mine, Townsite, and features associated with the Eagle Mountain Railroad may be eligible for listing in the National Register of Historic Places (NRHP). In 1996, the Bureau of Land Management (BLM) and California State Historic Preservation Officer (SHPO) found the properties ineligible for the NRHP because they were less than 50 years of age and lacked exceptional significance under the NRHP criteria (BLM 1996). However,

the California SHPO has requested re-evaluation of the properties (FERC 2012). The mine contains a number of other historic era resources such as a wooden post associated with a mining claim, rock cairns and refuse scatters (FERC 2012).

In 1989, Kaiser issued a 100 year lease to Mine Reclamation Corporation to develop a landfill at the mine site. At full operation, the landfill would have received approximately 20,000 tons of garbage per day from the Los Angeles area via the Eagle Mountain Mine railroad line. More acreage was needed for the project, and Kaiser proposed a land exchange to BLM so they could acquire additional land needed for the landfill. BLM agreed and issued patents to Kaiser for 3,481 acres of federal land surrounding the mine pits. BLM received 10 separate parcels totaling 2,846 acres. In 2013, after years of controversy and litigation, the landfill project was ~~abandoned~~terminated.

In 2014, the issue was settled in the form of a Stipulated Judgment. The Stipulated Judgment voided the patents issued to Kaiser for the 3,481 of exchange lands around the mining pits and restored those lands to public land status. Kaiser also agreed to donate to the United States the lands it had previously conveyed as part of the voided land exchange (1,083 acres). In return, the Stipulated Judgment restored Kaiser's mining and mill site claims to over approximately 2,400 acres of the former exchange lands around the mine pits. This land is now owned by ~~Eagle Crest Energy Company~~Kaiser Eagle Mountain LLC (KEM). ~~, which has a FERC license to construct the Eagle Mountain Pumped Storage Hydroelectric Project.~~

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In 2015 KEM was purchased by Eagle Mountain Acquisition, LLC of which Eagle Crest Energy Company has a substantial interest. Eagle Crest Energy Company has a FERC license to construct the Eagle Mountain Pumped Storage Hydroelectric Project.~~In 2015, Kaiser Steel Corporation (Kaiser Steel) and Eagle Crest Energy Company entered into an agreement under which Kaiser Steel sold all of its private land and its interests in unpatented mining claims in the Eagle Mountain area to Eagle Crest Energy Company (Eagle Crest holds title to this land under the corporate name Kaiser Eagle Mountain). Eagle Crest Energy Company has a FERC license allowing it to construct the Eagle Mountain Pumped Storage Hydroelectric Project.~~

Visitor Opportunities and Access

Activities within the region include hiking, camping, backpacking, wildlife watching, bicycling, bird watching, photography, stargazing, rock climbing, wildflower viewing, mountain biking, horseback riding, camping, off-highway vehicle use, and mining. The majority of visitor use activity is in the vicinity adjacent to Joshua Tree National Park, which reached a high of two million visitors in 2015.

Most of the study area lands are federal lands managed by the Bureau of Land Management (BLM). Permitted uses differ by land management agency. For example, gold panning, rockhounding, hunting, target shooting, off-highway vehicle riding are typically allowed on land managed by BLM, but not the National Park Service (NPS) (although there are some exceptions, depending on the park). Camping is free on BLM-managed land and dogs are permitted off established roads.

The privately owned former Eagle Mountain Mine bisects the study area. Public access has been restricted to this site since the mine began operation. Both Kaiser Road and Eagle Mountain Road lead to the mine, but the entire area is fenced and guarded. The west side of the study area can be accessed through Joshua Tree National Park on Black Eagle Mine Road, a four-wheel drive unmaintained dirt road. This road, used by both locals and tourists, traverses a non-wilderness corridor in the eastern section of Joshua Tree National Park and continues beyond the park boundary into the study area. The road has a large boulder in the middle of the road about three miles east of the Joshua Tree National Park boundary to block access to the Eagle Mountain Mine. Neither NPS nor BLM have records of the use of this road, but it is estimated that the road may see about 1,000 day-use visits in a season (FERC 2012).

Although there are no established public trails within the boundary study area, a network of dirt roads lead to backcountry camp sites, unpatented mining claims, and other popular mining locations. The area is largely used by members of a local mining club, but other visitors also sometimes venture into this rugged backcountry. Some users have been visiting this portion of the study area for almost 50 years. Visitors to the area have multi-generation gatherings and picnics, and participate in primitive camping, mining and teaching mining techniques, shooting, hunting, using off road vehicles, and enjoying solitude, quiet, and the dark night skies. Miners actively conduct placer mining on four active unpatented mining claims in the western section of the study area. Two other unpatented mining claims are lode claims. Use of four-wheel drive vehicles also provides access for disabled or younger visitors who would be unable to hike into remote areas.

Soundscape

Sound is caused by pressure variations in the air that are sensed by the human ear. Noise is defined as any undesirable sound that interferes with normal activities for both humans and wildlife. The soundscape in the boundary study area is generally quiet with limited noise sources. And as one moves away from roads and highways, modern noise fades away and soundscape becomes quieter, with natural sounds dominating.

Joshua Tree National Park's natural soundscapes are impacted by modern developments that are decreasing areas of natural quiet. Military activities, commercial airlines, and excessive mechanical noise produced within and adjacent to the park degrade the natural soundscape. The majority of the study area is undeveloped and abuts wilderness in Joshua Tree National Park, which is free from vehicular roads or other sources of noise where natural sounds largely dominate. The sound of whistling wind or wind flowing through vegetation is often heard, as are calls from the numerous bird species or a howl from a coyote.

The Eagle Mountain Mine and Townsite are largely unused. Kaiser Road and Eagle Mountain Road have only occasional use by heavy machinery or vehicles. Other sources of noise in the area include off-highway vehicle engines, a local race track approximately 10 miles to the east, traffic from Interstate 10 (about 10 miles south-southeast from the study area) and local roads, and both commercial and military aircraft overflights. There is a private landing strip associated with the closed Eagle Mountain Mine on the eastern edge of the study area. This private airstrip is minimally used to access the Eagle Mountain Mine, but any flights have the potential to produce noise. Construction of the Eagle Mountain Pumped Storage Hydroelectric Project will likely increase noise in and around the mine area.

Visual Resources

The study area is a unique juxtaposition of a pristine desert landscape, a highly disturbed iron mine and former mining town. Approximately 80% of the area is wild, undisturbed natural desert managed by the Bureau of Land Management (BLM) that connects seamlessly, on three sides, with wilderness in Joshua Tree National Park. Mountains have both gentle slopes and rocky outcrops that rise from broad, flat desert valleys. The desert is covered with low-lying sparse vegetation that comes alive with

blooming cactus and spring wildflowers after winter rains. Portions of the study area adjacent to the national park have little sign of human development or disturbance and have dramatic views of untrammeled wilderness. Here, the night sky provides another excellent viewshed: the lack of artificial light provides an inspiring view of starry nights.

The eastern and central portion of the study area consists of the Eagle Mountain Mine. The large terraced mine with its extensive open pits, benched side walls and high exposed waste rock piles remain as a reminder of the past. The gray rock piles and excavated terraces create a stark contrast to the undisturbed, natural purple-hued backdrop of the Eagle Mountains. The greater mine footprint is approximately 1,000 feet from the park boundary at its closest point on the north side of the mine.

Adjacent to the mine, the Townsite is largely composed of deserted homes and vacant buildings, and other facilities related to the mining operations. Some buildings and houses have already been removed but their foundations remain. Other human-made disturbances that visibly stand out from the natural landscape include: roads, a railroad, transmission lines for the Colorado River Aqueduct, and wood distribution poles supplying electricity to the Townsite.

From Interstate 10, south of the study area, the view consists of a vast desert landscape, and the mine is barely noticeable. As one approaches the study area from the south or east, via Eagle Mountain Road or Kaiser Road, the waste rock piles, benched walls, and fenced Townsite are visible in the foreground, with undisturbed desert mountains in the background. The mine can be seen from some of the higher elevations in the western section of the study area, on both BLM land and from within Joshua Tree National Park. However, much of the western section of the study area, accessed from Black Eagle Mine Road has beautiful views of an expansive and preserved desert landscape.

Wilderness

Under the Wilderness Act of 1964, the wildness and naturalness of wilderness areas are to be preserved and the lands managed for their "wilderness character." They also have greater protection from development. As defined by the Act, "A wilderness, in contrast with those areas where man and his own works dominate the landscape is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain."

No wilderness areas exist in the study area, but it is bordered by wilderness in Joshua Tree National Park on the north, west, and south sides, and these lands are some of the most pristine wilderness lands in the park. Approximately 80% of Joshua Tree National Park is wilderness and another nine percent is potential, designated, or proposed wilderness. Given the large amount of wilderness area in the park, ample opportunities exist for visitors to enjoy the solitude and untrammeled landscape that are characteristic of a high quality wilderness experience. Rock climbers, hikers, and overnight backpackers are regular visitors to wilderness areas, which provide opportunities for primitive recreation and solitude in wild settings. Wilderness access is limited; off road vehicles and mountain biking are not permitted.

In 1979, the Bureau of Land Management (BLM) conducted a Wilderness Inventory of the California Desert Conservation Area to determine the natural, roadless areas with enough solitude or primitive and unconfined recreation to be considered for a wilderness designation. The inventory evaluated the Eagle Mountain Wilderness Study Area, portions of which fall within the area evaluated in this study (334-Eagle Mountain Study Area). The wilderness study area was bordered by Joshua Tree National Park to the west, Black Eagle Mine Road to the north, and the Eagle Mountain Mine (maintained dirt roads, portion of the railroad, transmission line, and access road) to the east. In 1991, the BLM completed

its California Statewide Wilderness Study Report. The study found that the ruggedness and diversity of this terrain screens visitors from one another, and the proximity to wilderness in Joshua Tree National Park would create outstanding opportunities to experience primitive and unconfined. Ultimately, over 50,000 acres of the 60,000 acre inventory area was recommended as wilderness, much of which is protected wilderness in Joshua Tree National Park today. Most of the areas under the purview of this study were determined unsuitable at the time, due in part, to mineral resource presence and mining activity apparent on the landscape (BLM 1979). Most of the Eagle Mountain Wilderness Study Area that was recommended as wilderness by BLM in 1991 was designated wilderness by Congress in 1994 when the California Desert Protection Act added the lands to Joshua Tree National Park.

Human Health and Safety

Former mining areas often contain safety issues and resource impacts, depending on the extent and type of the mining activities. Hazardous substances could be present in the soil and/or mining tailings that pose a threat to water quality, public safety, and/or the environment. There are physical hazards posed by open mine shafts due to open vertical shafts or mill sites with deteriorating buildings and equipment. Many abandoned mine sites could have deadly gases and risk of asphyxiation, collapsing mine walls, explosive and toxic chemicals, and rotting structures. The Eagle Mountain Mine site is not considered an abandoned mine land, but does have ~~has~~ a number of physical safety hazards such as open pits and trenches, pits with steep drop offs, high waste rock piles, and deteriorating infrastructure. Buildings in the town site are over 50 years old, deteriorating and likely contain asbestos and polychlorinated biphenyls. The Townsite is owned by ~~Eagle Crest Energy Company~~Kaiser Eagle Mountain, LLC, which may choose to reuse some of the buildings, after remediation, and demolish the ones that are deteriorating those that are beyond repair.

Access for emergency vehicles in the majority of the study area is currently limited since access is blocked on Kaiser Road and Eagle Mountain Road is blocked at the entrance to the mine. Black Eagle Mine Road is unmaintained and is accessible only with a high clearance 4-wheel drive vehicle.

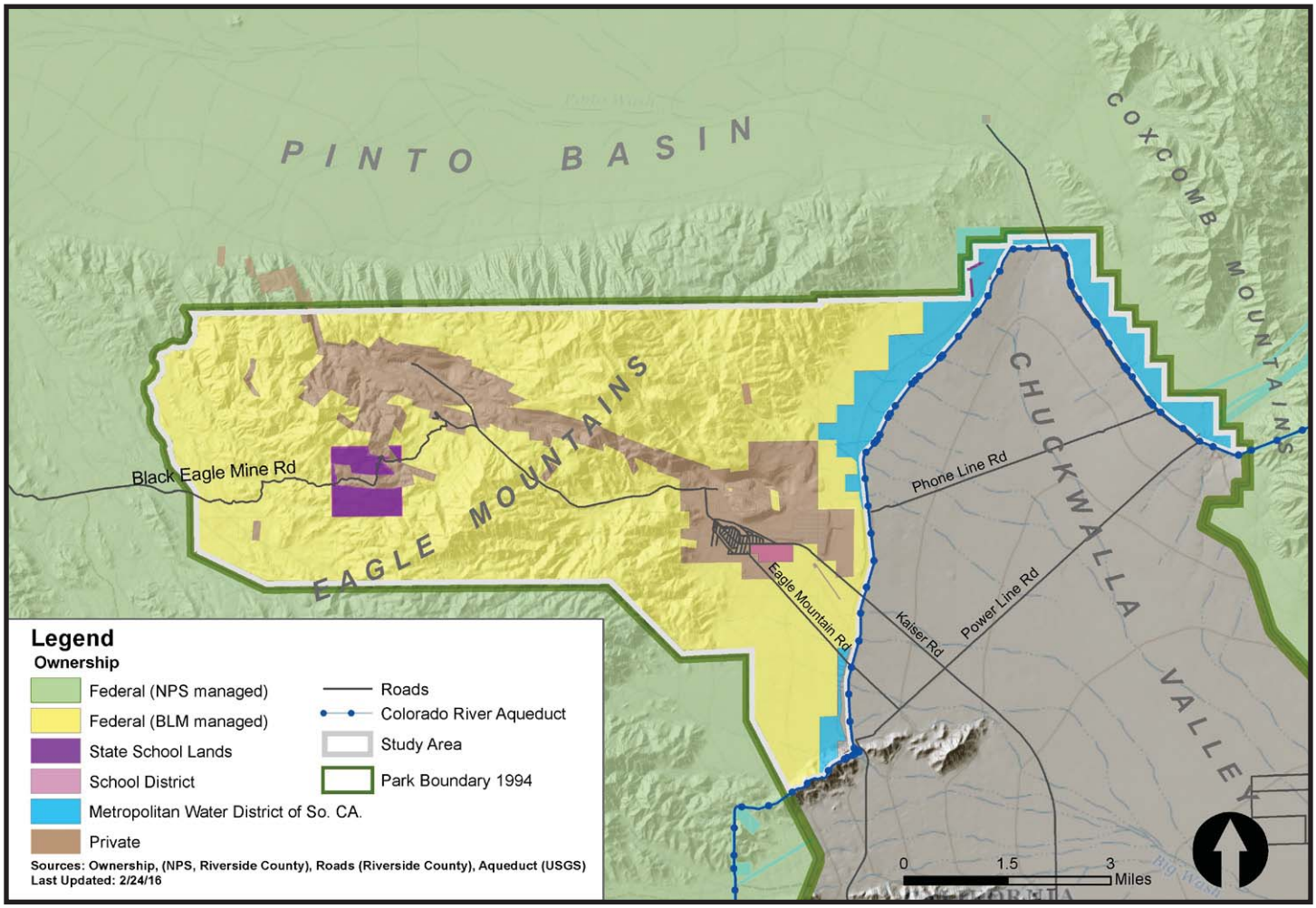
Land Use and Ownership

Study area land is an assemblage of different uses and ownership and was so even before the park was established (Dilsaver 2015). Over two hundred parcels are owned by seven different public and private entities. The study area is comprised of approximately 31,500 acres of land within the Eagle Mountain area in Townships 3S and 4S in Riverside County, California. It is surrounded by Joshua Tree National Park to the north, west and south and bordered by the Metropolitan Water District of Southern California's (MWD) Colorado River Aqueduct on its eastern edge. *Table 4-2: Land Ownership in the Study Area* depicts the acreages of land owned in fee by the different parties within the study area. *Map 4-11* shows area landownership and management. More information on land use and ownership can be found in the *Feasibility Criteria Evaluation* in *Chapter 2*.

Table 4-2: Land Ownership in the Study Area

Owner	Acreage (Approximate)
Federal Lands (BLM-administered)	23,140
Private Land	5,050
Metropolitan Water District of Southern California	2,850
State School Lands (California State Lands Commission)	~~340~~379
Desert Center Unified School District	90
GTE/ General Telephone Co. of California	<1
Total	~~31,470~~31,510
Sources: Riverside County Parcel Assessor Data, October 2015, NPS	

Map 4-14: Ownership and Management



Public Lands

Land Use Policies

There are numerous laws and authorities that regulate uses on BLM managed land. The Federal Land Policy and Management Act of 1976 (FLPMA) established the California Desert Conservation Area (CDCA). The study area is within the CDCA and is subject to management guidelines the 1980 *California Desert Conservation Plan* and its subsequent amendments as described in the *Feasibility Criteria Evaluation* in *Chapter 2*.

The *Northern and Eastern Colorado Desert Coordinated Management Plan*, approved in 2002, provides another set of rules for a subset of the larger CDCA, and also applies to the study area (BLM and CDFG 2002). This plan designates the land within the study area as moderate and limited use. Public lands west of the Kaiser property but east of the park boundary are managed as Multiple Use Class-L, and public lands east of the Eagle Mountain Mine are managed according to Multiple Use Class-M guidelines. Class "L" (limited use) lands are managed to provide lower intensity, carefully controlled multiple uses while ensuring that sensitive resource values are not significantly diminished. Allowable uses in Class L areas include electric generation plants (wind, solar or geothermal); gas, electric and transmission facilities and cables; communications sites; livestock grazing; mining; and low to moderate recreational activities. Class "M" (moderate use) lands are managed to provide for a wider variety of uses such as mining; livestock grazing, moderate to high density recreational uses; utilities, and all types of electrical general plants. Much of the ~~BLM lands~~BLM managed lands within the study area would remain under these existing designations.

However, the *Desert Renewable Energy Conservation Plan Proposed Land Use Plan Amendment Final Environmental Impact Statement (DRECP LUPA)*, currently pending approval, will serve as the most recent land use plan amendment to the CDCA. The DRECP LUPA proposes to apply two BLM protective land use designations to the study area - National Conservation Land (NCL) and Area of Critical Environmental Concern (ACEC). These designations apply to less than half of the lands within the study area (12,500 acres). Further, the DRECP LUPA proposes conservation management actions that provide additional protection of the undesignated lands (or unallocated lands per the DRECP). See *Map 2-7: BLM Proposed Land Use Designations*.

The DRECP LUPA would set rules for land use on NCA and ACEC that alter the land use designations as defined by the NECO plan (BLM 2015a). These lands would be managed to protect nationally or regionally significant ecological, cultural and scientific values. Certain activities and uses would be limited. In each unit, disturbance in each area would be capped at 1% to prevent unnecessary ground disturbance that could impact important resources. The BLM could consider mineral extraction from these areas. Within the proposed ACEC, renewable energy development would not be permitted, minerals - material sales would be allowed only in areas where impact to vegetation and wildlife would be negligible, no surface occupancy leasable minerals would be permitted, and off-highway vehicle use would be limited to designated routes. BLM would develop implementation plans with more guidance and rules for each unit. More specific information on these proposed conservation areas and the proposed disturbance cap can be found in the DRECP LUPA, Section II.3.2.1.

The other BLM-managed lands in the study area would be categorized as "unallocated lands." Allowable uses could range from electric generation plants (wind, solar or geothermal); gas, electric and transmission facilities and cables; communications sites; livestock grazing; mining; and low to moderate recreational activities as defined the BLM CDCA plan as

amended. However, the BLM could reject a renewable energy application in these areas if inconsistent with allowable uses and management actions (conservation management actions or CMAs) as defined in the DRECP. The CMAs would have a variety of goals and standards. Some would be designed to protect individual species such as desert tortoise or golden eagles, while others define resource setbacks to avoid and minimize adverse effects to specific biological species (BLM 2015a). Given the configuration of the unallocated lands in relationship to the park boundary, incompatible uses could have adverse impacts on park resources such as wildlife, water resources, and wilderness values, particularly when combined with anticipated impacts from proposed development projects such as the proposed Eagle Mountain Pumped Storage Hydroelectric Project.

Use and Ownership

The majority of the land, approximately 23,000 acres (73%), is currently federal land managed by BLM. The vast majority of the federal land is undisturbed and lacks facilities or other development. It is used by visitors for mining, rockhounding, camping, and off-highway vehicle use. There are 460 unpatented mining claims on BLM land owned by Kaiser Eagle Mountain, LLC and another six claims are owned by mining clubs or individuals. Approximately 620acres of BLM-managed federal land within the study area has been withdrawn under the Federal Power Act for the Eagle Mountain Pumped Storage Hydroelectric Project. Southern California Edison has electrical infrastructure and telecommunications infrastructure located within the study area. This infrastructure requires periodic inspection and maintenance. An existing right-of-way from the BLM covers approximately 28.6 miles of the 52-mile railroad; the remainder of the rail line traverses the private lands, and other federal agencies and private landowners have issued easements or other permits for the rail line (Riverside County and BLM 1996).

State and Local Lands

Approximately ~~340~~ 379 acres are owned and managed by the California State Lands Commission in the western portion of the study area and along the Colorado River Aqueduct. These properties are referred to as State School Lands. The California State Lands Commission is the trustee and land manager for sovereign and school lands. School lands are what remains of the nearly 5.5 million acres throughout the state originally granted to California by the Congress in 1853 to benefit public education. California retains surface and mineral ownership of approximately 430,000 acres of these school lands and retains the mineral rights in an additional 790,000 acres. In management of these lands, the Commission must balance long-term preservation of the resources with responsible economic development and determine what is in the state's best interest. Any projects undertaken or approved by the Commission must be consistent not only with the Commission's statutes and regulations, but with common law Public Trust Doctrine.

The Desert Center Union School District operates the Eagle Mountain School. After the mine ceased full-scale operations, four of the District's schools closed. The high school was converted to become the kindergarten through eighth grade Eagle Mountain School for the area's few remaining students. Today, enrollment is at approximately 20 students. The Metropolitan Water District of Southern California (MWD) owns and manages approximately 2,850 acres (9%) of the land within the study area to operate, manage, and maintain the Colorado River Aqueduct. The aqueduct itself forms the eastern edge of the study area, but no MWD lands are within any of the study alternatives. A small county road also exists in the study area (Kaiser Road).

Private

Land Use Policies

All private property in the study area is subject to the land use policies of Riverside County, and

specifically those identified in the County of Riverside *Desert Center Area Plan* (Riverside County 2003). The plan generally reflects the very limited development potential in the study area. The vast majority of acreage within the area plan is designated open space-rural. The plan recognizes that the lands are generally remote, inaccessible, subject to natural hazards, or unable to support more intense development due to the lack of public facilities and services. The Desert Center Area Plan implements policies around how the land can be used, such as types of development, density, agriculture, mining, renewable energy uses, recreation, etc. It also creates policies for protection of the land such as the preservation of desert tortoise critical habitat, prevention of light pollution, and protection against wildland fire.

The *Desert Center Area Plan* applies to three areas: the former Eagle Mountain Mine and Townsite, Desert Center, and Lake Tamarisk (not in the study area). In the plan, the 5,500-acre former Eagle Mountain Mine is zoned for a Class III nonhazardous solid waste landfill operation and is referred to as the Eagle Mountain Landfill. However, the landfill development was never realized. ~~The Eagle Mountain Landfill and Eagle Mountain Townsite each have their own specific plans that provide a bridge between the General Plan and individual projects, in a more area-specific manner than is possible with community-wide zoning ordinances.~~

~~The Specific Plan for the Townsite, Plan 306, states that general uses will be consist with past use and include residential, recreational, general commercial, commercial manufacturing, correctional facilities, storage, and public facilities and services (Riverside County 1997b). Specific Plan No. 305 for the Eagle Mountain Landfill states that as an approved landfill site, the property is designated for public facility use (Riverside County 1997a).~~ Any alternative land use on this site, other than for public facilities, would be in accordance with the Open Space foundation component designation. The Open Space General Plan Foundation component is intended to preserve habitat, water, and other natural resources, protection from natural hazards, provision of recreational area, and the protection of scenic resources (County of Riverside 2003). For more information on zoning see the *Feasibility Criteria Evaluation* in *Chapter 2*.

Use and Ownership

There are a number of privately owned parcels in the study area. The largest private landowner in the study area is ~~the Eagle Crest Energy Company~~ Kaiser Eagle Mountain LLC (KEM~~Eagle Crest~~). In June 2015, ~~Eagle Crest Energy Company~~Eagle Mountain Acquisition, LLC purchased the real property, mining and mill site claims, personal property, and the right and interests related to the Eagle Mountain Mine and Townsite. ~~This property was sold by subsidiaries and limited liability companies of Eagle Mountain Acquisition LLC~~Eagle Crest Energy Company maintains a substantial interest in KEM as it initiated the purchase of the property to facilitate development of the Eagle Mountain Pumped Storage Hydroelectric Project. Within the study area, there are over 5,000 acres of patented fee lands owned by ~~Eagle Crest~~KEM, in addition to many holdings of unpatented mining claims on the federal lands (See *Appendix D: Unpatented Mining Claims*).

The heavily disturbed mine site consists of inactive open pits, waste rock piles, and tailings ponds. Remnants of the structures associated with the previous mining facilities remain onsite, although most of the ore processing and refining facilities have been removed. As stated previously, the Eagle Crest Energy Company received a 50-year license from the Federal Energy Regulatory Commission (FERC) for the construction and operation of the Eagle Mountain Pumped Storage Hydroelectric Project on the site of the largely inactive Eagle Mountain Mine.

As discussed in the *Feasibility Criteria Evaluation* in *Chapter 2*, EMMR has a lease to conduct above-ground mining activities in the formerly mined areas. These operations include: 1) extraction and processing of in situ materials; 2) recovery and reprocessing of waste, overburden and stockpiled materials to recover additional iron ore; and 3) recovery and processing of waste overburden and stockpiled materials to recover aggregate materials (Kaiser Eagle Mountain, LLC 2013).The initial term of the lease is 40 years which can be extended three times, each for an additional 20 years for a total term of 100 years.

Remnants of the Kaiser Industrial Railroad (Eagle Mountain Industrial Railroad) are also within the study area; the railroad spur begins at the mine, heads northeast to outside the study area boundary. The railroad real property, the railroad spur, rights-of-way, easements, fixtures, vehicles, and equipment remain under ownership of Eagle Mountain Mining and Railroad Company, LLC (EMMR).

Today, the Eagle Mountain Townsite is largely vacant. Some Kaiser Eagle Mountain employees maintain residences there for security purposes, and the school is still in operation. The Townsite would continue to be in private ownership as long as mining continues per the agreement between Eagle Mountain Mining and Railroad (EMMR) and Kaiser Eagle Mountain to continue to conduct surface mining operations at Eagle Mountain Mine. At such time that use of the land for mining ceases, the lands associated with the Eagle Mountain Townsite would revert to the United States, as per Public Law 790. The BLM would then have some discretion for management of the property; the Recreation and Public Purposes Act allows the leasing or conveyance of BLM land to state and local jurisdictions, or to non-profits, for recreation or other public purposes. Conveyances to state and local agencies can be at no cost, provided the application and proposal from the local agency meets the regulatory requirements.

A 31-acre parcel in the northwest corner of the study area contains patented mineral rights and is owned by a separate entity. Less than one acre of land in the Townsite is listed as owned by the General Telephone Company of California c/o GTE Telephone.

Park Operations

Park management and operations refers to the current management structure of the park to provide policy direction for the protection, public use, and appreciation of the park, and the ability of park staff to adequately protect and preserve vital resources and provide for park visitors. In fiscal year 2015 Joshua Tree National Park employed almost 100 full-time equivalent positions and had an operating budget of $6,059,700.

Park operations fulfilled by the park employees include a variety of administrative activities, maintenance activities (roads, trails, historic structures, buildings, utilities, and housing), resource management activities (native and non-native plant and wildlife management, fire/fuels management, research, inventory, monitoring, and restoration), law enforcement, and visitor services activities (search and rescue and other emergency services, interpretation, campground, and visitor center operations). Refer to the *Feasibility Criteria Evaluation* in *Chapter 2* for more information on park operations. Additionally, the park expends considerable effort, time and funds monitoring and reviewing proposals by other agencies that may affect National Park Service resources or programs. Some park staff worked for at least 10 years on issues related to development of the Eagle Mountain area.

Socioeconomics

Joshua Tree National Park lies within both San Bernardino and Riverside counties, approximately 100 miles from the Los Angeles metropolitan area. More than 18 million people live within a three-hour drive of the park. The boundary study area falls completely within Riverside County, in the vast Colorado Desert which is characterized by undisturbed wilderness, distinctive flora such as the Joshua tree, sand dunes, mountainous terrain.

The study area is adjacent to Desert Center, an unincorporated community bisected by Interstate 10. It is approximately 55 miles east of the City of Coachella and 55 miles west of the City of Blythe. Joshua Tree National Park lies to the northwest, the Coachella Valley lies to the west and the Palo Verde Valley lies to the east. Desert Center is located in the middle of the Colorado Desert, in the Chuckwalla Valley, far removed from urbanized areas. It contains the community of Lake Tamarisk, a retirement community features single family homes, duplexes and mobile homes, situated around the lake and includes a 9-hole golf course.

This section describes the existing demographic, employment and income conditions of Desert Center, and Riverside and San Bernardino counties. The *Feasibility Criteria Evaluation* in *Chapter 2* describes the more immediate demographics and socioeconomic factors associated with Desert Center.

Population

Riverside and San Bernardino counties comprise what is commonly known as the Inland Empire, one of the fastest growing areas in the nation. As the 4th most populous county among the 58 counties in California, Riverside County has more than 2.1 million residents. San Bernardino County, with just over 2 million people, is the 5th most populous county in state and the largest county in the contiguous United States (with an area of 20,105 square miles). From 2000 to 2010, population growth for Riverside and San Bernardino counties increased 42% and 19% respectively, considerably higher than the overall 12.3% growth rate for the Southern California Association of Governments Region. This region includes Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura counties (U.S. Census Bureau 2015a, 2015b, 2015c, 2015d; Southern California Association of Governments 2015a).

No population projections are available for Desert Center. However, U.S. Census Bureau data from 2010-2014 shows the population remains relatively constant. The population decreased from 188 in 2010 to 150 in 2011; increased to 177 in 2012; then fell to 172 in 2013. *Table 4-3: Current and Future Population* provides a comparison among population projections for Riverside and San Bernardino counties and the state.

Race

Racial and ethnic diversity is higher in Riverside and San Bernardino counties when compared to state figures. Nearly 60% of the total population in Riverside County reported that they belong to a minority race group and nearly half the population reported being of Hispanic origin (46%). Hispanic or Latino represents the largest minority in San Bernardino County with half the population identifying themselves as part of this group (50.5%) (U.S. Census Bureau 2015a and 2015b). Approximately 39% of Desert Center residents identify themselves as Hispanic or Latino and 61% as non-Hispanic (U.S. Census Bureau 2015a, 2015c, 2015c, 2015d). *Table 4-4: 2014 Race and Ethnicity* provides ethnicity statistics for California, San Bernardino County, Riverside County, and Desert Center.

Education

According to U.S. Census Bureau estimates, about 25% of the population in Riverside County 25 years and older graduated from high school. Approximately 21% earned a bachelor's degree. In San Bernardino County, approximately 26% of the population over the

age of 25 graduated from high school and almost 19% received a bachelor's degree. Approximately 10% of the Desert Center population earned a bachelor's degree, and 33% earned a high school diploma or equivalent. *Table 4-5: 2014 Education Attainment* shows the comparison.

Employment and Income

The median household income in Riverside County is approximately $56,529 per year. A little more than 16% of the population lives in a household with income below the federally-determined poverty threshold. Nine percent of the county's labor force was unemployed in 2014. The median household income in San Bernardino County is approximately $54,100 per year. Nearly 19% of the population lives in a household below the poverty threshold. More than 8% of the county's labor force was unemployed in 2014. The median household income in Desert Center is approximately $55,750 per year. Less than 1% pf the Desert Center workforce was unemployed in 2014, but the U.S Census Bureau estimated that about 33% of the population of Desert Center lives in a household whose income in 2014 was below the federal poverty level[2] (U.S. Census Bureau *2015a, 2015b, 2015c, 2015d*).

Job growth in the Inland Empire outperformed the state and the rest of Southern California for the third year in 2014. The region is seen as increasingly attractive to companies that are leaving the coastal counties in search of more affordable and larger areas of land for commerce, manufacturing and distribution operations (Runyan 2015). Strong job gains were recorded over the past few years for the region as 46,500 jobs were added in 2012, 58,800 jobs in 2013 and 49,600 jobs in 2014. The annual growth rate for the area was more than 4%, the highest rate since mid-2000 when economic growth was supported by the housing boom (Farka and Fleissing 2015).

Employment in the Professional and Business Services sector showed the strongest gains in 2014, adding 10,900 jobs. This increase creates a positive outlook for future income growth since these jobs are relatively well paid. The Leisure & Hospitality sector added 8,200 jobs while the Health Care sector added 5,300 jobs (Farka 2015).

Although the Construction and Manufacturing sector had previously suffered job losses, employment in Construction grew by 2,300 while Manufacturing added 2,500 jobs. The Construction sector had suffered significant losses during the recession with employment falling from 130,000 jobs to a low of 57,000 jobs in 2010 (Farka 2015).

According to the Governor's Office of Business Development and Visit California, travel-related employment continues to grow annually between 1.7% and 1.9% in Riverside and San Bernardino counties. Travel-related spending in 2014 generated 72,610 jobs and $190 million in local tax revenue in Riverside County and 50,140 jobs and $104 million in local tax revenue in San Bernardino County (Runyan 2015). Visitors to Joshua Tree National Park spent an estimated $73.8 million in local gateway communities in 2014. These expenditures supported a total of 1,000 jobs, $38 million in labor income, $60 million in value added, and $97.2 million n in economic output in local gateway economies surrounding Joshua Tree National Park (Cullinane et al. 2015).

The U.S. Census Bureau employment data by industry for Riverside and San Bernardino counties shows that the largest job sectors in Riverside and San Bernardino counties are education-health (20.6% and 22.7% respectively), retail trade (13% and 31.1%

[2] The overall U.S. Census Bureau data for Center CDP is highly variable. Poverty level data for this area has a +/-25.9% margin of error. The value shown is the 90% margin of error and the estimate plus the margin (the lower and upper confidence bounds) contains the true value.

respectively), professional services and manufacturing (9.3% and 10.2% respectively). Agriculture, forestry, fishing and hunting, and mining represent a combined total of less than 2% of the total employment for the region.

The unemployment rate in the Inland Empire fell to 8.5% in 2014, down from the 14.3% recession peak in 2010. Among the communities surrounding the Study Area, Chuckwalla Valley has the lowest unemployment rate at 2.3%, and Coachella Valley has the highest rate at 11.3%. The declining rate is attributed mainly to job creation, primarily in the health care and social assistance sectors that account for 20% of the jobs created during this period. Remaining job gains were concentrated in leisure and hospitality, retail trade, administrative, support and waste services, and transportation, warehousing and utilities. Job losses occurred in nondurable goods manufacturing, financial services, management of companies and enterprises, and other personal services (Kyser 2015).

The California Employment Development Department estimates that by 2020 employment in the Riverside-San Bernardino-Ontario Metropolitan Statistical Area is expected to reach more than 1.5 million, a 19.4% increase in job growth over a ten year period. Sectors expected to show the strongest job gains in 2020 are Educational Services/Healthcare and Social Assistance (212,000 jobs, 26.8% increase), Leisure and Hospitality (164,700 jobs, 27.4% increase) and Accommodation and Food Services (146,000 jobs, 28.6% increase). While employment gains in the Mining and Logging sector will be minimal with 1,600 jobs, this sector is expected to grow 33%. Job losses are expected. Manufacturing jobs are expected to decline by 3.3% (83,800 jobs) (California 2014a, 2014b, 2014c). *Table 4-7: Employment and Unemployment*, provides U.S. Census Bureau employment and unemployment data.

Poverty

Although the Inland Empire has begun to generate jobs in higher-paying sectors, a large portion of jobs remain in low paying sectors. Poverty remains a major concern especially with the slow recovery in the construction and manufacturing sectors which often provide high paying jobs for low education and low-skilled workers who were the hardest hit during the recession and the slow recovery (Farka 2015). Poverty levels identified by the U.S. Census Bureau for Riverside and San Bernardino counties are slightly higher than the poverty level for the state of California. More than 16% of Riverside County's and 18% of San Bernardino County's population lives below the poverty level[3], compared to the state of California figure of 15.9%. Poverty levels for Desert Center are higher than Riverside County. *Table 4-8: Poverty Rates*, summarizes U.S. Census Bureau poverty data.

3 The Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. The official poverty thresholds do not vary geographically, but they are updated for inflation using Consumer Price Index (CPI-U). The official poverty definition uses money income before taxes and does not include capital gains or noncash benefits (such as public housing, Medicaid, and food stamps" – U.S. Census.

Table 4-3: Current and Future Population

Geographic Area	2010 Census	2014 Estimate	2020 Projection	2035 Projection	Percent Change (2010-2035)
California	37,253,956	38,802,500	40,817,839	42,721,958	15%
San Bernardino County	2,035,210	2,112,619	2,233,441	2,633,363	29%
Riverside County	2,189,641	2,329,271	2,545,665	3,239,196	47%
Desert Center	188	208	unavailable	Unavailable	-
Source: U.S. Census Bureau 2015a, 2015c, 2015c, 2015d; CA Department of Transportation 2015					

Table 4-4: 2014 Race and Ethnicity

Race	California	San Bernardino County	Riverside County	Desert Center
White	62	62.9%	65 %	76%
Black or African American	6	8.7%	6.2%	.5%
American Indian and Alaska Native	.8	0.9%	1.0%	0%
Asian	13.5	6.6%	6.1%	0%
Native Hawaiian and Other Pacific Islander	.4	0.3%	0.3%	0%
Some Other Race	12.8	16.3%	16.8%	16.8%
Two or More Races	4.5	4.4%	4.3%	6.7%
Hispanic or Latino	38.2	50.5%	46.5%	39.4%
Non-Hispanic	61.8	49.5%	53.5%	60.6%
Source: U.S. Census Bureau 2015a, 2015b, 2015c, 2015d				

Table 4-5: 2014 Education Attainment

Level of Education	California	San Bernardino County	Riverside County	Desert Center
High School Diploma	21	26	25	33
Bachelor's Degree	20	19	21	10
Source: U.S. Census Bureau 2015a, 2015b, 2015c, 2015d				

Table 4-6: 2014 Median Household and Per Capita Income

Geographic Location	Median Household Income	Per Capita Income
California	$61, 489	$29,527
Riverside County	$56,529	$23,591
San Bernardino County	$54,411	$21,384
Desert Center	$55,750	$19,180
Source: U.S. Census Bureau 2015a, 2015b, 2015c, 2015d		

Table 4-7: 2014 Employment and Unemployment

Geographic Location	Civilian Labor Force	Employed	Un-employed	Percent Unemployed
California	18,804,519	16,635,854	2,168,665	7.3%
Riverside County	1,030,145	877,030	153,115	9.1%
San Bernardino County	938,164	801,850	136,314	8.8%
Desert Center	78	77	1	1.3%
Source: U.S. Census Bureau 2015a, 2015b, 2015c, 2015d				

Table 4-8: 2014 Poverty Rates

Geographic Location	Population for Whom Poverty is Determined	Population Below Poverty Level	% Below Poverty Level
California	36,913,404	5,885,417	15.9%
San Bernardino County	2,010,188	375,280	18.7%
Riverside County	2,193,762	355,511	16.2%
Desert Center	172	(x) no data given	33%
Source: U.S. Census Bureau 2015a, 2015b, 2015c, 2015d			

Environmental Justice

Presidential Executive Order 12898, *General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the Environmental Protection Agency, 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 1998)."

The Council on Environmental Quality provided Environmental Justice: Guidance under the National Environmental Policy Act in December 1997 to assist federal agencies in addressing environmental justice in their NEPA procedures. This guidance defines low-income population, minority, and minority population as follows:

- Low-income population: Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.
- Minority: Individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; black, not of Hispanic origin; or Hispanic.
- Minority Population: Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50% or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. In identifying minority communities, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a geographically dispersed/transient set of individuals (such as migrant workers or Native American), where either type of group experiences common conditions of environmental exposure or effect. The selection of the appropriate unit of geographic analysis may be a governing body's jurisdiction, a neighborhood, census tract, or other similar unit that is to be chosen so as to not artificially dilute or inflate the affected minority population. A minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds (CEQ 1997).

As stated above in the *Socioeconomic* description, approximately 16% of the population of Riverside County and 19% in San Bernardino County fell below the federally-determined poverty threshold. The U.S Census Bureau estimated that in the small town of Desert Center, approximately 33% fell beneath the federal poverty line. *Table 4-4: 2014 Race and Ethnicity* shows the percentages of minorities in each geographic location.

CHAPTER 5: ENVIRONMENTAL CONSEQUENCES

Introduction

The National Environmental Policy Act (NEPA) requires that environmental documents disclose the environmental impacts of the proposed action and its reasonable alternatives. In addition to various boundary adjustment options, the alternatives describe a range of possible activities that could be undertaken by Joshua Tree National Park under the different scenarios. This information is provided to give the reviewer an idea of possible future management of the area. However, specific plans for the areas, such as type and extent of use, recreational facilities, access, educational opportunities, etc. would be developed in future, site-specific planning and public involvement.

In most environmental documents, proposed actions are activities whose physical impacts can be estimated, modeled or projected. For a boundary study, the proposed actions are often policy changes and plans with no immediate physical impact on land or resources. As a result, this analysis is broad, rather than based on specific information about the type and location of facilities. The Council for Environmental Quality (CEQ) and National Park Service (NPS) Director's Order 12 state that for actions that broad in nature, the NEPA review and data on which it is based may also be broad. As such, the analysis is based on qualitative rather than quantitative assessment of impacts, unless otherwise noted.

Methods and Assumptions

NEPA analysis.

In accordance with NEPA, environmental consequences are determined by describing how the existing condition of a resource would change, either negatively or positively, as a result of implementing any of the alternatives under consideration. Analysis of the environmental consequences is based on literature reviews, information provided by experts in the NPS, as well as outside organizations, and the professional judgement of the study team members, as well as the status of the resource or the *Affected Environment* as presented in *Chapter 4*.

The environmental analysis includes a factual description of both adverse and beneficial direct, indirect, and cumulative impacts, as well as a discussion of the importance of the impacts. This discussion is guided by consideration of context and intensity (40 CFR 1508.27). Context is the setting, situation, or circumstances surrounding a particular resource (40 CFR 1508.27(a)). Context provides a backdrop against which the intensity of impacts can be applied to understand their importance. A park unit's purpose and significance can provide important overall context for assessing the importance of many impacts. Intensity is the severity or magnitude of an impact (40 CFR 1508.27(b)). Assessing the intensity of impacts to a specific resource is linked to the context in which that resource is found.

The impact assessment in this chapter incorporates, where appropriate, analysis and information from the Bureau of Land Management's recent Desert Renewable Energy Conservation Plan (DRECP) Proposed Land Use Amendment (LUPA) and Final Environmental Impact Statement (October 2015) and the Federal Energy Regulatory Commissions' Final Environmental Impact Statement for the Hydropower License, Eagle Mountain Pumped Storage Hydroelectric Project (January 2012). These documents primarily informed the analysis for Alternative A, No Action and the cumulative impact

analysis. Both documents include a long list of mitigations and conservation measures that apply to the actions authorized by those plans.

Endangered Species Act (ESA). The methodology and impact thresholds for assessing effects to species listed under the Endangered Species Act differ from NEPA. Section 7 of the ESA has several effect determinations that include: no effect; may affect; not likely to adversely affect; and may affect, likely to adversely affect. Definitions of these terms may be found at: http://www.fws.gov/midwest/endangered/section7/s7process/s7glossary.html. Consultation with U.S. Fish and Wildlife is underway, and the results of consultation and effect determinations will be disclosed in this EA's decision document.

National Historic Preservation Act (NHPA). The National Historic Preservation Act (NHPA), as amended, is the principal legislative authority for managing cultural resources associated with NPS projects. Generally, Section 106 of the NHPA requires all federal agencies to consider the effects of their actions on cultural resources listed and/or determined eligible for listing in the National Register and to give the Advisory Council of Historic Preservation (ACHP) the opportunity to comment. Such resources are termed "historic properties." Agreement on mitigation of adverse effects on historic properties is reached through consultation with the State Historic Preservation Officer (SHPO); Tribal Historic Preservation Office, if applicable; and, as required, the ACHP and others. In addition, Section 110 of the NHPA requires federal agencies to take actions to minimize harm to historic properties that would be adversely affected by a federal undertaking. That section also charges federal agencies with establishing preservation programs for the identification, evaluation, and nomination of historic properties under their jurisdiction to the National Register.

The NHPA assessment of effect determinations also differ from NEPA effect descriptions. Federal actions have the potential to have no effect, no adverse effect or an adverse effect. Consultation with the California State Historic Preservation Office is underway, and the effects determination will be disclosed in this EA's decision document.

Cumulative Impact Scenario

CEQ regulations require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for all alternatives, including the No Action alternative. The past, present, or future projects or plans that could have a cumulative effect are listed in *Table 5-1* below. Other past actions such as mining of iron from the Eagle Mountain mine, mining on unpatented claims, and use of the Townsite are discussed in the *Chapter 4: Affected Environment*.

Table 5-1: Projects in the Cumulative Impact Scenario

Project	Description
Past	
Desert Sunlight Solar Farm	A 550-megawatt (MW) solar photovoltaic (PV) power plant completed in 2015, on Bureau of Land Management (BLM)-managed land east of the study area. It has three main components 1) the Solar Farm site, 2) a transmission line, and 3) a Southern California Edison (SCE) owned and operated substation, Red Bluff Substation. More information is available at: http://blm.gov/5sjd
Desert Harvest Solar Project	A 150 megawatt renewable energy project, adjacent to the Desert Sunlight Solar Farm. More information can be found at: http://www.blm.gov/ca/st/en/fo/palmsprings/Solar_Projects/Desert_Harvest_Solar_Project.html
Bureau of Land Management Solar Energy Program	BLM plan to address utility-scale solar energy development on BLM administered lands in Arizona, California, Colorado, Nevada, New Mexico, and Utah. The BLM has categorized lands that are excluded from utility-scale solar energy development (about 79 million acres [319,702 km2]) and has identified specific locations that are well suited for utility-scale production of solar energy (solar energy zones, or SEZs) where the BLM proposes to prioritize development. One of these areas, the Riverside East Solar Energy Zone (SEZ), is east of the study area. More information is available at: http://solareis.anl.gov/index.cfm
Present	
Designation of Mojave Trails National Monument, Sand to Snow National Monument, and Castle Mountains National Monument	On February 12, 2016, President Obama designated three new national monuments in southern California. The Mojave Trails NM spans 1.6 million acres of federal lands connecting the Mojave National Preserve with Joshua Tree National Park. It enhances biological landscape connectivity while preserving traditional uses such hunting and off-highway vehicle recreation. Sand to Snow NM is comprised 154,000-acres in the San Gorgonio Wilderness and the San Bernardino National Forest. It abuts the western boundary of Joshua Tree National Park. Castle Mountains NM consists of approximately 21,000 acres of federal land surrounded by the existing Mojave National Preserve and will be managed by the National Park Service. More information is available at: https://www.whitehouse.gov/briefing-room/presidential-actions/proclamations
Future	
Desert Renewable Energy Conservation Plan (DRECP)	~~BLM lands~~BLM managed landscape-scale renewable energy and conservation planning effort covering more than 22 million acres in the California desert. The Final DRECP was released to the public in September 2015, and the Record of Decision is expected in the spring. The DRECP identifies Development Focus Areas (DFA) that may accommodate up to 20,000 megawatts of power from renewable energy projects and associated transmission over the next 25 years. This plan changed the footprint of the Riverside SEZ so it has different boundaries and is slightly smaller. The DFA will be referred to as SEZ for this analysis. It also identified areas for inclusion in the National Landscape Conservation System (NLCS) (including National Conservation Lands, Wild and Scenic Rivers, and National Scenic and Historic Trails), Areas of Critical Environmental Concern (ACECs); Wildlife Allocations; Recreation Management Areas; Variance Process Lands; and Unallocated Lands. The National Conservation Lands will be managed using Conservation Management Actions (CMAs), a 1% disturbance cap, and the ACEC disturbance caps as a conservation delivery mechanism. The targeted disturbance levels were established as surrogates for thresholds of sensitivity for desert ecosystems, species, and cultural resources. The disturbance caps in the NCLS areas are 1.0%. In the ACECs, which through much of the LUPA are subunits of the larger NCLS, the disturbance caps range from 0.1% to 1.0%. More information is available at: http://drecp.org/
Eagle Mountain Pumped Storage Hydroelectric Project	The project, located within the study area, would pump water to and from the inactive mining pits during periods of low energy demand to generate and store electricity during periods of high demand. It consists of: 1) filling the 191 and 163 acre reservoirs with water 2) construction of an underground powerhouse with four reversible pump-turbine units each rated at 325 MW for a total generating capacity of 1,300 MW 3) construction of a 500kv transmission line, and 4) construction of underground water supply facilities. This project received a license for operation from the Federal Energy Regulatory Commission (FERC) in 2014. Eagle Crest Energy Company is currently fundraising and anticipates starting

Project	Description
	construction in 2018. More information is available at: http://eaglemountainenergy.net/
Right of Way for Eagle Mountain Eagle Mountain Pumped Storage Hydroelectric Project (and Environmental Assessment)	The Bureau of Land Management (BLM) is preparing a resource plan amendment with an associated EA for the Eagle Mountain Pumped Storage Hydroelectric Project transmission lines (located within the study area) and water supply lines. Public scoping occurred in November/December 2015. The environmental assessment will focus on the right-of-way for generator-tie [i.e., electrical lines connecting energy facilities to the larger electric grid]and water supply lines, and the Plan Amendment for the sections of the generator-tie line that do not fall within designated utility corridors. More information is available at: http://www.blm.gov/ca/st/en/info/newsroom/2015/december/eaglecreststorageproject.html
Wind farm project, LH Renewables wind farm project	An inactive application pending before BLM for a wind farm in the southern portion of the study area.

Impact Topics

A list of issues and concerns related to the proposed action were identified during National Park Service (NPS) internal scoping, the public scoping process and agency consultation. A wide range of issues and concerns for numerous resources were identified during the scoping process and are considered in this EA.

The Handbook for NPS Director's Order 12, *Conservation Planning, Environmental Impact Analysis, and Decision Making* (revised 2015) guides the NPS to create concise and focused EAs. NEPA documents are to identify pivotal, significant issues and focus discussions and analysis on those issues. The Director's Order clarifies that it is not necessary to carry an issue or impact topic forward for detailed analysis simply because a resource is affected. As a general rule, issues should be retained for consideration and discussed in detail if:

- The environmental impacts associated with the issue are central to the proposal or of critical importance;
- A detailed analysis of environmental impacts related to the issue is necessary to make a reasoned choice between alternatives;
- The environmental impacts associated with the issue are a big point of contention among the public or other agencies; or
- There are potentially significant impacts to resources associated with the issue.

The following topics are not critical to a decision on whether to adjust the Joshua Tree National Park boundary and therefore have been dismissed from a detailed analysis. A short analysis for each topic follows below.

Topics Not Carried Forward for Full Analysis

Air Quality

None of the boundary study alternatives would have an appreciable effect on air quality in the park or region. The primary sources of serious air pollution and haze problems at Joshua Tree National Park are outside of the park and generally unrelated to a park boundary adjustment. Air quality at Joshua Tree National Park is compromised by population growth and development (power plants, transportation, construction, etc.) of surrounding urban areas. These sources release dust, particulates, and smog that blow into the park and impact visibility. The Los Angeles metropolitan area, with a population of over 18 million, is the major contributor of ozone that reaches the park. This area is also a major contributor to elevated levels of nitrogen oxides, volatile organic compounds and other pollutants. These pollutants adversely impact both human health and sensitive vegetation and wildlife. The Environmental Protection Agency sets stringent levels of

protection for air quality, but Joshua Tree National Park consistently exceeds the ozone concentration levels (NPS 2014).

On a local level, the action alternatives could potentially reduce the amount of particulates that contribute to larger air quality and haze issues because the land would be protected from larger developments under NPS management. Emissions from heavy equipment or dust from construction would not be released and degrade air quality. If the mine was acquired and added to the boundary under Alternative D, polluting activities that occur in that area could cease, in the long term. Future management of the land and new uses would be determined by additional planning and NEPA processes, but future NPS projects or new uses in the area would consider and reduce any contributions to air pollution. Additional vehicles visiting the park would not have a noticeable effect on greenhouse gas emissions. This topic is not a point of contention among the public or other agencies, nor are there potentially significant impacts to resources associated with the issue. As such, it has been dismissed from further analysis.

Climate Change

The Council of Environmental Quality's 2014 draft guidance on climate change states that agencies should consider the following when addressing climate change: 1) potential effects from greenhouse gas (GHG emissions) and 2) implications of climate change for the environmental effects of a proposed action. Government actions occur incrementally and climate impacts are not attributable to any single action but are exacerbated by a series of smaller decisions. Diverse individual emission sources each make relatively small additions to global atmospheric GHG concentrations that collectively have a huge impact (CEQ 2014).

The action of moving the park boundary would not result in a noticeable change in the release of emissions or endanger public health or welfare. Any increase in visitation and vehicles could add additional cars and emissions to the Eagle Mountain area. However, this increase would be small for Alternatives B and C since access would continue to be limited. In Alternative D, if the Townsite became available to NPS, visitors could more easily access the study area from Desert Center and Interstate 10 which could result in additional cars and emissions. This is part of the long-term vision for the area and additional planning would be conducted in the future to determine the types of NPS and visitor activities, as well as the level of emissions.

Joshua Tree National Park is a participant in the NPS Climate Friendly Parks Program, which sets goals for greenhouse gas emission reductions. If the Eagle Mountain area was included within the boundary of the park, staff could assess the effects of climate change on the resources contained within the area, and the land would become subject to the park's climate action plan (NPS 2010b).

A boundary adjustment has the potential to benefit to atmospheric conditions. The land would be protected and preserved, and development would be limited. This would result in less ground disturbance and loss of vegetation resulting in less carbon release into the atmosphere. Researchers at Washington State University have found that desert soils take up an unexpectedly large amount of carbon as levels of carbon dioxide increase in the atmosphere. One 10-year experiment found that some areas of the Mojave Desert have elevated carbon-dioxide levels similar to those expected in 2050 (Evans et.al. 2014).

Increasing temperatures and changing precipitation patterns alter ecosystems, changing vegetation communities and habitats available for species. For example, global climate change and drought are potentially important long-term considerations with respect to recovery of the desert tortoise (USFWS 2011a). The conservation associated with the action

alternatives would protect habitat for wildlife species that are threatened and already stressed by climate change, and increase resiliency.

Energy Conservation

Although none of the action alternatives would affect the FERC licensed hydroelectric facility, the alternatives would remove approximately 11,000 acres or 11% of BLM land from possible use for renewable energy projects. This is a small area compared to the other land available in California for renewable energy projects and would result in only minimal effects on renewable energy production in California and the nation's ability to produce renewable energy.

If the DRECP Preferred Alternative is adopted, more than 84,000 acres of BLM managed desert land would be available for potential renewable energy projects within California. The BLM has approved nearly 20 solar, wind, and geothermal projects involving public lands in California between 2010 and 2014 (BLM 2015d). The BLM Solar Plan also designated a Riverside East Solar Energy Zone (SEZ) east of the study area and the eastern boundary of Joshua Tree National Park. This zone contains almost 150,000 acres of land that could be developed for solar energy projects; a solar project is authorized on almost 16,000 acres in this area as well (BLM 2012). The DRECP LUPA Preferred Alternative may alter Riverside East SEZ by establishing new ACEC designations on a small portion of the SEZ.

Environmental Justice

According to Presidential Executive Order 12898, *General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, fair treatment means that no group of people, including any racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. The goal of this "fair treatment" is not to shift risks among populations, but to identify potentially disproportionately high and adverse effects and identify alternatives that may mitigate these impacts (EPA 1995). Low-income populations are identified by comparing incomes with Bureau of the Census annual statistical poverty thresholds. For 2014, the poverty threshold for a family of four is approximately $25,000/year (US Census Bureau 2015b). The median income Riverside County, while lower than the median income in California, is not near the poverty threshold. Minority populations are also in Riverside County, totaling more than half of the county residents (Southern California Association of Governments 2015a, 2015b). Desert Center has a lower minority population than the broader county, but higher poverty levels (U.S Census Bureau 2015c).

A boundary adjustment would not create disproportionately high and/or adverse human health or environmental effects on minorities or low-income populations and communities. Joshua Tree National Park currently charges an entrance fee and collects fees for camping and these fees would automatically apply to new park areas. The park entrance fee is $20 for vehicles, or $10 for visitors arriving by motorcycle, bicycle or on foot. Currently, there is no entrance fee to access BLM-managed land. However, without access to the study area from Desert Center or Interstate 10, visitors would access the study area via Black Eagle Mine Road, as they do currently. This unimproved four-wheel drive road begins in Joshua Tree National Park, and users of this road already purchase a yearly pass or pay the daily park entrance fee. Further, if entrance and camping fees were to be charge in newly added areas, these expenses would apply to all visitors and would not disproportionately affect minorities or low income populations or communities.

The park staff and planning team actively solicited public participation as part of the planning process and gave equal consideration to input from all people regardless of age, race,

income status, or other socioeconomic or demographic factors. Adverse socioeconomic impacts from the action alternatives are not expected to be particularly noticeable because the action alternatives would not require the closure of any commercial operations in the study area. Moreover, there may be some financial benefits to adjacent communities associated with increased potential for additional recreational and educational opportunities in the areas (see the *Visitor Opportunities and Access* analysis below). Expansion of the park boundary in particular could result in economic benefits to Desert Center and the surrounding area.

Human Health and Safety

As stated in the *Feasibility* analysis in *Chapter 2*, and the *Affected Environment* in *Chapter 4*, a number of safety hazards and hazardous substances could be present within the study area, but the extent of any such hazards has not been fully documented. Risks to human health and safety associated with private property at the Eagle Mountain Mine are currently low because public access is prohibited and there is no known contamination emanating from the mine. Kaiser Eagle Mountain, LLC (KEM) is also required to comply with the reclamation plan for the Eagle Mountain Mine, which addresses hazardous conditions. In general, the reclamation plan would allow KEM to leave tailings piles and mining pits at their natural angle of repose and require the placement of safety berms around the pits. Most of the BLM land within the study area is undisturbed and unlikely to contain hazardous materials due to its remote location. The Department of Interior policy requires the assessment of real property for environmental liabilities prior to acquisition. Prior to accepting a transfer of lands, the NPS would conduct a Level 1 environmental site assessment that identifies potential or existing environmental liabilities associated with the underlying land and any physical improvements to the property. A Phase 2 "Focused Site Assessment" and additional studies would be completed if deemed necessary. If areas are contaminated, NPS would work to ensure that responsible parties undertake all necessary and appropriate removal and remedial actions.

The alternatives differ in terms of the amount of disturbed land and the extent of man-made hazards that could be added to the park. Alternatives B and C could bring abandoned mine lands into the park boundary, while Alternative D could also add private lands previously used for open pit mining to the park (if acquired through purchase or donation). Buildings in the Townsite, which could also be included in the park boundary under Alternative D, could contain hazardous materials that require remediation. Lands associated with the Eagle Mountain Mine are not considered abandoned mine lands.

None of the alternatives would create any new hazards. Any health and safety requirements associated with NPS management of properties added to the park that are above and beyond those required of responsible parties would be a component of any future project or planning that the NPS may undertake for the area. Further, this topic is not a point of contention among the public or other agencies, nor are there potentially significant impacts to resources associated with the issue.

Indian Trust Resources

Activities carried out on park lands may sometimes affect tribal trust resources. Trust resources are those natural resources reserved by or for Indian tribes through treaties, statutes, judicial decisions, and executive orders, which are protected by a fiduciary obligation on the part of the United States. In accordance with the government-to-government relationship and mutually established protocols, the NPS will interact directly with tribal governments regarding the potential impacts of proposed NPS activities on Indian tribes and trust resources. The NPS has determined that there are no Indian Trust Resources in the study area,

so this subject is not discussed further. However, Native American tribes have numerous deep associations with land within the study area; these are addressed in the Cultural Resources Affected Environment and Environmental Consequences sections.

Geology

Geology of the study area contributes to impressive desert viewsheds and is an important part of the significance of Joshua Tree National Park. Unique geological features (such as monzogranite boulder formations) found in Joshua Tree National Park are not expected to be as prevalent in the study area. Implementation of any action alternative would be beneficial to geology. The action alternatives would all provide protection for important geological resources and regulate activities that cause adverse effects. Protection and preservation of geologic resources would be a component of any future projects or planning that the NPS may undertake for the area. Research could be completed to determine presence of special geologic features, and resources would be protected.

Paleontology

The Paleontological Resources Preservation Act, signed into law as part of the Omnibus Public Lands Management Act of 2009, requires federal agencies to inventory, monitor, and protect paleontological resources on federal land. A change in the park boundary itself would not result in any subsurface disturbance, and as such, paleontological resources would not be affected by any of the action alternatives under consideration. Under NPS management, each of the alternatives would lead to enhanced protection of the fossil resources on federal land. NPS management would preserve and protect these resources to a greater degree than they are currently since rock/fossil collection and minor ground disturbances are permitted under BLM management. Further, protection of fossil resources would be considered and addressed as part of any future planning for projects on NPS managed land. The effects of a boundary adjustment on fossils are not controversial and there is little variation across the alternatives. A detailed analysis is not necessary to determine the effects of the different alternatives or to make a reasoned choice among alternatives. This topic has therefore been dismissed from further analysis.

Soundscapes

In Alternatives B and C, the park boundary would be closer to the Eagle Mountain Pumped Storage Hydroelectric Project, a potential noise source. Mining could occur where there are existing valid rights, which could generate some noise. Noise from potential renewable energy developments or large scale mining on BLM land would not be permitted if ~~BLM lands~~BLM managed lands are transferred to the NPS. If private lands in the study area are donated to or purchased with donated funds for the NPS, the soundscape would be better protected because noise-producing activities related to industrial and private uses at the mine site would be reduced. Future management of the land and new uses would be determined by additional planning and NEPA processes, so additional noise impacts association with future park activities cannot be fully assessed at this time. Any project undertaken by the NPS would contain mitigation to reduce noise sources and preserve the natural soundscape.

Vegetation and Special Status Vegetation Species

Vegetation, including species status species, could be preserved and protected under all of the action alternatives, with the degree of protection increased as more land is added to the park boundary. Under NPS management, research, monitoring, and restoration of plant communities could occur. Larger areas of protected land could help improve resilience of vegetation communities and as communities are impacted by the effects of climate change. There is a possibility that changes in visitor use could

result in the spread of non-native, invasive plants, but overall, the NPS would be better able to control invasive species through inventory and monitoring programs, confining visitor use to certain areas, and improved resilience. Any future projects on new NPS managed land (e.g., campgrounds) would consider effects to vegetation, and avoid, reduce or mitigate any adverse effects to the greatest extent possible. Assessment of effects to vegetation is therefore not critical to making a choice among alternatives, and not discussed further.

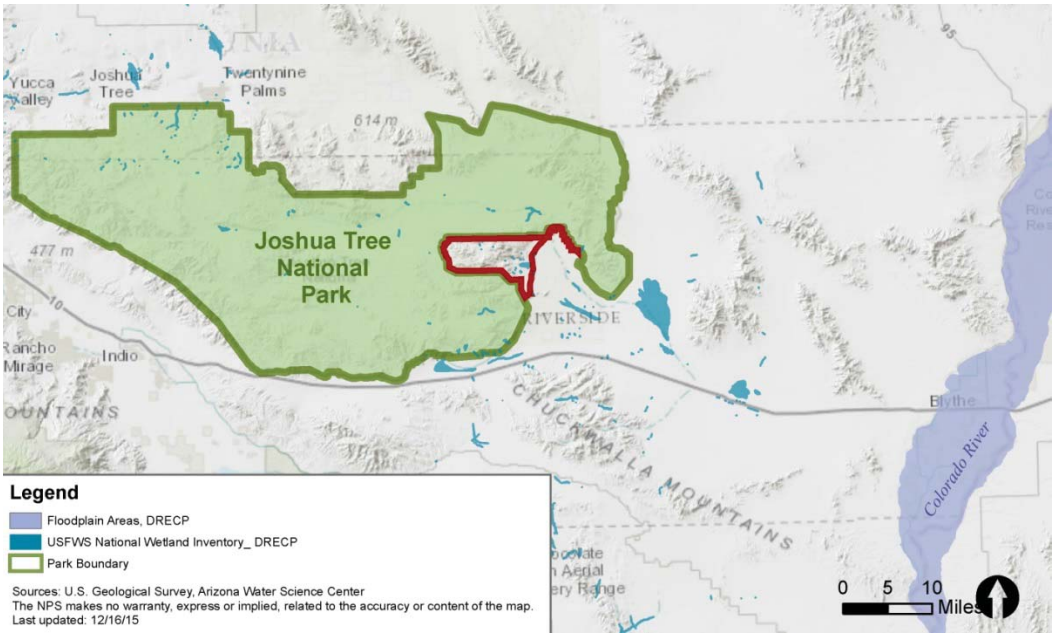
Wetlands and Floodplains

Section 404 of the Clean Water Act requires federal agencies to avoid, minimize and mitigate impacts to wetlands. Executive Order 11990, NPS *Management Policies 2006*, and Director's Order 77-1 (Wetland Protection), all direct the NPS to protect and preserve wetlands and wetland functions and values. These directives further state that impacts to wetlands will be avoided whenever there are practicable alternatives.

Executive Order 11988, Floodplain Management, requires an examination of impacts to floodplains and potential risk involved in placing facilities within floodplains. NPS *Management Policies 2006*, and Director's Order 77-2 (Floodplain Management Guideline) provides guidelines for proposals that occur in floodplains (NPS 2006, NPS 2003). None of the action alternatives call for the construction of facilities.

No wetlands are known to be present on the public lands in the study area. Some may exist near the settling ponds on private land, east of the Townsite which are depicted on the National Wetlands Inventory (see *Map 5-1, Wetlands and Floodplains*). Floodplains most likely exist adjacent to desert washes. The action alternatives would not have an effect on either wetlands or floodplains because the action alternatives do not propose site-specific development actions. The NPS would undertake additional planning for use of the area following a decision on the boundary study. If future site-specific development projects could impact wetlands or floodplains, an evaluation of impacts would be completed at that time.

Map 5-1: Wetlands and Floodplains



Wilderness

As stated in the Resource Description, there is no Congressionally-designated wilderness within the study area. Each action alternative has the potential to ensure that future uses do not impact adjacent wilderness. The NPS could work to protect values such as dark night skies, soundscape, and natural undeveloped land.

NPS *Management Policies 2006*, Chapter 6, Wilderness Preservation and Management, states that "all NPS lands will be evaluated for their eligibility for inclusion within the national wilderness preservation system." Additionally, lands that were originally assessed as ineligible for wilderness because of nonconforming or incompatible uses must be reevaluated if the nonconforming uses have been terminated or removed. For those lands that possess wilderness characteristics, no action would be permitted that could diminish their wilderness eligibility until a determination on eligibility has been made. NPS lands will be considered eligible for wilderness if there are at least 5,000 roadless acres or are of sufficient size to make practicable their preservation and use in an unimpaired condition, and if they possess the following characteristics (as identified in the Wilderness Act):

- The earth and its community of life are untrammeled by humans, where humans are visitors and do not remain.
- The area is undeveloped and retains its primeval character and influence without permanent improvements or human habitation.
- The area generally appears to have been affected primarily by the forces of nature, with the imprint of humans' work substantially unnoticeable.
- The area is protected and managed so as to preserve its natural conditions.
- The area offers outstanding opportunities for solitude or a primitive and unconfined type of recreation.

If areas are added to the national park, consideration of any new wilderness areas would require a separate wilderness planning effort with public involvement that would evaluate the area according to the characteristics described above. If areas were determined eligible for wilderness through further study, Congressional designation would be required to establish any new wilderness areas. More information on NPS wilderness planning can be found at http://www.National Parks.gov/policy/mp/chapter6.htm or www.wilderness.net. See *Map 2-4*: *Wilderness and Roadless Areas*.

Impact Topic Analysis

During the course of public scoping and early internal NPS planning, it became apparent that a number of issues were critical to the analysis of the boundary alternatives. They include: cultural resources, land use, mineral resources, park operations, recreational opportunities and access, socioeconomics, visual resources, water, and wildlife and special status wildlife species. The analysis for each subject follows below.

Mineral Resources

Impacts from Alternative A (No Action)

Alternative A would have no impacts on mineral resources in the study area because there would be no changes to the NPS/BLM boundary or in land management. Extractive mineral activities on BLM-managed lands would continue as they exist today except to the extent modified by BLM through the DRECP (See cumulative effects below). All active existing mining claims would be retained by current owners. There would be no change to the availability or opportunity for mineral extraction on state, local, or private land because there would be no changes to management or ownership of that land. The No Action alternative would also have no effect on future mining operations at the Eagle Mountain Mine because the private lands over which the Eagle Mountain Mining and Railroad company (EMMR) holds above ground mining rights (as per the mine's Interim Management Plan and agreement with KEM) on lands that would remain in private ownership.

Cumulative Effects of Alternative A

If the NPS boundary was not moved, mineral extraction would be permitted according to the proposed land use designations in the DRECP. The DRECP proposes to designate approximately 12,500 acres as national conservation lands (NCL). If these designations are adopted, there could be some new restrictions to mineral extraction. The DRECP's 1% disturbance cap in the western section of the study area could affect mineral extraction activities on existing unpatented mining claims. The disturbance cap is a limitation on ground-disturbing activities in NCLs and ACECs and is expressed as a percentage of the total BLM managed NCL and/or ACEC acreage, and cumulatively considers past, present, and future (proposed activity) disturbance. The DRECP states that much of the LUPA Decision Area is below target levels (i.e., caps) of ground disturbance, so the limitations are possible, but expected to be small. Development of new access roads to private parcels could also be limited due to the disturbance cap.

The DRECP, Chapter IV.15, states that "existing mineral rights and mining activities could be moderately to severely restricted by disturbance caps and other restrictions imposed within conservation lands." At this time, the degree of impact to mineral activities within the study area can only be assessed at the programmatic level because the DRECP did not provide details on where mineral exploration would be restricted. Further, the DRECP's adverse impacts analysis relates to the DRECP's 22 million acre planning area. It does not specifically address the boundary study area in detail. Site specific information would only become available when the BLM creates implementation plans for each NCL designation. The DRECP states that BLM would consider mining on NCL lands on a case-by-case, geographic specific area basis, in coordination with tribes, county(s) or other partners. It also states that active mining claims, including placer claims, lode claims, and mill sites, and existing authorized mineral and energy operations would be allowable within conservation areas, and unpatented mining claims would be maintained as existing rights. On 11,000 acres of DRECP land proposed as unallocated, minerals would still be available for mining according to applicable governing laws and regulations. According to the DRECP, unallocated Lands are BLM-administered lands that do not have an existing or proposed land allocation or designation.

The limitations resulting from the DRECP disturbance cap, possible development on unallocated land, and other renewable energy projects listed in *Table 5-1: Projects in the Cumulative Impact Scenario* could cumulatively reduce the amount of land available for mineral extraction.

All federal land in the three new national monuments is withdrawn from mineral entry (extraction) and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing. This would result in the inability to stake new mining claims on the 1.6 million acres of federal land designated as national monuments. There would be no cumulative impacts to valid existing rights.

Impacts from Alternative B

Impacts to new mining activities on federal land

Alternative B would have adverse impacts on the availability and opportunity for both large and small scale locatable mineral extraction from ~~BLM lands~~BLM managed lands in the study area because the transfer to NPS management would withdraw the lands from new mining. This withdrawal applies to casual use mining (rockhounding), exploration requiring claims and extraction of minerals for commercial use or sale. During public scoping, the NPS heard from visitors and members of mining clubs about the importance of mining in the Eagle Mountain area. This withdrawal would be negative for people wishing to stake new mining claims in the study area. For others, the withdrawal from new mining may be perceived as a benefit because the land, which is important habitat for plant and animal species, would be preserved and protected from the ground disturbance associated with larger scale mining.

The loss of the study area to new mining claims is somewhat tempered by the fact that existing unpatented mining rights would be retained (see *Impacts to existing claims on federal land* below) and the fact that there are extensive minerals in other areas of California (BLM 2015a). There are many areas are available for small scale mining on BLM or U.S. Forest Service land, within a one to three hour drive of the study area.

The withdrawal is not expected to significantly affect new commercial mining because there are many other high potential mineral areas within California (BLM 2015a). Further, no large scale mining operations have been proposed in the study area since Eagle Mountain Mine ceased full scale operations in 1983. And although pockets of high grade minerals could exist, metallic minerals in the study area are likely present in small volumes and low to medium grade (Powell et. al. 1984). A mineral potential report, as required by 43 CFR 2310.3-2 (b)(3)(iii) will be completed prior to implementation of a withdrawal. ~~is underway.~~

Further, the economic viability of any future commercial mining in the area is dependent on the global supply and demand for minerals as well as the cost to transport extracted materials off-site (BLM 1993, Sonoran Institute 2015). There are existing barriers to transportation in the Eagle Mountain area, as the railroad is in need of extensive repairs. In addition, there are several other active sources of iron in the U.S. Over 15 million metric tons of iron ore was produced in 2014 from mines in Michigan, Minnesota, and Utah (worth $5.1 billion) (Sonoran Institute 2015).

The presence of rare earth minerals in the study area is expected to be very limited (Powell et. al. 1984). Since the process of extracting rare earth minerals is labor and resource-intensive, mining them in the study area would likely be financially infeasible. The U.S.'s only rare earth mine in the Mojave Desert ceased mining in 2002 because of global economic factors; today, at least 96% of rare earth minerals are produced in China (DOE 2011). The availability of public lands for mineral exploration and mining has a much smaller influence on mining activity than these

regional and global economic forces (Sonoran Institute 2015).

Impacts to existing claims on federal land
There would minimal impacts to the six active unpatented mining claims because they would remain under BLM jurisdiction in Alternative B. Mining would continue in accordance with BLM regulations and the General Mining Law of 1872, as amended. Access to those unpatented claims across NPS-managed lands would require the claimants to obtain a permit from the NPS under 36 CFR Part 9, Subpart A (because access to mining claims is governed by those regulations). Prior to issuing an access permit, the NPS would assess the environmental impacts of the type and frequency of the requested access across park land. This is not a change from the existing situation, because claimants should currently be obtaining an NPS permit to cross the lands already managed by NPS.

There are another 460 unpatented mining and millsite claims owned by Kaiser Eagle Mountain, LLC in the study area ~~(KEM is a subsidiary of the Eagle Crest Energy Company)~~. Many of these claims are outside the footprint of the Eagle Mountain Pumped Storage Hydroelectric Project and would therefore be transferred to NPS under this Alternative B. Eagle Crest Energy Company which now has a substantial interest in KEM has stated that it does not intend to conduct mining operations on its unpatented mining claims. Eagle Crest has also discussed donating unpatented mining and millsite claims outside the Eagle Mountain Pumped Storage Hydroelectric Project area footprint to the NPS, when such lands are owned in fee. ~~Eagle Crest~~KEM has entered into a Mining Lease Agreement with EMMR under which EMMR is allowed to conduct above-ground mining for rock and aggregate on patented and unpatented claims within the study area. Most of the rock and aggregate is located on KEM's patented lands which are unaffected by Alternative B. In the unlikely event that ~~Eagle Cres~~KEM~~t~~ or EMMR wishes to conduct mining activities on unpatented claims outside the pumped storage ~~area~~ project footprint, they would need to comply with the regulations in 36 CFR Part 9, Subpart A, which require a plan of operations, similar to the plans of operation required by BLM. This would not constitute a substantial change because BLM has already approved a plan of operations for the Eagle Mountain Mine. Transfer of the lands underlying these claims would also trigger the requirement for a validity examination under the Mining in the Parks Act. The validity determination process could delay mining activities on these claims, and any claims that were invalid could not be mined.

Impacts to mining on private and state land
Similar to Alternative A, there would be no effect on current mining operations on patented mining claims at the Eagle Mountain Mine because patented lands would not be included in the expanded boundary under Alternative B. Therefore, EMMR could continue to conduct above ground mining activities (as per the mine's Interim Management Plan (2013) and agreement with KEM) on all patented claims. Most of the above ground rock material that EMMR is allowed to process under its lease with ~~Eagle Crest~~KEM is located on patented mining claims.

There would be no effect to the availability or opportunity for mineral extraction on state, local, or other private land because there would be no changes to management or ownership of this land.

Cumulative Effects of Alternative B
The DRECP, combined with Alternative B, could result in an additional loss of areas available for mineral extraction due to disturbance caps, the application of the Mining in the Parks Act, and other restrictions in nearby and adjacent conservation areas. The degree of cumulative impact in the study area is small from a state-wide perspective because there are many other areas available for mining in California and the ~~BLM lands~~BLM managed lands in the study

area outside of the Eagle Mountain Mine are expected to contain relatively small volumes of low to medium grade minerals (Powell et. al. 1984).

Past and future renewable energy projects, described in *Table 5-1: Projects in the Cumulative Impact Scenario* create more access restrictions, which result in fewer areas that are available for mining. The Eagle Mountain Pumped Storage Hydroelectric Project would further remove minerals from future extraction. The *Eagle Mountain Pumped Storage Hydroelectric Project Final Environmental Impact Statement (FEIS)* states the potential economic value of recoverable iron ore at Eagle Mountain Mine that would become inaccessible in the east and central pits once the project is constructed and operational would be between $8 and $13 billion. Private land would not be in the park boundary and therefore not subject to NPS regulations or restrictions.

Alternative B, combined with the restrictions in the three newly designed national monuments would have adverse cumulative impacts on the opportunity for both large and small scale locatable mineral extraction from federal land because the national monument land is withdrawn from mineral entry.

Impacts from Alternative C (Preferred Alternative)

Impacts to new mining activities on federal land

Similar to Alternative B, Alternative C would withdraw the lands from new mining claims. This is an adverse impact to mineral extraction, but considered insignificant for same reasons listed above for Alternative B. As described in the analysis for Alternative B, Alternative C is not expected to affect the overall supply of minerals available in the United States.

Impacts on active claims on federal land

Compared to Alternative B, Alternative C would also result in additional adverse impacts to mineral extraction because the six unpatented mining claims that would remain under BLM management under Alternative B would be transferred to NPS management under Alternative C. A transfer of the lands containing these unpatented mining claims to NPS management would negatively impact mineral extraction activities on these unpatented mining claims because these claims have never undergone a validity determination. Although mineral extraction is ongoing, and has historically occurred on these claims, they have never undergone a validity examination and therefore it is undetermined -whether they actually constitute valid existing rights~~,~~.
If they were transferred to NPS management, a validity examination would need to be conducted before NPS approval of the mining claimants' plans of operation, as required by the Mining in the Parks Act and its implementing NPS regulations (36 C.F.R. § 9, Subpart A-Mining and Mining Claims).

Validity examinations are conducted by "mineral examiners" who are certified by the BLM in accordance with BLM Manual 3895 and in this circumstance, the costs of the examination would be borne by the National Park Service. To be considered a valid existing right, a mining claim must, among other requirements, contain a discovery of a valuable deposit of a mineral, subject to location under the Mining Law of 1872. For a millsite to be valid, the millsite must be on lands that are non-mineral in character and be in use for mining, milling, or other mining related purposes. Validity examinations are complex analyses of geology, economic factors, and mineralization, and can take several years to complete. The NPS may grant temporary approval (under 36 C.F.R. § 9.10(g)) to continue mining these pre-existing claims until the results of the validity examination are known. Such temporary approval would reduce impact on the mining claimants.

~~This process might deter, or be too onerous or financially infeasible, for miners.~~ If the claims were found valid, claimants would also need to comply with the regulations in 36 CFR Part 9, Subpart A, which includes submission and NPS approval of a plan of operations. Conversely, if the validity examination were to indicate that the claims are not valid, BLM would initiate a "contest" of the claims in an administrative forum. Following the administrative process, the result might be appealed in court. If, at the conclusion of these processes, the claims were adjudicated as not valid, then the mining activities on those claims would cease. ~~The impact of the Mining in the Parks Act may be slightly lessened due to the NPS regulatory provision allow the claimants to receive temporary NPS approval to continue developing the minerals on their claims during the validity exam and plan review/decision process~~

Alternatively, miners could seek to sell their claims to a third party for fair market value that would then donate the property to the NPS. Other nearby areas, such as the Dale District north of the park, could continue to be available for mining, dependent on the site-specific DRECP implementation plans. Alternative C would have the same impacts on the 460 unpatented mining claims owned by KEM that are outside the pump storage project footprint as discussed for Alternative B.

Impacts to mining on private and state land

Similar to Alternative A, there would be no effect on current mining operations on patented mining claims at the Eagle Mountain Mine if the land remained in private ownership. ~~because patented lands would not be included in the expanded boundary under Alternative C.~~ In this circumstance,

~~t~~There would be no effect to the availability or opportunity for mineral development on local land or private lands within Eagle Mountain Pumped Storage Hydroelectric Project footprint because there would be no changes to management or ownership of these areas. However, if the private lands were donated to the NPS, there could be some changes to mining. In this scenario, Eagle Mountain Mining and Railroad, LLC (EMMR) would still be able to harvest iron ore or aggregate per its current agreement with Kaiser Eagle Mountain, LLC. However, such activities could continue to occur only in compliance with NPS regulations.

Mineral extraction could also be affected on approximately 2,230 acres of privately-owned lands and approximately 325 acres of state lands west of the Eagle Mountain Pumped Storage Hydroelectric Project footprint, once these lands are transferred to NPS management. A future transfer of KEM's privately owned lands west of the Eagle Mountain Pumped Storage Hydroelectric Project footprint area would only occur following KEM's donation of those lands to the NPS. A transfer of state lands could result from a voluntary exchange of lands between the State and the U.S. The impact from a cessation of mining on these 2,555 acres is expected to be small because no large scale commercial mining activity occurs now and there are currently no plans to conduct future large scale mining activities. If private lands are not transferred to the NPS, they would remain in private ownership and any future mineral extraction would be unaffected by a boundary expansion.

As in Alternative B, there would be no effect to the availability or opportunity for mineral extraction on other state, local, or other private land because there would be no changes to management or ownership of this land.

Cumulative Effects of Alternative C

The cumulative effects of Alternative C are similar to Alternative B. The degree of adverse cumulative impact would be slightly greater for Alternative C because of the additional impacts to the owners of the six unpatented mining claims and the impacts to mineral extraction on patented and unpatented claims outside the Eagle Mountain Pumped Storage Hydroelectric Project area footprint owned by KEM.

Alternative B, combined with the restrictions in the three newly designed national monuments would have adverse cumulative impacts on the opportunity for both large and small scale locatable mineral extraction from federal land because the national monument land is withdrawn from mineral entry. The national monuments are subject to valid existing rights. Since Castle Mountains National Monument would be managed by the National Park Service, owners of unpatented claims would be required to undergo a validity determination and plan of operations in accordance with the Mining in the Parks Act. Mining could only occur if the claims were found valid. The impact of the Mining in the Parks Act may be slightly lessened due to the NPS regulatory provision that would allow claimants to receive temporary NPS approval to continue developing the minerals on their claims during the validity exam and plan review/decision process. Application of the Mining in the Parks Act to these claims would constitute an adverse cumulative impact, further deterring the mining of these unpatented claims.

Impacts from Alternative D

The impacts from Alternative D would be similar to Alternative C in the short-term and potentially for many years. Mining conducted by EMMR or ~~Eagle Crest~~ ~~Kaiser Eagle Mountain LLC~~ KEM on patented and unpatented claims within the Eagle Mountain Pumped Storage Hydroelectric Project footprint could continue for decades if either company deems such activities to be worthwhile. Mining activities would only cease on lands within the FERC licensed area following donation to, or a third party sale and donation to, the NPS. However, if ~~Eagle Crest~~ KEM deemed these lands more valuable for mineral development, ~~Eagle Crest~~ KEM could seek to retain them for that use.

The effects of this alternative on the development of mineral resources on lands within the Eagle Mountain Pumped Storage Hydroelectric Project footprint will depend on factors within Eagle Crest/KEM's business discretion and on FERC's future licensing decisions. This alternative however presents a long term vision for Joshua Tree National Park. Over time and assuming that mining activities on these lands are no longer economical, more land would eventually become unavailable for mineral development as state, local or other private lands are transferred to NPS either through donation or purchase and donation from third parties.

Cumulative Effects of Alternative D

The adverse cumulative effects of Alternative D are similar to Alternative C, except that there would be even less land available for mineral extraction over the long term. This would result in fewer areas available for mineral extraction, but would preserve remaining minerals in-place within the study area in perpetuity.

Water Resources

Impacts from Alternative A (No Action)

There could be a negative effect on groundwater supply with the No Action alternative. If BLM were to continue as the land management agency, renewable energy projects that require water could be approved for the study area under current land management classifications. These projects could require water from the Chuckwalla Valley aquifer. The drawdown of the Chuckwalla Valley aquifer has the potential to affect the water resources of the Pinto aquifer because the two aquifers are hydraulically connected (Woodward 1998). The extent of the impact would depend on the water needs of the particular project(s). The location of the groundwater basins is shown on *Map 4-4: Water Resources.*

If renewable energy projects were approved in the future, they could potentially impact both the quantity and timing of groundwater recharge. Impacts from operations and maintenance include potential groundwater contamination, interference with recharge, depletion of groundwater levels and storage, and other water quality impacts. Improper handling

or containment of hazardous materials could disperse contaminants to soil and impact groundwater quality. Installation of water supply wells can adversely affect groundwater levels and storage volumes. Improperly abandoned wells could also create adverse impacts.

Surface waters are limited to occasional flow in ephemeral streams/creeks. Impacts to other perennial rivers and stream would be small due to the absence of a hydrological connection. However, construction activities such as grading, vegetation clearing for equipment and operations, and temporary or permanent changes to the landscape could increase the likelihood of flooding or adverse drainage effects.

Water use associated with the Townsite would continue more or less at current levels. Most current uses are nominal and include the school (with 20 students and a small faculty) and a few private homes.

Cumulative Effects of Alternative A

All development projects listed in *Table 5-1: Projects in Cumulative Impact Scenario* have the potential to create additional adverse cumulative impacts to regional water resources. For example, the proposed Eagle Mountain Pumped Storage Hydroelectric Project could create adverse cumulative impacts~~, particularly~~ if other water-intensive projects within the same area/groundwater basin were to be constructed while it was in operation. The Riverside East Solar Energy Zone (SEZ) and Development Focus Areas proposed in the DRECP LUPA are within the Chuckwalla Valley water basin *(*see *Map 4-4: Water Resources*). Existing and proposed development in the SEZ, together with the water requirements for the Eagle Mountain Pumped Storage Hydroelectric Project, the existing Desert Sunlight solar farm, nearby agriculture, and other future renewable energy projects could all further deplete groundwater supplies in the Chuckwalla basin and potentially the Pinto Valley Groundwater Basin. Excessive use of groundwater in one water basin could have adverse effects on adjacent areas.

Once in operation, the Eagle Mountain Pumped Storage Hydroelectric Project would be the largest water user in the study area, with its annual make-up water use would be about 25-30%of total water use in the Valley~~.~~. Water to initially fill the reservoirs would total 24,200 acre-feet [AF] (almost eight billion gallons) and annual water to replace the water lost through evaporation or seepage would be 2,300 acre feet (750 million gallons) (FERC 2012). The *Eagle Mountain Pumped Storage Hydroelectric Project Final Environmental Impact Statement (FEIS)* states that ~~this water~~ the water supply for the Project is from three private wells drawing from the Chuckwalla Aquifer.~~would either be pumped from groundwater within the Chuckwalla Valley basin or will be purchased from outside the basin and transferred to the project through the Colorado River Aqueduct~~. The NPS has encouraged the Eagle Crest Energy Company to line the reservoirs to reduce the amount of water lost through seepage. If not mitigated through testing and planning, ~~U~~use of the Eagle Mountain Mine for the Eagle Mountain Pumped Storage Hydroelectric Project has the potential to have adverse effects associated with acid mine drainage, resulting in impacts to water quality, particularly if the reservoirs are not lined. The FERC license for the project includes several provisions, specifically Articles 401, 402, and 405 to protect against acid mine drainage, seepage, and protection of the Chuckwalla Valley groundwater. ~~potential for acid mine drainage at the Eagle Mountain Pumped Storage Hydroelectric Project has not yet been determined and lining of the reservoirs is not a requirement of the FERC license.~~ The license requirements can be reviewed at http://eaglemountainenergy.net/. The FEIS also contains 21 mitigation measures aimed at protecting water, and protecting the supply of groundwater, such as groundwater monitoring. For full list of mitigations and analysis, see the

Eagle Mountain Pumped Storage Hydroelectric Project FEIS, Section 3.3.2.2.

The State Water Resources Control Board issued a Final Water Quality Certification (WQC) for the Eagle Mountain Pumped Storage Hydroelectric Project, and was the lead state agency on an Environmental Impact Report for the project (required for a WQC). The Final WQC estimated that the Chuckwalla Valley Groundwater Basin contains between 9 and 15 million acre-feet AF of recoverable water and determined that the Chuckwalla aquifer was not at risk. The WQC concluded that the project "would extract approximately 110,000 acre feet of groundwater over the 50-year FERC license, which is estimated to be less than one percent of the total amount of recoverable groundwater in storage in the Chuckwalla Valley Groundwater Basin (SWQCB 2013)."

If the DRECP LUPA's NCL and ACEC designations are approved, there would be a beneficial effect on water resources since renewable energy development would be prohibited in conservation areas. All other allowable land uses in these areas must also be compatible with protecting resources, particularly water. Renewable energy projects could still be approved for the unallocated land, and those projects could also negatively affect the supply and recharge of groundwater.

Designation of conservation areas in the DRECP and from the establishment of the new national monuments would offset some of these adverse cumulative impacts to water resources. This is due to the fact that water intensive development would be curtailed or prohibited in these areas.

Impacts from Alternative B

Under Alternative B, groundwater resources would be preserved to a greater degree than the No Action alternative. In this scenario, the majority of the study area would be protected from uses that could draw down the groundwater in the Pinto Valley and Chuckwalla Valley aquifers. Future NPS management of over 22,000 acres of former BLM land would prioritize water conservation. Impacts to water resources from the Townsite would remain the same as under Alternative A, but overall, Alternative B would result in increased benefits to water resources due to the conservation of additional land. Implementation of Alternative B would also protect the surface water quality of ephemeral streams on land transferred from BLM to NPS, since there would be less ground disturbance and construction following transfer. Water use on private, state, and local land would continue as it does currently.

Cumulative Effects of Alternative B

Cumulative impacts would be similar to those described under No Action. However, the degree of adverse impact would be slightly less under Alternative B, because there would be no other large scale water consumptive development projects allowed on the 22,000 acres of BLM that would be transferred to NPS under this alternative. As such, Alternative B would benefit water resources associated with 22,000 acres of BLM land more than the No Action alternative.

Impacts from Alternative C (Preferred Alternative)

Effects from Alternative C would be the similar to Alternative B, except that the benefits would be slighter greater. This increased benefit is due to the additional 2,230 acres of privately owned lands and 325 acres of State lands west of the FERC license that would be transferred to NPS. Under NPS management, water use would be reduced and overall, water resources would be protected.

Cumulative Effects of Alternative C

Cumulative impacts would be similar those described under No Action. However, the degree of adverse impact would be slightly less than Alternative B, because additional land would be protected under NPS management and intensive water use would not be permitted in on an additional 3,000 acres.

Impacts from Alternative D

If fully implemented, Alternative D would result in the greatest benefits to water resources over time because the entire study area would be managed by the NPS and large scale industrial uses would have ceased. Eventually, as private land is brought into the boundary, industrial water uses would be eliminated which would ultimately reduce withdrawals from the underlying aquifers. Of particular importance, if the Eagle Mountain Pumped Storage Hydroelectric Project area is donated or purchased for the NPS, it could be decommissioned and the associated yearly water withdrawals from the aquifers would cease. Any future NPS development of land in the study area would seek to reduce or avoid adverse impacts to water resources. The NPS would ensure that water conservation is included in all future facility and park planning.

Cumulative Effects of Alternative D

Over the long-term, implementation of Alternative D could offset the impacts to regional groundwater resources. If at some point in the future the Eagle Mountain Pumped Storage Hydroelectric Project is decommissioned, NPS could seek to acquire the property. If these areas are acquired, the potential for water usage would be greatly reduced throughout the entire study area. Water would still be withdrawn for projects outside of the NPS boundary (such as nearby developments in the SEZ and Development Focus Area; Desert Sunlight solar farm; or nearby agriculture), but the highest withdrawal from the Chuckwalla Valley aquifer, associated with the pump storage project, would end. Additional cumulative benefits would occur to water resources due to the increased areas protected for resource conservation associated with the three new national monuments. Overall, Alternative D would result in beneficial cumulative effects to water resources.

Wildlife and Special Status Wildlife Species

Impacts from Alternative A (No Action)

Under the No Action Alternative, management of wildlife species would continue as it does today. BLM provides protection of special status species in accordance with the Endangered Species Act and other federal laws and regulations. However, adverse impacts to wildlife and special status wildlife species are still possible. Under BLM management, large scale mining or alternative energy projects, including the ~~Eagle Crest~~ Eagle Mountain Pumped Storage Hydroelectric Project, could be approved and constructed within the study area. Any construction or ongoing industrial operations has the potential for numerous, long term, severe, adverse impacts to individual animals, health of wildlife populations and the possibility for landscape-scale conservation. General impacts from this type of development and activity follow below.

Construction, operation, and access to renewable energy projects could remove and/or alter vegetation and result in the direct mortality of wildlife species and/or their habitat. Ground disturbance could also impact burrows for burrowing owls, badger and/or fox. Removal of vegetation would degrade habitat. Construction undermines soil stability, creating erosion and affecting the rate that water reaches plants; this could affect the ability of an area to support native plant and wildlife species (BLM 2015a). The construction of paved and unpaved roads associated with development can be particularly harmful to wildlife. Roads contribute both to direct morality of wildlife species from road kill and more indirect effects from the presence of traffic and introduction of invasive species (Brooks et. al. 2005, Lovich and Ennen 2011). Direct impacts by vehicles are a known cause of mortality for desert tortoise (Boarman and Sazaki 2006). Roads and the presence of renewable energy operations fragment habitat. Habitat fragmentation would adversely impact

the species through limiting dispersal and genetic exchange, limiting movement within a population for wide-ranging species, and limiting or impairing the ability of the species to respond to the effects of climate change (Groom et al. 2006).

Structures associated with renewable energy projects could be hazardous to wildlife, particularly birds. Collisions with wind turbines, power towers, or other such structures cause death of bird and bat species when individuals strike the equipment. Several sensitive raptor species, including prairie falcon and golden eagle, could be harmed if there are active nests near construction sites; loud staccato noises and vehicle noise could disrupt nesting and/or cause nest abandonment. Transmission lines associated with development pose another set of detrimental, adverse, and long-term impacts to wildlife. Birds could collide with the lines and become injured or electrocuted. Lines and poles create perches from which ravens prey on other birds' eggs and nestlings, small and medium size mammals, amphibians, and reptiles (BLM 2015a).

These developments also contribute to population isolation, edge effects, species invasions, and alteration or degradation of ecological processes Noise, night lighting and glare could disorient nocturnal wildlife or may attract or repel certain species (Longcore and Rich 2004). The noise may deter bighorn sheep from using the area. Increased road traffic through desert tortoise habitat will increase chances of road mortalities from vehicles. Predator avoidance behavior may cause wildlife to suffer stress and reduced feeding as they attempt to avoid humans and manmade objects. The presence of humans and pets serve as a vector for the spread of disease. Use of rodenticides and other pesticides could result in direct adverse effects to wildlife species (BLM 2015a).

In addition to injury and death of individual species, development or mining through the middle of the boundary study area could have potentially significant adverse impacts to wildlife movement across the landscape and result in habitat fragmentation effects, population isolation, inbreeding, genetic drift, and increase the likelihood of local extinctions. This is especially applicable to bighorn sheep and desert tortoise, two species with habitat corridors located in the study area (see *Map 2-2: Desert Tortoise Habitat Connectivity*). More effects to bighorn sheep and tortoises, which are vulnerable to habitat fragmentation, are discussed below.

Bighorn Sheep (*Ovis canadensis nelsoni*). Any construction, ongoing energy operation or mining through the study area has the potential to create serious impacts to this iconic species if not properly designed or mitigated. –There are two groups of bighorn that inhabit the park and use the study area, particularly near the privately owned parcels associated with the Eagle Mountain Mine; this area serves as a biological corridor for the two groups (see *Map 2-3: Bighorn Sheep Habitat Connectivity*). Several recent and important peer reviewed studies found that the two groups of bighorn do indeed mix and that there is a movement corridor that traverses the private lands (Bleich et al. 2009, Creech et al. ~~in~~ 2014~~press~~, Divine 1998, Epps et al. 2007, Epps et al. 2010). These populations are relatively unique because there is not only genetic evidence of successful and important dispersal between the herds (Epps et al. 2007; Creech et al. ~~in press~~2014) but there is also additional radio-telemetry data that supports movement through that area (Divine and Douglas 1996; Divine 1998). Connectivity based on the least resistance models of Epps et al. (2007) and telemetry data (Divine and Douglas 1996, Divine 1998) show that the primary route of movement between these areas is located through the areas where the reservoirs would be located for the Eagle Mountain Pumped Storage Hydroelectric Project. In addition, research has

shown that desert bighorn will avoid a wide range of roads in this region, from freeways to off-road vehicle trails (Bleich et al. 2009). Scientific studies have shown that ~~B~~barriers (i.e., development projects, mines, highways) can eliminate gene flow between populations, which can have devastating harmful effects and potentially contribute to extinction of these local populations. However, the Eagle Mountain Pumped Storage Hydroelectric Project Final Environmental Impact Statement concluded that the project would not create a migratory barrier and the effects of on Nelson's bighorn sheep populations would be minor and temporary~~.~~

Bighorn sheep currently move through the study area, and appear to have adapted to the heavily disturbed mined landscape. This landscape has been mostly inactive since the open pit mining operations ceased in 1983, although ~~with very little human presence, noise, vehicles or other human-induced disturbances for over 30 years.~~ the mine has been staffed and patrolled since then, and utilized for a range of activities including mining and processing of mine tailings, military and law enforcement firearms training, filming for movies and advertisements, and site investigations for the previously proposed landfill. ~~.~~It is unknown how bighorn sheep would adapt to new roads, operations, construction or mining in the area; they could acclimate to the noise, alter foraging and/or breeding behavior, or abandon the area altogether, which would have the serious impacts noted above.

Desert Tortoise (*Gopherus agassizii*). The vast majority of threats to the desert tortoise or its habitat are associated with human land uses (USFWS 2011a). Alternative A would allow the greatest potential for future development projects or other disturbances in the study area, compared to the action alternatives. Construction in the area would most likely involve the use of heavy machinery, road grading, vegetation removal, and vehicle traffic. These activities have the potential to destroy desert tortoise burrows, increasing stress to individuals or potentially causing death if burrows are occupied at the time of collapse. Tortoises often seek shelter under vegetation or other structures that provide shade from the desert sun. Clearing vegetation, where tortoises shelter from the sun, could harm them. Tortoises lying under construction equipment could also be killed.

There could also be substantial permanent impacts to tortoises on a local and regional level. These impacts are due to the fact that some of the unallocated land contains valuable and important tortoise habitat (Nussear 2009). This habitat provides one of the only connections of desert tortoise habitat between the highly protected habitats in Joshua Tree National Park and Chuckwalla Bench ACEC found to the southeast.

The U.S. Fish and Wildlife Service Recovery Revised Recovery Plan for the Mojave Population of the Desert Tortoise lists five threats to the desert tortoise, the majority of which would be relevant in Alternative A (USFWS 2011a). The construction and operation of renewable energy projects could destroy or modify tortoises' habitat and range. Large areas of development could result in permanent habitat loss, roads and Off-highway vehicle (OHV) use fragment and degrade habitat. Toxins that pollute the environment from these developments or mining may compromise the immune system of desert tortoises or otherwise detrimentally affect physiological function, rendering them more susceptible to disease (USFWS 2011a). Predation is another threat, and the common raven is the most highly visible predator of small tortoises. Raven distribution is associated with human encroachment into the desert and may be partially responsible for the current threatened status (Tracy et al. 2004). Tortoises may also be preyed upon by gulls. Raven, gulls, and other predators would be attracted to the reservoirs at the pumped storage facility, and

increased human presence results in more garbage, an attractant to those birds. Energy and mineral development and extraction also pose a significant threat to desert tortoises through habitat loss and fragmentation (USFWS 2011a).

Cumulative Effects of Alternative A

When combined with Alternative A, the DRECP could result in both beneficial and adverse effects to wildlife and special status wildlife. If the NPS did not move the boundary, land use designations prescribed in the DRECP would apply to the study area (when approved). In this scenario, approximately 5,870 acres of NCL and ACEC land would be managed for preservation and conservation and provide benefits to wildlife habitat. Disturbance caps and other measures would help to protect the desert tortoise and other wildlife from long and short-term adverse impacts. Beneficial effects would occur from the expanded Chuckwalla Valley ACEC, which protects other high quality tortoise habitat (Nussear 2009) and portions of bighorn sheep biological movement corridors. However, the DRECP designates approximately 11,000 acres of land in the study area as unallocated where alternative energy or large scale mining could be approved. This could result in the direct serious adverse impacts described above. Additionally, development or mining on this block of unallocated land could create further damage to high quality tortoise habitat (see *Map 2-2: Desert Tortoise Habitat Connectivity*) and barriers for desert bighorn sheep that travel between the Eagle Mountains and Coxcomb Mountains. General impacts are summarized below. Specifics impacts to wildlife, as well as conservation measures, can be found in the DRECP, IV.07, *Biological Resources*.

The cumulative effects to bighorn sheep from Eagle Mountain Pumped Storage Hydroelectric Project, when combined with the DRECP and Alternative A could be substantial, long-term and adverse impacts because the any new energy project developed on unallocated land could interfere with the ~~project site intersects the~~ species' biological movement corridor. The Eagle Mountain Pumped Storage Hydroelectric Project Final Environmental Impact Statement concluded that "effects of project construction activities would not create a migratory barrier" and the effects of construction would be minor and temporary" because the mountains would be untouched and equipment would be underground. But if other industrial developments or large scale mining on the unallocated BLM-managed land do not mitigate for disturbances to bighorn sheep, then additional substantial adverse impacts could occur to local populations.

The presence of reservoirs and brine ponds at the Eagle Mountain Pumped Storage Hydroelectric Project could be harmful or fatal to birds and other wildlife. Open water could also attract ravens who prey on young desert tortoise and other small wildlife. These reservoirs have steep edges, and could be tempting sources of water for local wildlife. Most wildlife that use this habitat in the Eagle Mountains are adapted to traversing similar steep and rugged areas; however, attempts to access the waterline could prove hazardous and may cause injury or mortality to some individuals. Eagle Crest's proposed construction of exclusionary fencing is intended to mitigate this impact. The FEIS contains other mitigations for wildlife as well.

All of the renewable energy projects in *Table 5-1: Projects in the Cumulative Impact Scenario,* when combined with Alternative A, could result in regional adverse effects to wildlife. Wildlife habitat is lost as more of the desert is developed for renewable energy projects. These projects further fragment habitat which reduces biodiversity and creates additional barriers to wildlife movement. If core habitat areas become islands with no connecting landscape to allow movement of species, they will not be able to continue to support the animals that currently reside within them. Any new construction has the potential to harm or kill wildlife, but when

too many animals in a local area are harmed, entire populations could be extirpated. Human development and garbage encroaching into undisturbed desert would cause an increase in ravens, resulting in increased predation and death to desert tortoise and other wildlife. Wildlife become less resilient against climate change and other encroachments when their populations are consistently compromised by continued stress and loss of habitat. Wildlife populations would become weaker due to lack of high quality, connected habitat.

There are no cumulative impacts associated with the designation of the three new national monuments since they would preserve habitat for desert tortoises, bighorn sheep and other wildlife.

Impacts from Alternative B

By removing the opportunities for future renewable energy development (other than the pump storage project) or large scale mining, Alternative B protects wildlife species, their habitat, and the landscape-scale values of much of the Eagle Mountain region. Protecting large areas of land and precluding future development on 22,135 acres of BLM land in the study area ensures that a greater area of contiguous habitat and existing wildlife movement corridors outside the pump storage project footprint would be preserved compared to Alternative A. This applies not only to the desert tortoise but also to bighorn sheep, golden eagles, bats, and other wildlife. No new barriers to bighorn sheep movement would occur since additional development would be prohibited. Bighorn sheep corridors would still be impeded by the Eagle Mountain Pumped Storage Hydroelectric Project, and all of the impacts associated with the pumped storage facility described under Alternative A would still persist. However, all of the land surrounding that project would be protected and preserved under NPS management. The connectivity and genetic diversity of bighorn sheep herds would start to improve since the NPS could undertake actions to improve the health of bighorn sheep populations.

Alternative B protects more areas of desert tortoise habitat from potential development projects. As a result, population declines from effects related to development may be reduced. Additional protected land would contribute to more extensive, contiguous home ranges that are essential for the survival of the species. Habitat connectivity would be maintained, providing frequent contact between tortoises to maintain genetic diversity. This, along with maintaining sufficient ecological heterogeneity within and among populations, is an integral factor to the viability of tortoise populations and better allows them to adapt to changes in the environment over time (USFWS 2011). Specifically, strengthening tortoise populations helps to create resilience against climate change. Global climate change is likely to affect the prospects for the long-term conservation of the desert tortoise and presents a serious risk; frequent and/or prolonged droughts with an increase in temperature could reduce forage. Intact wildlife habitat improves biodiversity, reduces vectors of invasive species, protects genetic exchange in populations, and contributes to healthier wildlife populations.

With fewer potential construction projects or mining on the 22,135 acres of land that would be transferred to NPS under this alternative, there would be fewer individual and population level adverse effects to animals. Less ground disturbance would result in less mortality to individuals. More natural quiet would allow natural wildlife behaviors to continue without interruption. Fewer roads would improve habitat connectivity and reduce mortality of animals on roads. Less infrastructure overall would protect birds, bats, and other wildlife. More protected open space would be preserved for golden eagles that require large areas of land for nesting and foraging. Eagle nesting is largely dependent on the amount of prey that can be found, and a more protected, healthier

ecosystem would create healthier populations of prey species as well (Wildlife Research Institute 2011). All of these protections and reduction in development would result in substantial benefits to all wildlife.

Landscape-scale conservation of the area could begin to take shape. This additional protection and conservation in this alternative would result in beneficial effects to wildlife and special status species. Future uses for the area that are consistent with national park policies would be determined through subsequent planning, and activities would be evaluated for their impacts to wildlife. Visitor use would be accommodated within the context of protecting important wildlife resources.

Cumulative Effects of Alternative B

With Alternative B, 22,135 acres of BLM land in the study area would transfer to NPS management. BLM land use designations proposed in the DRECP LUPA would not apply to these lands. Outside the study area, to the east, the expanded Chuckwalla Valley ACEC would provide additional habitat protection. This protected land, combined with the resource protection associated with NPS management under Alternative B, would result in beneficial cumulative effects to wildlife, specifically desert tortoise and bighorn sheep. DRECP NCL and ACEC designations outside the study area would further benefit regional wildlife populations by protecting habitat across the region. The land protection in Alternative B would help to offset adverse wildlife impacts that could result from construction in the nearby Development Focus Area or SEZ.

Impacts from the Eagle Mountain Pumped Storage Hydroelectric Project, even with the additional land protection in Alternative B, could have substantial, long-term and adverse impacts because the project site intersects the biological movement corridor for bighorn sheep. Cumulative impacts to other wildlife would be similar to Alternative A cumulative effects. More information on wildlife impacts can be found in the ~~Eagle Crest~~FERC FEIS, Section 3.3.3 and 3.3.4. Mitigation and monitoring plans, particularly for proposed Eagle Mountain Pumped Storage Hydroelectric Project, are intended to reduce the level of effects to wildlife species.

The other renewable energy projects listed in *Table 5-1: Projects in Cumulative Impact Scenario*, when combined with the DRECP and the Eagle Mountain Pumped Storage Hydroelectric Project could result in regional adverse effects to wildlife. These cumulative impacts are the same as listed above for Alternative A.

Designation of the new national monuments would offset some of these adverse cumulative impacts to wildlife because additional habitat and individual species would be protected from development. The combination of Alternative B and the designation of The Mojave Trails National Monument would greatly improve biological landscape connectivity in the desert.

Impacts from Alternative C (Preferred Alternative)

The environmental effect of Alternative C would be the similar to Alternative B, except that there would be an even greater level of landscape-scale habitat protection due to the additional 3,000 acres of land that would be protected.

Cumulative Effects of Alternative C

The cumulative impacts of Alternative C are similar to Alternative B, except that the degree of impact would be reduced since additional habitat would be protected.

Impacts from Alternative D

If fully implemented, Alternative D would accomplish the highest level of landscape-scale habitat conservation in the study area. The effects would generally be the same as Alternative B, but the advantages to wildlife would be far greater and more beneficial over the long term. Once private property is willingly

sold or donated to the park, some barriers, structures and incompatible uses that impede wildlife movement may be considered for removal. Lands once used for mining could be reclaimed and restored for conservation value. The current external threats to wildlife would be removed. There would be a contiguous NPS ownership and consistent management of the land, which would allow for maximum protection of wildlife and habitat. Movement corridors that are essential to wildlife survival would be restored. Biological diversity of the area would be improved and maintained.

Because there would be less disruption to essential ecosystem functions, and wildlife would have open access to move among and within natural habitat, wildlife species would become stronger and more sustainable. They would become more resilient against climate change, flood, disease and other environmental disturbances. Iconic species such as bighorn sheep and desert tortoise would benefit directly from the protection of this area and their populations could flourish in the long term. With the ability to travel ~~migrate and move~~ freely, bighorn sheep and desert tortoise would have greater genetic diversity; as such, the likelihood of local extinctions would be greatly reduced. Wildlife populations would be healthy and self-sustaining, and ecological connectivity would be restored on a large scale. Significant benefits to wildlife would result from the protection of the land and full restoration of the park boundary.

Cumulative Effects of Alternative D

Cumulative effects from the DRECP would be similar to that of Alternative B and C. However, Alternative D provides the greatest opportunity for landscape-scale conservation, which is consistent with the overall goal of the DRECP. The positive effects of land conservation and habitat protection associated with both Alternative D and the DRECP would ameliorate some of the adverse impacts to park wildlife created by the surrounding development and fragmentation (See Alternative A cumulative effects). Designation of new national monuments increases the area for wildlife protection. The existence of contiguous, protected habitat would have long-term beneficial cumulative effects to wildlife.

Cultural Resources

Impacts from Alternative A (No Action)

Under the No Action Alternative, protection and management of cultural resources would continue as it does today. BLM would protect cultural resources and mitigate adverse effects in accordance with laws and regulations such as the National Historic Preservation Act and Archeological Resources Protection Act. However, adverse effects are still possible. Under BLM management, a variety of activities and potential projects could result in long-term, adverse impacts to the many cultural resources in the study area.

Prehistoric and historic archeological resources (lithics, ceramics, rock piles, etc.) could be disturbed, removed or destroyed by OHV use, mining, or rockhounding. Some of these resources may have potential for listing on the National Register of Historic Places. Artifacts could be lost forever or lose their significance due to damage; once damaged, they cannot be recovered.

Renewable energy projects or larger scale mining operations may not be able to avoid unearthing or destruction to all or some of a buried artifact, prehistoric or historic trail, petroglyph, or resource associated with the Desert Training Center. Ground-disturbing activities (e.g., grading and digging) have the highest potential for disturbing cultural resources; however, pedestrian and vehicular traffic and the indirect impacts of earth-moving activities (e.g., soil erosion) may also have an adverse effect. Visual, olfactory, and auditory changes can affect the integrity of setting and feeling associated with cultural resources. Activities could also isolate the resource or alter

of the character of its setting, introduce visual, auditory, olfactory, or atmospheric elements that are out of character with the resource, or alter its setting completely; this would be a major impact, especially if the resource's setting is important to its significance for the National Register of Historic Places. There is potential that recreational use, mining, or construction projects could limit access or permanently destroy traditional resource collecting areas, ceremonial sites, landscape features, cemeteries, shrines or trails (BLM 2015a). Impacts to buried resources could still occur, if present, on privately owned land.

Cumulative Effects of Alternative A

Alternative A has the potential to combine with numerous adverse cumulative impacts, both locally and regionally. Archeological resources in the study area and surrounding areas have likely been adversely impacted from past mining and construction-related disturbance, visitor use, vandalism, erosion, or natural processes. The combination of impacts from the Desert Sunlight Solar Farm, the No Action Alternative, and future renewable energy projects identified in *Table 5-1: Projects in the Cumulative Impact Scenario* could result in a cumulative regional loss of important cultural resources. Resources can lose their historic context as more areas are disturbed and developed. Also, damage or destruction of an incremental number of resources may also have long-term cumulative effects on the regional availability of cultural resources.

If the NPS boundary was not adjusted, designations in the DRECP would apply once approved. This could result in both beneficial and adverse cumulative effects. This plan would create additional protection for cultural resources in within approximately 12,500 acres of federal lands since NLC and ACEC areas would be managed for preservation and conservation. The proposed 1% disturbance cap for ground disturbing activities on NLC and ACEC land would assist with this conservation goal. More information on implementation of the disturbance cap can be found in the DRECP, Chapter II, pages 3.19 through 23). The overall conservation strategy, which defines specific actions to reduce impacts, is outlined in Chapter II, Section II.3.4. No adverse impacts would occur from construction projects within these designated areas, but some damage could still occur from recreational use. Actions on unallocated land, such as permitted large energy projects or large scale mining, must comply with the National Historic Preservation Act (NHPA), but may still result in serious adverse impacts to cultural resources, similar to the effects stated above.

The ~~Eagle Crest Energy Company~~Kaiser Eagle Mountain LLC owns the Eagle Mountain Mine and Townsite and would repurpose the area as needed for their operations. They could reuse, rehabilitate and stabilize some of the Townsite structures and remove those that are deteriorating and beyond repair. The *Federal Energy Regulatory Commission Final Environmental Impact Statement (FEIS)* for the Eagle Mountain Pumped Storage Hydroelectric Project contains a number of measures to protect cultural resources. Eagle Crest would prepare a work plan to document the Eagle Mountain Mine, Townsite and associated railroad, and other cultural resources on their property, including the potential for a historic district. The FERC license for the Eagle Mountain Eagle Mountain Pumped Storage Hydroelectric Project states that, "the licensee shall implement the Programmatic Agreement Between the Federal Energy Regulatory Commission and the State of California Historic Preservation Officer (SHPO) for Managing Historic Properties that May be Affected by issuing of a License to Eagle Crest Energy, for the Eagle Mountain Pumped Storage Hydroelectric Project in Riverside County." As part of this agreement, Eagle Crest would consult with the California State Historic SHPO, BLM, and FERC to evaluate National Register of Historic Places eligibility, and eligible resources

would be avoided or impacts mitigated in consultation with the California SHPO. Eagle Crest would work with any interested tribes to identify potential traditional cultural property (TCP) within their project site, document and evaluate such properties and to resolve adverse effects on TCPs that are eligible for the National Register of Historic Places. Further details of the cultural resource analysis and mitigations can be found in the FEIS, *3.3.6.2 Environmental Effects, Effects of Project Operations on Cultural Resources*.

The designation of three new national monuments and the DRECP NLC and ACEC land use designations would increase protection of cultural resources in the desert, and may offset the loss of cultural resources associated with mining activities and renewable energy projects.

Impacts from Alternative B

In Alternative B, cultural resources would be preserved to a greater extent than Alternative A because 22,135 acres of BLM land would be transferred to NPS and protected from construction impacts. Once these lands are transferred, new mining claims would be prohibited under the Mining in the Parks Act. Six unpatented mining claims would remain in BLM management; as such there could be impacts to cultural resources as described above for Alternative A. There are no mining claims on the BLM land proposed for transfer to NPS under this alternative.

Any effects on cultural resources from future NPS projects to enhance visitor use of the area would be assessed, avoided, or mitigated in accordance with federal laws and regulations and NPS cultural resource management policies.

On all NPS managed land, visitor use would be more controlled. For example, hiking, OHV use, camping or other activities could be confined to designated routes, established trails or previously disturbed areas. This would be advantageous to cultural resources because there would be less ground disturbance and NPS would most likely assign these uses to areas of low cultural sensitivity. NPS would work with tribes to identify, document, and evaluate potential TCPs and would work with Native Americans who have interests and associations with the land to allow them to use the land for desired traditional uses.

Under NPS administration, there is an opportunity to provide interpretation and education of the numerous layers of history of the area, such as from traditional uses, mining, the Eagle Mountain Mine and Townsite, World War II desert training activities, settlement of the desert, the rebuilding of America post World War II and others.

Alternative B would not result in any changes to the management of cultural resources on private or local land.

Cumulative Effects of Alternative B

Because 22,135 acres of BLM land would be transferred to the NPS under this alternative, the DRECP's land use designations would not apply to the study area, but DRECP NCL and ACEC designations adjacent to the expanded park boundary would go into effect if that plan is approved. This would result in a cumulative benefit to the protection of cultural resources because NCL and ACEC designations limit ground disturbance.

The potential projects in the adjacent Riverside SEZ, combined with the projects listed in *Table 5-1: Projects in Cumulative Impact Scenario*, are similar to the cumulative effects for Alternative A. However, the degree of adverse cumulative impact would be slightly less because more land would be protected under NPS management. The designation of the new national monuments and other DRECP NCL and ACEC land designations in the desert region would increase protection of cultural resources in desert areas, and may offset the loss of cultural resources due to development and mining in areas open to these uses.

Impacts from Alternative C (Preferred Alternative)
The impacts from Alternative C are the similar to Alternative B, except that the beneficial effects would be greater due to the additional land that would be transferred to NPS and managed for preservation of cultural resources values.

Cumulative Effects of Alternative C
The cumulative impacts of Alternative C are similar to Alternative B, except that the degree of impact would be reduced since additional land would be protected.

Impacts from Alternative D
The effects of Alternative D would be similar to Alternative C, but could result in a wider range of benefits for cultural resources over the long term. As more land is added to the park boundary and managed under NPS cultural resource management policies, the degree of resource preservation and interpretation increases. If the Townsite is added to the boundary, numerous possibilities exist to restore historic structures and the cultural landscape. Beneficial effects would result from the possible adaptive re-use of structures associated with the Eagle Mountain Mine and Townsite, many of which are now vacant and have experienced some level of deterioration. NPS could also provide opportunities for the public to access and learn about cultural resources, including the history of the Eagle Mountain Mine.

Public access and recreation is currently not permitted on private land. The alternative presents a long-term vision whereby private land in the study area would eventually be transferred to NPS by donation or purchased with private funds and donated. As land is included in the NPS boundary, these formerly inaccessible areas would become more available for visitor use and to Native American groups with traditional ties to the area and its resources. With increasing visitor use opportunities, there is a possibility that impacts to cultural resources could increase. However, this effect is expected to be small, especially since the visitor use would be carefully managed to avoid adverse impacts to cultural resources.

Cumulative Effects of Alternative D
The cumulative effect of Alternative D would be the same as Alternative C.

Visitor Opportunities and Access

Impacts from Alternative A (No Action)
In Alternative A, visitor use within the study area would continue as is does today under BLM management. This would result in a range of beneficial and adverse impacts, depending on the perspective of the current or future user. Activities such as gold panning, rockhounding, mining, hunting, target shooting, off highway vehicle use, and backcountry camping and events (with pets) could continue. This would be a benefit to current users of the study area, particularly local mining clubs. The area's significant resources would remain largely un-interpreted, and no additional visitor programs or opportunities would be offered. This would be an adverse effect to those who expressed desires for expanded recreation and interpretation of the study area.

Visitor use would continue to be sparse given the remoteness of the area and there would be a lack of public access points from the east. Public access to state, local, and privately owned lands would generally remain restricted with the exception of access along public roads. For visitors who currently recreate in the remote western portion of the study area, maintaining this status quo would be perceived as a positive outcome. This same lack of access could also be perceived by others as an adverse effect to recreation because the Eagle Mountain area has been generally inaccessible to most visitors for decades.

Under BLM management, the possibility remains that development projects or large scale mining could occur within the study area. This has the potential for numerous short-term and

long-term adverse impacts to recreation. Long-term impacts could be attributed to the visibility of the structures (such as turbines, solar fields, or active mining in open pits or otherwise), operational impacts (noise, odors, night lighting etc.) and direct loss of land for recreational activities. Short-term adverse impacts could be generated during construction activities. These developments would degrade the scenic resources associated with remote recreational experiences, including hunting, mining, and backcountry exploration. Some long-term beneficial effects could also result from these developments as the construction of associated access and service roads could provide improved access opportunities for those recreating in the remote backcountry.

Cumulative Effects from Alternative A

Because the park boundary would not be expanded under this alternative, land use designations prescribed in the DRECP would apply to the study area if that DRECP is adopted. The NCL and ACEC areas proposed in the DRECP would be managed to protect ecological, historic, cultural, scenic, scientific, and recreation resources and values, so recreational activities that are consistent with the conservation designations would generally not be affected. Allowable recreational uses would be identified in future BLM implementation plans for each NCL and ACEC, so extent of impacts to the status quo cannot be determined at this time. Future implementation planning would determine which uses are compatible with protection of the nationally significant values identified for these areas. It is possible that some current uses, such as mining operations, routes and methods of travel, may be curtailed due to conservation goals and/or disturbance caps. Special recreation permits may no longer be issued in certain sensitive areas. Some types of recreation, such as hiking, stargazing, and other solitary or primitive recreation could be enhanced. Similar to the discussion above, these changes could be adverse or beneficial, depending on the user.

The Eagle Mountain Pumped Storage Hydroelectric Project, when combined with the no action alternative, would not change the level of visitor access to the area because access to ~~Eagle Crest's~~ private lands within the ~~hydroelectroelectric~~ pumped storage hydroelectric facility would continue to be restricted in and around the project site. However, additional noise and new visual intrusions associated with the construction and operation of the pump storage project would adversely impact recreational experiences compared to existing conditions.

The cumulative effects of the designation of the three new national monuments to visitor use would vary according to users' preferences. For example, visitors who enjoy OHV use would perceive the designation of the NPS-managed Castle Monument National Monument as an adverse impact because all off road vehicle use is prohibited (except for emergency or authorized administrative purposes). The Mojave Trails National Monument limits motorized vehicle use to existing trails/roads. Visitors who enjoy mining would be impacted because the new monuments prohibit mining (except for existing valid rights). Visitors who enjoy hiking, photography, birding, etc. would perceive the additional protection afforded by the national monument designations as a benefit.

The creation of new renewable energy developments in the Riverside East Solar Energy Zone or Development Focus Area have the potential to degrade the night sky or release dust or other particulate matter which could create haze and negatively affect scenic views. These plans and projects, when combined with the No Action alternative, have the potential for a range of adverse cumulative impacts.

Impacts from Alternative B

In Alternative B, the lands added to the park would continue be available for a range of visitor use opportunities, however, the types of uses and extent of access would change because of

the differing NPS and BLM regulations and policies. All recreational uses on NPS lands must be compatible with conservation values; uses that result in unacceptable impacts on park resources would not be allowed. The extent of allowable recreational opportunities would be determined in future NPS implementation planning. This environmental assessment provides readers with a range of potential changes to the area.

Visitor uses that would be prohibited by law or policy on lands added to the park under this alternative include:

- new mining claims (as per Mining in the Parks Act of 1976)
- off-leash dogs and dogs in areas outside of existing paved or unpaved roads
- hunting and/or shooting (permitted in some parks, but is not permitted in Joshua Tree National Park)
- rockhounding in any area except on unpatented mining claims determined to be valid (Note: this alternative would not include six unpatented mining claims owned by casual use miners in the expanded boundary)
- collecting plants, rocks, fossils or artifacts without a special use or research permit
- nighttime wildlife spotlighting
- feeding of wildlife
- Off-highway vehicle (OHV) use, except in designated areas
- use of metal detectors
- use of drones

The prohibition on new mining claims and OHV use would create adverse impacts to those users that currently conduct mining activities in the Eagle Mountain area. The impact is lessened by the numerous other nearby areas to mine on BLM and U.S Forest Service land such that are within a one to three drive from Eagle Mountain area.

During public scoping, the NPS heard from many of visitors about the importance of mining for personal enjoyment, family tradition, and enjoyment of desert solitude. To accommodate this visitor use, Alternative B excludes six unpatented placer claims from the park boundary and retains them under BLM management. The NPS would allow access to these claims in accordance with NPS regulations. Mining would be permitted only within the boundaries of the claim and no new areas could be mined. The ability to continue mining on these claims in accordance with the General Mining Law of 1872 and BLM regulations would lessen the degree of adverse impact on casual use miners. A validity exam under the Mining in the Parks Act would not be required under this Alternative (in contrast to Alternatives C and D). However, to obtain access to claims over land that would be included in the expanded park boundary, miners would need to obtain a permit from the NPS to cross park property (in accordance with 36 CFR Part 1.6, Permits and 36 CFR Part 5, Commercial and Private Operations).

The NPS also heard from visitors who enjoy bringing their dogs into the backcountry, and using OHVs to camp in remote areas free of charge. Visitors could still camp with dogs provided that their dogs remain on-leash dogs in accordance with NPS regulations at 36 CFR 2.15(a)(2) and the Superintendent's Compendium[4]. Backcountry camping could continue and designated OHV corridors could be established through a park-led rulemaking process. Special events and large group gatherings would be subject to NPS special event

[4]The Superintendent's Compendium is a compilation of designations, closures, permit requirements, and other restrictions made by the superintendent, in addition to what is contained in Title 36 of the Code of Federal Regulations and other applicable federal statutes and regulations. If new land is included within the park boundary, the compendium would likely be updated to include new park lands.

permitting requirements which may place some constraints on large group events in order to protect resource values. Within the mining claim areas, mining clubs and other visitors would most likely be able to hold events, camp overnight or have pets off-leash, since the area would remain under BLM management.

If added to the national park, the area could be subject to an entrance fee. The park also has the authority to collect fees for camping. Access to the study area is via Black Eagle Mine Road, which is accessible only through existing Joshua Tree National Park entrance stations. Visitors entering the national park for recreational purposes now pay a $20 entrance fee per vehicle for a 7-day permit or purchase an annual pass for $80 (or a $10 pass for seniors; passes are free for military and disabled U.S. residents). The possible addition of an entrance fee would be noticeable, but not a major deterrent to access. Most Eagle Mountain visitors access the area through the existing Joshua Tree National Park entrance station and currently either purchase a yearly pass or pay the $20 entrance fee. The majority of visitor access would continue along this route via Black Eagle Mine Road.

These adverse effects are tempered by the numerous benefits to recreation and access that could be achieved on NPS managed land. The larger protected area provides even more areas that are preserved for recreation. As previously mentioned, future recreational opportunities would be determined through future NPS planning, but many opportunities exist to expand uses beyond rock climbing, viewing Joshua trees and hiking. Backcountry camping may be permitted, as well as OHV use in more confined areas. There are larger, undeveloped, wild areas that are available for solitude and primitive recreation. Large conserved areas would improve wildlife habitat connectivity and could increase wildlife viewing opportunities. There could be opportunities for new and existing activities such as hiking, photography, camping, a trail network with scenic overlooks, or access to dark night skies and astronomy programs. NPS policies that prohibit collecting plants, rocks, fossils or artifacts (without a permit) allow the resources to remain for others to enjoy. The park could provide trail connections to the Cottonwood area of the park. Communities south of the park would have improved access to the recreational opportunities in the park and overall access to the eastern part of the park could be improved. The educational opportunities with Alternative B are considerable. The history of the Eagle Mountain area has many stories to be interpreted, such as mining, the pre- and modern history, industrialist Henry J. Kaiser, natural history, and native wildlife. All of these opportunities have the potential to create greater benefits to local, regional, and international visitors than Alternative A.

Cumulative Effects of Alternative B

The nearby Desert Sunlight Solar Farm and potential renewable energy projects in the DRECP Development Focus Area and SEZ have very little potential to affect recreation and access in the study area. These developments would be at least 10 miles from the study area. It is unlikely they would be visible although it is possible that construction could cause short-term impacts from dust or noise.

The DRECP NLCS designations could create limitations on certain types of recreational use on BLM land in the California desert. These restrictions, combined with Alternative B, could reduce some types of recreation (i.e., mining or OHV use). This could have long-term adverse cumulative impacts on these recreational pursuits.

The Eagle Mountain Pumped Storage Hydroelectric Project and associated right-of-way would adversely affect the visitor experience. Although access to this private land is currently restricted, the visibility, noise and activity associated with this industrial facility would affect the experiences of visitors who

prefer to recreate in remote and quiet areas of the desert.

In the Mojave Trails National Monument motorized vehicle use is permitted only on existing trails/roads. In the NPS-managed Castle Monument National Monument, all off road vehicle use is prohibited, except for emergency or authorized administrative purposes. The new OHV restrictions associated with these national monuments would result in adverse cumulative impacts since OHV would be restricted on lands added to the park boundary under this alternative.

Impacts from Alternative C (Preferred Alternative)

The environmental effects from Alternative C would be similar to Alternative B, although there are some differences. Adding an additional 3,000 acres to the boundary would create more a contiguous area for recreation and interpretation, which would benefit visitors and recreational opportunities.

However, there would be adverse impacts to members of local mining clubs because six unpatented mining claims would be included within the park boundary. Claim owners would need to ~~complete~~ pass a validity exam ~~and~~, apply for an approved plan of operation to work their claim, and receive a permit from NPS for access. See Mineral Resources section above for additional information.

Mining clubs and other visitors would be unable to recreate with off-leash pets on mining claim areas and the other lands added to the park under this alternative. Visitors could still camp with dogs provided that their dogs remain on-leash dogs in accordance with NPS regulations at 36 CFR 2.15(a)(2) and the Superintendent's Compendium. Special events and large group gatherings would be subject to NPS special event permitting requirements which may place some constraints on large group events in order to protect resource values. (Backcountry camping could continue and designated OHV corridors could be established through a park-led rulemaking process. In the short-term, before any rulemaking process occurs, there would result in a negative visitor experience. The visitor experience could improve in the long-term if the park undergoes rulemaking to expand visitor opportunities.

Cumulative Effects of Alternative C

Cumulative effects of Alternative C are the similar to Alternative B. The projects listed in *Table 5-1: Projects in Cumulative Impact Scenario* would have no impacts on recreation in the study area, but the regional impacts described for Alternative B could occur. The DRECP restrictions could limit some types of recreation, which could further reduce visitor opportunities in the vicinity of the study area. Alternative C would have more recreational restrictions than Alternative B because the six unpatented mining claims would be included in the park boundary and certain activities could be limited under NPS management (see above). Further, restrictions in visitor use would be greater than Alternative C because they apply to an additional 3,000 acres of land. Therefore the cumulative effects of Alternative C would be greater Alternative B

The DRECP NLCS designations could create limitations on recreational use on BLM land in the California desert. These restrictions, combined with Alternative C, could reduce some types of visitor uses (i.e., mining or OHV use). This could result in long-term adverse cumulative impacts on these recreational pursuits.

Impacts from Alternative D

The effects of Alternative D are very similar to Alternative C, but over the long term, Alternative D would provide a much greater area for recreational activities if fully implemented. This alternative presents a long term vision for the park under which all private lands within the study area would be transferred to NPS following the cessation of industrial uses. If this were to occur, there would be a reduction of

uses that are incompatible with public enjoyment of the area's recreational and interpretive values. If the Townsite is included in the park boundary, or co-managed through partnerships, and the park could be accessed from Desert Center, recreational and educational opportunities could be even greater than Alternatives B and C. The Townsite could be used for visitor education and potential recreational concession services. More interpretive opportunities would become accessible, and could include topics such as renewable energy and climate change, and interpretation of the mine and Townsite through general public access and guided tours where safe. No adverse effects, other than those disclosed for Alternative C, would occur.

Cumulative Effects of Alternative D

Long-term, regional, adverse cumulative impacts would be similar as described for Alternative C. The combination of a full boundary restoration, DRECP conservation designations and the addition of three national monuments would cumulatively increase the areas in the California desert that are available for recreation. This would be a beneficial effect for local, regional, national, and international visitors.

Visual Resources

Impacts from Alternative A (No Action)

Under current BLM management, 80% of the study area is undeveloped, but new renewable energy projects or other large scale development projects could be constructed under this No Action alternative. Construction would adversely affect views from park wilderness areas as well as views from within the study area. Mining could result in additional ground disturbance, tailings piles, open pits or infrastructure. If permitted by the BLM, solar, wind, and geothermal energy development, and transmission requirements (rights-of-way, major transmission lines, generator tie-lines [i.e., electrical lines connecting energy facilities to the larger electric grid], and substations) could result in adverse visual impacts. The impact of a given project would depend upon the individual project, including energy type, technologies used, site layout, scale, location, impact minimization strategies employed, timing and degree of disturbance or complexity of the facilities (BLM 2015a). There would be short-term adverse impacts from construction, and long-term impacts from removal of vegetation, new roads, new transmission lines, additional night lighting, glare, visible windblown dust clouds, visible exhaust plumes and the physical presence of project elements (solar energy collectors, wind turbines, geothermal generating plants, and support facilities). The BLM would work to mitigate adverse visual impacts from any permitted renewable energy developments. These impacts could negatively affect views from inside and outside the study area.

Cumulative Effects of Alternative A

Renewable energy projects listed in *Table 5-1: Projects in Cumulative Impact Scenario* have the potential to create adverse cumulative effects to visual resources particularly when combined with the No Action alternative. There could be short-term impacts visual impacts if construction were to occur at the same time, and long-term adverse effects if multiple projects were constructed in the DRECP LUPA's unallocated areas. Renewable energy projects in the Riverside SEZ or DRECP LUPA Development Focus Area could contribute cumulative adverse effects to the dark night sky due to the addition of night lighting, or to skies in general due to dust or other airborne particulates.

Effects to scenic resources on private land would occur, and views of the private lands from nearby park and ~~BLM lands~~BLM managed lands would change. The FERC license for the pumped storage facility requires a visual resource management plan. Eagle Crest Energy Company may reuse some portions of the Townsite. Although not discussed in the FEIS, the rehabilitation of some structures, and

demolition of the deteriorating ones may improve the scenic character of the Townsite, and transform the uninhabited town into a more active area. The buildings, infrastructure, open pits, tailing piles and other physical aspects of the former Eagle Mountain Mine would continue to impact the scenic character of the study area. Vegetation is slowly returning to the large tailings piles on site; over time, some of the disturbed areas may become revegetated through natural succession. However, EMMR's above ground mining rights could result in disturbance to tailings piles and the vegetation that has started to regrow. The Eagle Mountain Pumped Storage Hydroelectric Project would reuse portions of the Eagle Mountain mine site, but would also add new, large-scale visual elements to the viewshed, such as reservoirs, dams, power lines, water conveyances, fences, brine ponds, graded and revegetated landscapes, and buildings. Since this project is not yet in place, both adverse short-term construction impacts and adverse long-term impacts would result from the addition of the above-mentioned elements.

Only new facilities that are consistent with the care and management any existing flood control, utility, pipeline, or telecommunications facilities may be constructed within the new national monuments. The restriction on the development of large industrial developments could offset some adverse effects of Alternative A and provide some cumulative benefits to the visual resources of the regional area.

Impacts from Alternative B

Scenic viewsheds would be preserved and protected to a much greater degree than Alternative A since renewable energy projects and new mining activity would not occur on lands added to the park boundary under this alternative. Approximately 80% of the study area would be managed in accordance with NPS Management Policies, which prioritizes natural, cultural, and visitor resource protection. Uses incompatible with park preservation and public enjoyment would not be permitted, which would preserve the scenic character of the lands added to the park. This would result in positive effects to scenic views from both within and outside of the study area. This alternative would also result in beneficial impacts on night sky values, and it would reduce dust and the introduction of particulates that interfere with daytime views of the desert.

Cumulative Effects of Alternative B

Cumulative impacts could result from the Eagle Mountain Pumped Storage Hydroelectric Project and any future projects constructed in the DRECP Development Focus Area or Riverside SEZ. The adverse effects of industrial projects such as these on visual resources in the study area and nearby region would detract from the beneficial effects of Alternative B. Refer to the cumulative effect analysis for Alternative A for a description of effects.

Only new facilities that are consistent with the care and management any existing flood control, utility, pipeline, or telecommunications facilities may be constructed within the new national monuments. The restriction on the development of large industrial developments in these areas, combined with the development restrictions in Alternative B would result in a cumulative regional benefit to visual resources.

Impacts from Alternative C (Preferred Alternative)

Impacts from Alternative C would be similar to Alternative B, except that with the benefits would be somewhat greater given that Alternative C would preserve the viewshed on an additional 3,000 acres of land.

Cumulative Effects of Alternative C

Cumulative effects are similar to Alternative B, but there would be some additional benefits to the scenic viewshed because additional land would be protected from uses that are incompatible with resource preservation.

Impacts from Alternative D

The effects of Alternative D would generally be the same as for Alternatives B and C for many years. However, over the long term, as private lands are donated to or acquired with donated funds for the park, the entire study area could begin to be managed for the preservation of scenic resources. The NPS could choose to actively restore some disturbed areas or allow restoration to occur through natural ecological succession. Some potential actions could include the removal of transmission lines or other unneeded infrastructure, installation of night sky friendly lighting, and habitat restoration. As such, there is the potential for substantial benefits to the viewshed of the entire study area and as well as views of the area land currently within the Joshua Tree National Park boundary.

It is expected that the acquisition of the Townsite and the other private properties included in this alternative would not occur for quite some time. There is a wide range of possibilities for eventual use of the Townsite. The range of effects to the scenic character of the area would vary, depending on the future plans for the Townsite. Stabilization of vacant and unused structures within the Townsite would have different effects on visual resources than restoration of structures and landscape features to accommodate new uses.

Cumulative Effects of Alternative D

Alternative D represents a long term vision for the area. In the short-term, the cumulative effects of Alternative D would be similar to those for Alternative C.

If the Eagle Mountain Pumped Storage Hydroelectric Project is decommissioned in the future and the lands are transferred to NPS, any actions to remove associated infrastructure from these lands would result in beneficial cumulative impacts to the area's scenic values. The extent and timing of infrastructure removal and associated site restoration would largely depend on the requirements of the FERC decommissioning process.

Land Use and Ownership

Impacts from Alternative A (No Action)

In Alternative A, existing land use policies and regulations would remain in effect. There would be no change in land management or ownership. BLM-administered land within the study area would continue to be managed by BLM according to existing land use plans and policies as described in *Chapter 4: Affected Environment*, which would be amended by the DRECP LUPA if that plan is adopted. Efforts by the NPS to protect existing adjacent park lands and resources would continue. There would be no effect to private, state, or county lands in the study area; activities on these lands would remain subject to local land use regulations and policies.

Cumulative Effects of Alternative A

If the NPS takes no action to adjust the Joshua Tree National Park boundary, land designations proposed in the DRECP would apply (if approved). On approximately half of the study area, BLM would place a special emphasis on managing resources included in the proposed NCL and ACEC areas to ensure that future land uses do not impact the nationally significant resources in these designated areas. The other half of the study area is considered as unallocated lands under the DRECP which are BLM-administered lands that do not have an existing or proposed land allocation or designation and are open to renewable energy applications. BLM would have discretion to authorize new renewable energy projects and mining activities in unallocated areas. The DRECP would also change in land management in the surrounding desert region.

The designation of the new national monuments has resulted in changes to land use, management, ownership. At Castle Mountain National Monument, ownership transferred from BLM to NPS. The management and use at all three national monuments have changed. The primary purposes of the national monuments are to protect their outstanding natural, cultural, and historical values. Other land uses that conflict with this purpose have been limited or prohibited in the Presidential proclamations for each national monument. For example, limits have been placed on some types of visitor use (such as off-road vehicle use), land development or new extraction of minerals or geothermal leases. The DRECP NCL and ACEC designations also alter land use throughout California. Together, these result in a cumulative shift of land management, in newly protected areas, from new mineral exploration and land development to resource preservation and passive forms of recreation (such as hiking).

There would be no cumulative impacts from the combination of Alternative A and other projects listed in *Table 5-1: Projects in Cumulative Impact Scenario*.

Impacts from Alternative B

In Alternative B, future land uses on 22,135 acres of land in the study area would change as a result of the transfer of management responsibility for these lands from BLM to NPS. Once transferred, these lands would be managed by the NPS under the National Park Service Organic Act and NPS regulations and policies. Renewable energy projects and new mining claims would not be permitted. Nationally significant resources would receive comprehensive and permanent protection under NPS administration. These changes in land use and management would result in long term beneficial effects to the lands and their significant natural, cultural, scenic and scientific values. There would also be substantial long-term benefits to the adjacent park resources, since the additional lands would be preserved, and possibly restored, instead of being open for development or other potentially incompatible uses. Comprehensive resource management of the area could dramatically improve the health of the surrounding ecosystem by reducing invasive species vectors, and reducing light, air, and noise pollution adjacent to the park. Large areas of open space

would be protected for wildlife habitat and migration corridors.

In Alternatives B, six unpatented mining claims would be excluded from boundary adjustment and remain under the administration of BLM. See the Mineral Resources section above for Alternative B for a discussion of how these claims would be managed. Management of these isolated claims within an expanded park boundary could be burdensome for the BLM.

Visitor opportunities differ on NPS and BLM land; see Visitor Opportunities and Access analysis above. Development and uses that are inconsistent with NPS Management Policies would not be permitted. The change of administration of this area could cause some adverse impacts to those visitors who currently use the area for the activities that would no longer be permitted. This adverse impact is dependent on the degree of use by members of the public.

There would be no changes to land use or ownership of private, state, or other local land under this alternative. These areas would be surrounded by NPS-managed land instead of BLM-managed land. Existing access to private property would not be impeded. Privately held lands would continue to be regulated by local land use authorities (i.e., Riverside County). These lands would remain outside of the boundary of Joshua Tree National Park. If adjacent private landowners wished to sell or donate their property to the NPS, it could be added to the park as per the Land and Water Conservation Fund (LWCF). The LWCF has an authority that allows for boundary revisions to include adjacent real property acquired by donation, purchase with donated funds, transfers from any other Federal agencies, or exchange.

Cumulative Effects of Alternative B

The DRECP's Preferred Alternative, or Land Use Plan Amendment (LUPA), integrates renewable energy and resource conservation with other existing uses on BLM-managed land within in the surrounding desert region. It designates Development Focus Areas (DFAs), Variance Process Lands (VPLs), Unallocated Lands, and BLM Conservation Areas (see DRECP, Section II.3.1). Conservation areas and unallocated lands are in the study area. The land use and management of the conservation areas generally parallels the management priorities of the NPS. There are some differences in the management of BLM's unallocated lands and NPS policies, specifically regarding the ability to approve and allow mineral extraction, geothermal leasing laws and renewable energy projects. As such, Alternative B would remove long-standing land uses in unallocated areas (see the Mineral Resources and Visitor Opportunities and Access analyses above). When combined with restrictions in the rest of the DRECP plan area, there is a noticeable difference in the type and extent of allowable land use in the California desert. Designation of DFAs, especially the adjacent Riverside Solar Energy Zone, offset the loss of renewable energy development on the unallocated land in the study area.

The designation of the new national monuments has resulted in changes to land use, management, ownership. At Castle Mountain National Monument, ownership transferred from BLM to NPS. The management and use at all three national monuments have changed. The primary purposes of the national monuments are to protect their outstanding natural, cultural, and historical values. Other land uses that conflict with this purpose have been limited or prohibited in the Presidential proclamations for each national monument. For example, limits have been placed on some types of visitor use (such as off-road vehicle use), land development or new extraction of minerals or geothermal leases. Combined with the DRECP and Alternative B, the national monuments increase the amount of land in the southern California desert that is managed for conservation and resource protection. This

would result in cumulative benefits for the historic, natural, and scientific values on the land, but have some cumulative adverse effects to some types of visitor use and recreation in the region.

In Alternatives B, six unpatented mining claims would be excluded from boundary adjustment. As such, they would remain under the administration of BLM and subject to the land use designations approved for the DRECP. The effect of this change is described above under Mineral Resources.

The Eagle Mountain Pumped Storage Hydroelectric Project would be constructed on private land, and a right-of-way would be obtained from BLM for transmission and water supply lines. These actions are consistent with the land use policies for both Riverside County and BLM, but differ from management policies for adjacent NPS land. Operation of the industrial facility adjacent to the park would affect land uses on NPS land and result in impacts to the visitor experience and wildlife (See Wildlife analysis and Visitor Opportunities and Access analysis above).

None of the other projects listed in *Table 5-1: Projects in Cumulative Impact Scenario* are expected to result in cumulative land use impacts because those projects are outside of the study area and do create any land use conflicts.

Impacts from Alternative C (Preferred Alternative)

In Alternative C, an additional 3,000 acres of federal, state and private land could be added to the boundary. Most of this land is currently owned by ~~Eagle Crest Energy Company~~Kaiser Eagle Mountain LLC. Eagle Crest Energy Company which has a substantial interest in KEM expressed interest in donating the land to NPS. EMMR has a Mining Lease and Agreement with from Kaiser Eagle Mountain LLC ~~lease from Eagle Crest allowing it~~ to conduct above-ground mining for rock and aggregate in this area. Although local zoning allows for mining in these areas, protection of the area for open space is consistent with the Riverside County General Plan land use designations for the private lands.

Six additional unpatented mining claims and State School Land properties would be included in the boundary and subject to the Mining in the Parks Act and related NPS regulations. The unpatented claimants would need to comply with the regulations in 36 CFR Part 9, Subpart A, which includes submission and NPS approval of a plan of operations. The claims would also need to undergo a validity examination process as described above. This could be perceived as an adverse impact.

The beneficial land use impacts described for Alternative B also apply to Alternative C.

Cumulative Effects of Alternative C

The cumulative impacts for Alternative C are similar to Alternative B. However, the changes to land use are greater in Alternative C because more land with mineral interests would be included within the boundary and subject to NPS regulations and policies such as the Mining in the Parks Act. This is a noticeable change from BLM and state regulations and may be perceived as an adverse impact to land use (see Mineral Resources analysis above). This would result in adverse cumulative impacts to land use when combined with other mining restrictions in the DRECP and new national monuments.

Impacts from Alternative D

In Alternative D, 28,600 acres would be included in the boundary of Joshua Tree National Park, however the lands would be acquired by NPS in stages and the park boundary would expand accordingly. The first phase would involve a transfer of all ~~BLM lands~~BLM managed lands outside the pump storage project footprint to NPS, including the six unpatented mining claims. This first phase would happen in the near term if the Secretary of the Interior approves the transfer of ~~BLM lands~~BLM managed lands to the NPS. Subsequent boundary expansions and

changes in land management would occur when private, state and/or local lands are donated to or acquired by outside parties and donated to the NPS. Lands within the footprint of the pump storage project would only be transferred to the NPS and included in the park boundary when that project is decommissioned. These later phases may not occur for many, many years.

If the land use transfers envisioned under Alternative D are fully realized, Alternative D would allow the study area to be comprehensively managed, reducing potential conflicting land uses. Lands would be added to the national park in phases over time as land become feasible and available to acquire should there be willing sellers; this would generally be beneficial for both the NPS and private landowners. Sales or donation agreements would mutually benefit both parties. The advantages of comprehensive land and resource management by NPS would be similar, but much greater, than described under Alternatives B and C. Alternative D would protect large areas of open space and facilitate protection of key wildlife corridors and other landscape-scale values. The NPS would prioritize habitat and resource conservation on these lands which would likely result on limitations on new access roads. Public access to and use of lands added to the park boundary under this alternative would be determined through further implementation planning, which would evaluate various options for management of the area. Over time, visitor access to this new area of the park would be greatly improved as compared to Alternative A.

Alternative D is the only alternative that allows for the Townsite to be acquired by NPS. It is currently in private ownership and would remain so until ~~Eagle Crest~~ Kaiser Eagle Mountain LLC is willing to relinquish it. At that time, the Townsite could be returned to BLM, BLM could transfer it to the NPS, or BLM could lease it to state and local jurisdictions or non-profit organizations. BLM is permitted to lease or convey land to such agencies for recreation or other public purposes per the Recreation and Public Purposes Act. Future land uses and activities within the Townsite would be dependent on which agency eventually administers it. Whether managed by NPS, a local entity, or a non-profit, future land use of the Townsite would transition from private oriented uses to uses that support recreation and other public purposes.

Cumulative Effects of Alternative D

Cumulative impacts of Alternative D are similar to Alternative B and C, but land use conflicts would lessen as land is acquired in stages and added to the boundary. In addition, as more land is added to the boundary, visitor opportunities and resource protection are likely to increase. Combined with the DRECP conservation designations and three national monuments, cumulative benefits to land use would be realized.

Park Operations

Impacts from Alternative A (No Action)

With Alternative A, BLM-managed land would not be transferred to the NPS. There would be no changes to current park operations. The NPS would continue to use existing staff to review and comment on development proposals for the Eagle Mountain area. There would be no change in management complexity for Joshua Tree National Park and no increase to park staffing levels.

Cumulative Effects of Alternative A

If land did not transfer to NPS, land use designations prescribed in the DRECP would apply to the study area if implemented. NCL and ACEC designations, managed resource protection, would be compatible with NPS policies for adjacent land. This could have some benefit to NPS conservation efforts. Renewable energy or other projects could still be approved on BLM unallocated land. As such, NPS would continue to review and comment on those proposals. These efforts, combined with ongoing collaboration with the Eagle Crest

Energy Company on the Eagle Mountain Pumped Storage Hydroelectric Project, and review of renewable energy projects adjacent to the park boundary, could further strain park staff and impact operations. Creation of additional national monuments or protected areas would be beneficial to the park by creating additional areas for collaboration and research.

Impacts from Alternative B

Joshua Tree National Park would require more operational funding to manage additional park land. Park management responsibilities would increase related to natural and cultural resource management, fire management, planning, law enforcement, interpretation/education, public safety, and providing/maintaining infrastructure and amenities for visitors and staff. There would be additional costs for the park to survey and assess wildlife, vegetation, and cultural resources. However such surveys could happen over time as funding becomes available. Abandoned mind lands would also need to be inventoried, assessed for safety and immediate hazards remediated. Additional operational responsibilities would include the development of management and implementation plans for the new park areas. The park estimates that management of the area proposed in Alternative B could be accomplished with an additional three FTE, which would require an increase of $240,000 over the park's current operating budget.

Although more staff would be necessary to manage the land, the overall effect to park operations from Alternative B is positive and could reduce the complexity of current park operations. Alternative B would not only protect important resources associated with the purpose of the park, but also address management issues such as access or encroachment. Park staff would be able to access areas that are currently not accessible to the NPS, and this opens up opportunities for additional law enforcement and safety patrols and research related to desert succession, bighorn sheep, tortoises, etc. The ability to survey and study natural and cultural resources could help the park expand knowledge of the resources, especially when assessing future impacts of climate change.

Under Alternative B, there would be private landowners adjacent to NPS-managed land and some unpatented mining claims would remain under BLM management. The existence of inholdings under other management authorities within national park boundaries can create management challenges and increase the complexity of management for both agencies. These uses may conflict with the NPS mission to preserve and protect park resources, and could create some external threats to these resources. The park would monitor these activities and respond to those that threaten park resources. However, this effort is expected to take less park staff time than time spent over the past 10+ years addressing proposed developments at Eagle Mountain.

Cumulative Effects of Alternative B

The expanded Chuckwalla ACEC designations proposed in the DRECP, would protect additional listed species habitat adjacent to NPS land; this could have some benefit to NPS conservation efforts. Efforts by park staff to collaborate with the Eagle Crest Energy Company on the hydroelectric pumped storage facility, combined with the review of renewable energy projects adjacent to the park boundary, could strain park staff and impact operations. The three new national monuments would be beneficial to the park by creating additional areas for landscape-scale conservation, collaboration and research.

Impacts from Alternative C (Preferred Alternative)

The effects of Alternative C would be similar to Alternative B. However, management of additional land would require additional personnel. The park estimates that another five FTE would be required to effectively manage the

area, increasing the park operating budget by $340,000/year.

Cumulative Effects of Alternative C
Cumulative effects of Alternative C would be the same as Alternative B.

Impacts from Alternative D
Alternative D would result in similar impacts to park management as described for Alternatives B and C. However, Alternative D would create the greatest potential change to park management and operations in the long-term by adding to the park lands with considerable infrastructure and the most opportunities for expanded recreation and visitor use. Alternative D is expected to require an additional seven FTE to manage the land, requiring an increase of $440,000 per year to the annual park operating budget.

This alternative could make park operations and management more complex in some ways, and simpler in others. Over time, as more private land is either sold or donated the NPS, management becomes less complex. With the potential for management of entire by the NPS in the long-term, contiguous lands would generally share the same designation, land use, and goals, and the entire area would be managed under the regulations of the NPS. But these acquisitions would occur in phases, and in the meantime, there could be management challenges related to the inholdings within the boundary of the national park. If the Townsite reverts from private ownership to the United States (under BLM administration), a partnership approach to management of the area with BLM and other local and state agencies could add to management complexity, but would be beneficial, overall.

Cumulative Effects of Alternative D
Cumulative effects of Alternative D would be the same as Alternative B and C.

Socioeconomics

Impacts from Alternative A
Current social and economic trends as described in the *Chapter 4, Affected Environment* would continue under Alternative A. Trends in economic activity, income, population, employment, and tourism would remain unchanged. There would continue to be long-term beneficial, albeit slightly detectable impacts on socioeconomics from continued operation of Joshua Tree National Park, including from its employment opportunities, and local revenue generated from employees and park visitors. There could be a slight increase in employment or tax revenue associated with the construction and operation of the Eagle Mountain Pumped Storage Hydroelectric Project. These effects are unlikely to be noticeable in the diversified economic base of Riverside and San Bernardino counties.

Cumulative Effects of Alternative A
Any additional development in the area, when combined with the action alternatives, has the potential for slight cumulative economic benefits to Riverside and San Bernardino counties. The construction and operation of renewable energy projects have the potential to add jobs and tax revenue to the existing economy. Designation of the three national monuments could increase visitation to the area, which would also be beneficial to the regional economy.

<u>If extractive large scale mining was to resume on private property, there could be socioeconomic benefits from increased employment, when combined with socioeconomic benefits from a boundary adjustment.</u>

Impacts from Alternative B
Additional land for new visitor opportunities in the Eagle Mountain area could have range of economic and social impacts on the surrounding communities. Most impacts would be beneficial

as national park visitors typically provide an economic benefit to the surrounding community. The feasibility analysis in *Chapter 2* provides data on NPS visitor spending. However, in Alternative B, visitors would primarily access the area via four wheel drive vehicle along the unimproved Black Mountain Mine Road in Joshua Tree National Park. Without new roads or access from Desert Center, visitation would likely remain low in Alternatives B and C. The study area is a substantial distance from park entrances at Cottonwood Springs (west of the study area) and Twentynine Palms, northwest of the study area. Therefore economic benefits would be small.

No new mining claims would be permitted, but this is not expected to affect the existing socioeconomic condition, because other than the unpatented mines, the area is not heavily used for mining. Since Eagle Mountain Mine ceased full scale operations in 1983, no new commercial mining operations have been proposed in the study area. The economic viability of future large-scale mining is limited, so adverse socioeconomic impacts are also limited. See the Mineral Resources analysis for additional details. Existing private and commercial lands uses such as mining by EMMR or the operation of the umped storage facility would be uninterrupted. Alternative B would have little effect on commercial operations or mineral extraction.

A socioeconomic concern identified during the public scoping process was the potential effect of national park service management on the extraction of mineral resources. In Alternative B, six unpatented mining claims would be excluded from the park boundary which reduces the economic impacts of validity determination to the claim owners that undertake small scale mining.

Cumulative Impacts of Alternative B

Any additional development in the area, when combined with the action alternatives, has the potential for modest cumulative economic benefits to Riverside and San Bernardino counties. The construction and operation of renewable energy projects or the resumption of large scale mining have the potential to add jobs and tax revenue to the existing, diverse economy. Designation of the new national monuments could increase visitation to the area, resulting in additional benefits to the regional economy.

Impacts from Alternative C (Preferred Alternative)

The socioeconomic effects from Alternative C would be the similar as Alternative B, particularly regarding the extent of visitation and overall impact on mineral extraction. This alternative differs because ~~six~~ all unpatented mining claims would be included in the NPS boundary. A transfer of the lands containing these unpatented mining claims to NPS management could negatively impact mining activities on these unpatented mining claims because these claims have never undergone a validity determination. So although mining is ongoing, and has historically occurred on these claims, it is still necessary for the National Park Service to determine whether those mining claims constitute valid existing rights. Because BLM cost-recovery regulations do not authorize the recovery of costs associated with validity examinations on NPS lands, the cost of the validity exams would probably be borne by the National Park Service should lands be transferred for management as part of Joshua Tree National Park. If the claims are determined to be invalid, mining on the claims must cease. This would adversely affect the claimholders who mine for economic purposes.

~~This would require the claimants to complete a validity examination and complete a plan of operations. This process might deter, or be too onerous or financially infeasible for the owners of these claims.~~ However, the NPS has a regulatory provision that would allow the

claimants to receive temporary NPS approval to continue developing the minerals on their claims during the validity exam and plan review/decision process; this could lessen the adverse economic impact of the action.

Cumulative Impacts of Alternative C

Any additional development in the area, when combined with the action alternatives, has the potential for modest cumulative economic benefits to Riverside and San Bernardino counties. The construction and operation of renewable energy projects or the resumption of large scale mining have the potential to add jobs and tax revenue to the existing, diverse economy. Designation of the national monuments could increase visitation to the area, resulting in additional benefits to the regional economy.

Future DRECP implementation plans for land designated as NCL, ACEC land and Wildlife Allocation, could contribute a small loss of areas available for mineral extraction due to disturbance caps and other restrictions imposed within conservation lands. Combined with Alternative C, these limitations could increase that adverse impact. However, the degree of impact is hard to measure, since future BLM implementation plans would provide details on the use of the conservation lands.

Impacts from Alternative D

A wider range of visitor opportunities could occur under Alternative D in the long-term, particularly if the eastern private lands became available for park use. The larger boundary adjustment creates the greatest potential for new recreational opportunities and visitor services, and thus the greatest increase in employment opportunities for tourism and support services. This could offset any loss in employment associated with closure of the Eagle Mountain Mine or decommissioning of the Eagle Mountain Pumped Storage Hydroelectric Project, in the event that the facility would no longer be needed. This alternative would also provide for a broad array of cultural interpretation. If KEM's private lands within the Townsite reverted to the federal government and became available for public use, easy access from Interstate 10 and the wider range of visitor experiences that could occur in this area may encourage more visitors to the area, generating jobs and potential revenue for the local communities.

Because the proposed addition to Joshua Tree National Park would be greater in Alternative D, beneficial effects to the Desert Center and Riverside County could also be greater. An increase in visitation over time could have modest beneficial economic effects. There could be more jobs and associated economic benefits related to managing, restoring, and interpreting parklands. Beneficial effects could occur from providing supplies and services to visitors, especially associated with special events or activities (such as mine tours) or visits by educational groups.

Cumulative Impacts of Alternative D

The numerous socioeconomic benefits of Alternative D, when combined with the economic benefits from renewable energy or other development in the area, has the potential for great socioeconomic advantages for Desert Center and Riverside County. These benefits would offset the impacts that would result from a reduction in mining. Designation of national monuments or other recreational areas could increase visitation to the area, resulting in additional benefits to the regional economy.

CHAPTER 6: Consultation and Coordination

The National Park Service (NPS) places a high priority on public involvement in National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act processes and on giving the public an opportunity to comment on proposed actions. As part of the NPS NEPA process, issues associated with the proposed action were identified during the internal scoping meeting held with the NPS and have been communicated to other affected agencies and stakeholders.

Public Scoping

The NEPA regulations require an "early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action." To determine the scope of issues to be analyzed in depth within this boundary study / EA, meetings were conducted with NPS staff, interested stakeholders, and members of the public. An internal scoping meeting was held with the NPS in February 2015 at Joshua Tree National Park Headquarters. The study team conducted four public meetings during the scoping period, including one online meeting (July 29, 2015) and three meetings in the vicinity of Joshua Tree National Park August 4-6, 2015 (Desert Center, Joshua Tree, and Palm Desert). Public scoping began July 13, 2015, and ended on August 21, 2015. Details on the areas of concern expressed during public scoping can be found in *Chapter 1: Purpose and Need*.

Tribal Consultation

The NPS sent a letter describing the boundary study and preliminary options to tribal representatives of 15 Tribes:

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Indians
- Cabazon Band of Cahuilla Mission Indians
- Cahuilla Band of Mission Indians
- Chemehuevi Indian Tribe
- Colorado River Indian Tribes
- Fort Mojave Indian Tribe
- Los Coyotes Band of Mission Indians
- Morongo Band of Mission Indians
- Ramona Band of Cahuilla Indians
- San Manuel Band of Serrano Mission Indians
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseño Indians
- Torres Martinez Desert Cahuilla Indians
- Twenty-nine Palms Band of Mission Indians

The Colorado River Indian Tribes requested a meeting with NPS to discuss the effects of a potential boundary adjustment. The La Cuna de Aztlan Sacred Sites Protection Circle and the Chemeheuvi Indian Tribe also expressed an interest in the study area. However, to date, no potential traditional cultural properties have been identified within the study area.

Table 6-1: Organizations, Agencies, and Businesses that Submitted Scoping Comments

Tribal Organizations	**Energy Companies and Utilities**
Chemehuevi Indian Tribe Colorado River Indian Tribes La Cuna de Aztlan Sacred Sites Protection Circle	Eagle Crest Energy Company Southern California Edison
Organizations	**Businesses**
Amargosa Conservancy California Desert Coalition California Wilderness Coalition Center for Biological Diversity Defenders of Wildlife Desert Protection Society Desert Protective Council Desert Tortoise Council First Class Miners, Inc. Harrison House Arts, Music and Ecology Joshua Tree Community Association Joshua Tree National Park Association MMAC (Minerals and Mining Advisory Council) Mojave Desert Land Trust Morongo Basin Conservation Association Myth in the Mojave National Parks Conservation Association Public Lands for the People San Bernardino Valley Audubon Society Sierra Club Summertree Institute The Wilderness Society Transition Habitat Conservancy	American Birdlife Note Cards, Presentations Exhibits Benchmark Studios Bonita Domes Broadview Crossroads Café Dan O'Dowd Productions Decal Depot Distance to Be Traveled Grow with Lauren Ell Hi Desert Water Transport, Inc. Holmes Ecological Design and Construction Holmes Health Hot Purple Energy Integratron Jonathan Stone, CPA Joshua Tree Art Gallery Joshua Tree Chamber of Commerce Joshua Tree Excursions Joshua Tree Health Foods Joshua Tree Inn Joshua Tree International Film Festival Joshua Tree Music Festival Joshua Tree Realty JT Lilypad, LLC Living Space Developers Moonlight Mesa Retreats and Vacation Rentals Oasis Office Supply Outmywindows.com Pappy and Harriet's Pioneertown Palace Quail Crossing Rustic Modern Rentals Sacred Sands Bed and Breakfast Spin and Margie's Desert Hideaway STARLITE Twentynine Palms Inn Vera Photography

Agency Consultation

Coordination with local and federal agencies and various interest groups was conducted during the NEPA process to identify issues and/or concerns related to the proposed actions. An agency scoping meeting was held on July 16, 2015. One representative from Metropolitan Water District of Southern California (MWD) and three from U.S. Fish and Wildlife Service attended (via phone and WebEx). The agencies supported completion of a boundary study. U.S. Fish and Wildlife suggested that the NPS consider the effects of more visitors on the desert tortoise. MWD had no concerns.

BLM was invited to the agency briefing in July 2015 but did not attend the agency briefing. However, NPS has invited BLM to become a cooperating agency on the boundary study EA. In early 2016, the NPS and BLM developed a Joint Action and Communication Plan to explore a possible boundary expansion of Joshua Tree National Park in the Eagle Mountain Area. A component of the action plan was the agreement of the BLM, California State Office to serve as a cooperating agency with NPS, Pacific West Regional Office as the lead agency in conducting the required NEPA analysis and other reports and legal processes necessary for completion of this withdrawal and temporary segregation. The BLM reviewed and provided input on the draft boundary study / EA.

Section 7 Consultation

In accordance with Section 7 of the Endangered Species Act, consultation letters were sent from the NPS to the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife in July 2015. No written comments have been received to date. Consultation is ongoing and the agency will be invited to review the draft boundary study and environmental assessment.

Section 106 Consultation

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. In accordance with the regulations implementing Section 106, letters initiating the process were sent to the California SHPO and to the Tribes as described in the previous section. The Colorado River Indian Tribes requested a consultation meeting with the NPS. Streamlined procedures for Section 106 consultation have been used in this EA. Consultation is ongoing.

List of Agencies and Organizations and Stakeholders Public Who Will Be Notified of the Publication of the Boundary Study / EA

U.S. Government

Members of Congress
Senator Barbara Boxer
Senator Dianne Feinstein
Congressman Pete Aguilar
Congressman Paul Cook
Congressman Raul Ruiz

Federal Agencies
Bureau of Land Management
U.S. Fish and Wildlife Service
U.S. Geological Survey
U.S. Army Corps of Engineers
U.S. Geological Survey, Biological Resources Division

State of California

State Senators
State Senator Jean Fuller
State Senator Ben Hueso
State Senator Mike Morrell
State Senator Tony Mendoza
State Senator Sharon Runner
State Senator Jeff Stone

State Representatives
Representative Eduardo Garcia, California State Assembly

Representative Chris Holden, California State Assembly
Representative Chad Mayes, California State Assembly
Representative Jay Obernolte, California State Assembly
Representative Brian Jones, California State Assembly
Representative Cheryl R. Brown, California State Assembly
Representative Marc Steinorth, California State Assembly

State Agencies
California Department of Fish and Wildlife
California State Historic Preservation Office
California State Lands Commission
State Water Resources Control Board

Local and County Governments
City of Banning
City of Beaumont
City of Big Bear Lake
City of Cathedral City
City of Desert Hot Springs
City of Fontana
City of Hesperia
City of Highland
City of Indio
City of Palm Desert
City of Palm Springs
City of Redlands
City of San Bernardino
City of Twenty Nine Palms
City of Upland
City of Yucaipa
City of Rancho Cucamonga

Riverside County
Riverside County Board of Supervisors
Riverside County Planning Department

School Districts
Morongo Unified School District
Desert Center Unified School District

Tribal Organizations and Groups
Agua Caliente Band of Cahuilla Indians
Augustine Band of Cahuilla Indians
Cabazon Band of Cahuilla Mission Indians
Cahuilla Band of Mission Indians
Chemehuevi Indian Tribe
La Cuna de Aztlan Sacred Sites Protection Circle
Colorado River Indian Tribes
Fort Mojave Indian Tribe
Los Coyotes Band of Mission Indians
Morongo Band of Mission Indians
Twenty-nine Palms Band of Mission Indians
Soboba Band of Luiseño Indians
Ramona Band of Cahuilla Indians
San Manuel Band of Serrano Mission Indians
Santa Rosa Band of Cahuilla Indians
Torres Martinez Desert Cahuilla Indians

Businesses, Institutions, and Organizations
Boyd Deep Canyon Desert Research Center
California Desert Coalition
Cathedral City Chamber of Commerce
Center for Biological Diversity
Citizens for the Chuckwalla Valley
Coachella Chamber of Commerce
Coachella Valley Mexican American Chamber of Commerce
Coachella Valley Mountains Conservancy
Defenders of Wildlife
Desert Hot Springs Chamber of Commerce
Desert Protection Society
Desert Protective Council
Desert Tortoise Council
Eagle Crest Energy Company
Eagle Mountain Mining and Railroad Company, LLC
First Class Miners, Inc.
Indio Chamber of Commerce
Joshua Tree Chamber of Commerce
Joshua Tree National Park Association
La Ronna Jojoba Co.
Minerals and Mining Advisory Council
Mojave Desert Land Trust
Morongo Basin Conservation Association
Morongo Basin Conservation Association
National Park Foundation
National Parks Conservation Association

Palm Desert Chamber of Commerce
Palm Springs Chamber of Commerce
Public Lands for the People
Rancho Mirage Chamber of Commerce
Sierra Club
Sierra Club -Tahquitz Group
Society for the Conservation of Bighorn Sheep
The Nature Conservancy
The Wilderness Society
The Wildlands Conservancy
Thousand Palms Chamber of Commerce
Twentynine Palms Inn
Welborn, Sullivan Meck & Tooley, P.C.
Yucca Valley Chamber of Commerce

Water Districts and Agencies
Coachella Valley Water District
Lahontan Regional Water Resources Control Board
Metropolitan Water District of Southern California
Mission Springs Water District
San Diego Regional Water Resources Control Board

Utility Companies
Southern California Edison

Comment Period

To comment on this boundary study / EA, you may mail comments or submit them online at http://parkplanning.nps.gov/eaglemountain and follow the appropriate links. Please submit comments by May 27, 2016.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that the NPS practice is to make comments, including the names and addresses of respondents, available for public review. Individual respondents may request that their address be withheld from the planning record, which will be honored to the extent allowable by law. There also may be circumstances in which a respondent's identity would be withheld from the record, as allowable by law. To have your name and/or address withheld state this prominently at the beginning of the comment.

Please mail comments to:

Eagle Mountain Boundary Study
Joshua Tree National Park
74485 National Park Drive
Twentynine Palms, California 92277-3597
E-mail: jotr_study@nps.gov

APPENDIXES

APPENDIX A: Presidential Proclamation and Legislative Acts for Joshua Tree National Park

Proclamation (No. 2193) of August 10, 1936

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

WHEREAS certain public lands in the State of California contain historic and prehistoric structures, and have situated thereon various objects of historic and scientific interest; and

WHEREAS it appears that it would be in the public interest to reserve such lands as a national monument, to be known as the Joshua Tree National Monument:

Now, THEREFORE, I, Franklin D. Roosevelt, President of the United States of America, under and by virtue of the authority vested in me by section 2 of the act of June 8, 1906, ch. 3060, 34 Stat. 225 (U. S. C., title 16, sec. 431), do proclaim that, subject to existing rights and prior withdrawals, the following-described lands in California are hereby reserved from all forms of appropriation under the public-land laws and set apart as the Joshua Tree National Monument:

SAN BERNARDINO MERIDIAN

T. I S., R. 5 E., sees. 19 to 36, inclusive. T. 2 S., R. 5 E., sees. I to 6, 11 to 13, inclusive, and those parts of secs. 7, 8, 9, 10, 14, 15 and 24 lying north of the north boundary of the Colorado River Aqueduct right-of-way. T. I S., R. 6 E., sees. 19 to 36, inclusive; T. 2 S., R. 6 E., sees. I to 18, 21 to 26, inclusive, and those parts of secs.19, 20, 27, 28, 34, 35 and 36 lying north of aqueduct right-of-way; T. 3 S., R. 6 E., that part of sec. 1 lying north if aqueduct right-of-way. Ts. 1 and 2 S., R. 7 E. (Partly unsurveyed); T. 3 S., R. 7 E., sees. 1 to 6, 8 to 16, 23 to 24, inclusive, and those parts of secs. 7, 17, 18, 21, 22, 25 and 26 lying north of aqueduct right-of-way; Ts. I and 2 S., R. 8 E. (partly unsurveyed); T. 3 S., R. 8 E., sees. 1 to 30, 33 to 36, inclusive, and those parts of secs. 31 and 32 lying north of aqueduct right-of-way; T. 4 S., R. 8 E., those parts of secs. 4 and 5 lying north of aqueduct right-of-way; T. 1 S., R. 9 E., secs. 5 to 9 and 16 to 36, inclusive; Ts. 2 and 3 S., R. 9 E. (partly unsurveyed); Ts. I to 3 S., R. 10 E. (partly unsurveyed); T. 5 S., R. 10 E., secs. 1 to 30, inclusive, and those parts of secs. 31 to 36 lying north of aqueduct right-of-way; Ts. I to 4 S., R. 11 E. (partly unsurveyed); T. 5 S., R. 11 E., secs. 1 to 30 and 32 to 36, inclusive, and that part of sec. 31 lying north of aqueduct right-of-way; T. 6 S., R 11 E., those parts of secs. I to 6 lying north of aqueduct right-of-way; Ts. 1 to 5 S., R. 12 E. (partly unsurveyed); T. 6 S., R. 12 E., those parts of secs. 1 to 6 lying north of aqueduct right- of- way; Ts. 1 to 4 S., R. 13 E. (partly unsurveyed); T. 5 S., R. 13 E., secs. I to 24, inclusive, and those parts of secs. 28, 29, 30 and 31 lying north of aqueduct right-of-way (partly unsurveyed); Ts. 1 to 3 S., R. 14 E. (partly unsurveyed); T. 4 S., R. 14 E., secs. 1 to 11, 14 to 23, 27 to 34, inclusive, and those parts of secs. 12, 13, 24, 25, 26 and 35 lying west of aqueduct right-of-way (unsurveyed), Ss. I and 2 S., R. 15 E. (partly unsurveyed); T. 3 S., R. 15 E., secs. 1 to 19, inclusive, and sec. 24; those parts of secs. 20, 21, 22, 23, 25, 26, 29, 30 and 31 lying north of aqueduct right-of-way (partly unsurveyed).; T. 4 S., R. 15 E., those parts of secs. 6 and 7 lying west of aqueduct right-of-way; containing approximately 825,340 acres.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument and not to locate or settle upon any of the lands thereof.

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of the monument as provided in the act of Congress entitled "An Act To establish a National Park Service, and for other purposes," approved August 25, 1916 (ch. 408, 39 Stat. 535, U. S. C., title 16, secs. 1 and 2), and acts supplementary thereto or amendatory thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

DONE at the City of Washington this 10th day of August, in the year of our Lord nineteen hundred and thirty-six and of the Independence of the United States of America the one hundred and sixty-first.

FRANKLIN D. ROOSEVELT.

By the President: WILLIAM PHILLIPS,

Acting Secretary of State

Boundary Revision of 1950 (Public Law 81-837)

An Act to reduce and revise the boundaries of the Joshua Tree National Monument in the State of California, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Joshua Tree National Monument, in the State of California, established by Proclamation Numbered 2193, of August 10. 1936 (50 Stat. 1760), hereafter shall comprise the following -described area:

SAN BERNARDINO MERIDIAN

Township 1 south, range 5 east, sections 22 to 27, inclusive, and sections 34 to 36, inclusive; township 2 south, range 5 east, portion of east half lying north of the north right-of-way line of the Colorado River aqueduct but excluding therefrom that portion of the Long Canyon Camp and dump area in section 27 ; township 1 south, range 6 east, sections 19 to 36, inclusive ; township 2 south, range 6 east, sections 1 to 30, inclusive, that portion of section 31 lying north of the north right-of-way line of the Colorado River aqueduct, and sections 32 to 36, inclusive; township 3 south, range 6 east, portion lying north of the north right-of-way line of the Colorado River aqueduct but excluding therefrom that portion of the Deception Camp and dump area in section 14, that portion of the West Deception Camp and dump area in section 10, and the portions of the East Wide Canyon Camps and dump areas in sections 5 and 6 ; township 1 south, range 7 east, sections 1 to 4, inclusive, and 9 to 15, inclusive, unsurveyed, section 16, sections 19 to 23, inclusive, section 24, unsurveyed, and sections 25 to 36, inclusive; township 2 south, range 7 east; township 3 south, range 7 east, portion lying north of the north right-of-way line of the Colorado River aqueduct but excluding therefrom that portion of the Fan Hill Camp and dump area in section 20 ; township 1 south, range 8 east, partly unsurveyed; townships 2 and 3 south, range 8 east; township 1 south, range 9 east, sections 5 to 9, inclusive, sections 16 to 23, inclusive, and sections 26 to 35, inclusive; township 2 south, range 9 east, sections 2 to 11, inclusive, and sections 14 to 36, inclusive, partly unsurveyed ; township 3 south, range 9 east; township 4 south, range 9 east, sections 1 to 5, inclusive, and sections 11 to 14, inclusive ; township 2 south, range 10 east, sections 25 to 36, inclusive, unsurveyed; township 3 south, range 10 east, partly unsurveyed; township 4 south, range 10 east, sections 1 to 18, inclusive, sections 22 to 26, inclusive, and sections 35 and 36 ; township 5 south, range 10 east, section 1; township 2 south, range 11 east, sections 25 to 36, inclusive, unsurveyed; townships 3 and 4 south, range 11 east, partly unsurveyed; township 5 south, range 11 east, sections 1 to 18, inclusive, sections 22 to 27, inclusive, and sections 34, 35, and 36; township 6 south, range 11 east, portion of sections 1, 2, and 3 lying north or north transmission line right-of-way which is adjacent to the north right-of-way line of the Colorado River aqueduct but excluding therefrom the Aggregate Deposit in section 3; township 2 south, range 12 east, section 13 and sections 23 to 36, inclusive, partly unsurveyed; townships 3 and 4 south, range 12 east, partly unsurveyed; township 5 south, range 12 east, sections 1 to 24, inclusive, and sections 26 to 34, inclusive, partly unsurveyed, and portions of sections 25 and 35 lying north of north transmission line right-of-way which is adjacent to the north right-of-way line of the Colorado River aqueduct; township 6 south, range 12 east, portions of sections 2, 3, 4, 5, 6, and 10, lying north of north transmission line right-of-way which is adjacent to the north right-of-way line of the Colorado River aqueduct, but excluding therefrom the Bumpani's Aggregate Deposit in section 4; township 2 south, range 13 east, sections 1 and 2 and sections 7 to 36, inclusive, partly unsurveyed ; township 3 south, range 13 east, sections 1 to 18, inclusive, partly unsurveyed; township 5 south, range 13 east, sections 6, 7, 18, and 19, unsurveyed; township 1 south, range 14 east, sections 33 to 36, inclusive, partly unsurveyed; township 2 south, range 14 east, partly unsurveyed; township 3 south, range 14 east, sections 1 to 18, inclusive, partly

unsurveyed; township 1 south, range 15 east, sections 31 to 35, inclusive, partly unsurveyed ; township 2 south, range 15 east, sections 2 to 36 inclusive, partly unsurveyed; township 3 south, range 15 east, sections 1 to 12, inclusive, partly unsurveyed, and section 18, unsurveyed; township 2 south, range 16 east, sections 18, 19, 30, and 31, unsurveyed; and township 3 south, range 16 east, sections 6 and 7 unsurveyed.

Sec. 2. All public-domain lands heretofore included within the Joshua Tree National Monument which are eliminated from the National Monument by this Act are hereby opened to location, entry, and patenting under the United States mining laws: Provided, That such public-domain lands or portions thereof shall be restored to application and entry under other applicable public land laws, including the mineral leasing laws.

Sec. 3. All leases, permits, and licenses issued or authorized by any department, establishment, or agency of the United States, with respect to the Federal lands excluded from the Joshua Tree National Monument by this Act, which are in effect on the date of the approval of this Act shall continue in effect, subject to compliance with the terms and conditions therein set forth, until terminated in accordance with the provisions thereof.

Sec. 4. The Secretary of the Interior is authorized and directed, through the Bureau of Mines, the Geological Survey, and the National Park Service, to cause a survey to be made of the area within the revised boundaries of the Joshua Tree National Monument with a view to determining to what extent the said area is more valuable for minerals than for the National Monument purposes for which it was created. Report of said survey shall be filed with the President of the United States Senate and the Speaker of the House of Representatives on or before February 1, 1951.

Approved September 25, 1950.

Designation of Joshua Tree National Park (Public Law 103-433) California Desert Protection Act (Joshua Tree Portion)

TITLE IV - JOSHUA TREE NATIONAL PARK.

SEC. 401. FINDINGS.

The Congress finds that a proclamation by President Franklin Roosevelt in1936 established Joshua Tree National Monument to protect various objects of historical and scientific interest;

Joshua Tree National Monument today is recognized as a major unit of the National Park System, having extraordinary values enjoyed by millions of visitors; the monument boundaries as modified in 1950 and 1961 exclude and thereby expose to incompatible development and inconsistent management, contiguous Federal lands of essential and superlative natural, ecological, archeological, paleontological, cultural, historical, and wilderness values; Joshua Tree National Monument should be enlarged by the addition of contiguous Federal lands of national park caliber, and afforded full recognition and statutory protection as a National Park; and the non-designated wilderness within Joshua Tree should receive statutory protection by designation pursuant to the Wilderness Act.

SEC. 402. ESTABLISHMENT OF JOSHUA TREE NATIONAL PARK.

There is hereby established the Joshua Tree National Park, (hereinafter in this section referred to as the "park"), as generally depicted on a map entitled "Joshua Tree National Park Boundary – Proposed", dated May 1991, and four maps entitled "Joshua Tree National Park Boundary and wilderness", numbered in the title one through four, and dated October 1991 or prior, which shall be on file and available for public inspection in the offices of the Superintendent of the park and the Director of the National Park Service, Department of the Interior. The Joshua Tree National Monument is hereby abolished as such, the lands and interests therein are hereby incorporated within and made part of the new Joshua Tree National Park, and any funds available for purposes of the monument shall be available for purposes of the park.

SEC. 403. TRANSFER AND ADMINISTRATION OF LANDS.

Upon enactment of this title, the Secretary shall transfer the lands under the jurisdiction of the Bureau of Land Management depicted on the maps described in section 402 of this title, without consideration, to the administrative jurisdiction of the National Park Service for administration as part of the National Park System. The boundaries of the park shall be adjusted accordingly.

The Secretary shall administer the areas added to the park by this title in accordance with the provisions of law generally applicable to units of the National Park System, including the Act entitled "An Act to establish a National Park Service, and for other purposes", approved August 25, 1916 (39 9 Stat. 535; 16 U.S.C. 1, 2-4).

SEC. 404. MAPS AND LEGAL DESCRIPTION.

Within six months after the date of enactment of this title, the Secretary shall file maps and legal description of the park with the Committee on Energy and Natural Resources of the United States Senate and the Committee on Natural Resources of the United States House of Representatives. Such maps and legal description shall have the same force and effect as if included in this title, except that the Secretary may correct clerical and typographical errors in such legal description and maps. The maps and legal

description shall be on file and available for public inspection in the appropriate offices of the National Park Service, Department of the Interior.

SEC. 405. WITHDRAWAL.

Subject to valid existing rights, all Federal lands within the park are hereby withdrawn from all forms of entry, appropriation, or disposal under the public land laws; from location, entry, and patent under the United States mining laws; and from disposition under all laws pertaining to mineral and geothermal leasing, and mineral materials, and all amendments thereto.

SEC. 406. UTILITY RIGHTS-OF-WAY.

Nothing in this title shall have the effect of terminating any validly issued right-of-way or customary operation maintenance, repair, and replacement activities in such right-of-way, issued, granted, or permitted to the Metropolitan Water District pursuant to the Boulder Canyon Project Act (43 U.S.C. 617-619b), which is located on lands included in the Joshua Tree National Park, but outside lands designated as wilderness under section 601(a)(2). Such activities shall be con- ducted in a manner which will minimize the impact on park resources. Nothing in this title shall have the effect of terminating the fee title to lands or customary operation, maintenance, repair, and replacement activities on or under such lands granted to the Metropolitan Water District pursuant to the Act on June 18, 1932 (47 Stat. 324), which are located on lands included in the Joshua Tree National Park, but outside lands designated as wilderness under section 601(a)(2). Such activities shall be conducted in a manner which will minimize the impact on park resources. The Secretary shall prepare within one hundred and eighty days after the date of enactment of this Act, in consultation with the Metropolitan Water District, plans for emergency access by the metropolitan Water District to its lands and rights-of-way.

Approved October 31, 1994.

APPENDIX B: Studies and Reports Required by 43 CFR 2310.3.2 (Segregation and Withdrawal Application)

As authorized by provisions of the Land and Water Conservation Fund Act[5] and the Federal Land Policy and Management Act[6] (FLPMA), the National Park Service (NPS) has requested the withdrawal of federal lands within the study area evaluated in the proposed action (Alternative C) including the transfer of administrative jurisdiction over approximately 22,515 acres of land from the BLM to the NPS. General requirements for the withdrawal process are outlined in 3 CFR Part 2300, Subpart 2310.

The boundary study / EA satisfies requirements for information, studies, analyses and reports outlined in 43 CFR 2310.3-2 including:

General Requirements of 43 CFR 2310.3-2	
Requirement	**Related Boundary Study Components**
(b)(1): effects of proposal on present users of land, resource uses, and economic impacts. A report identifying the present users of the lands involved, explaining how the users will be affected by the proposed use and analyzing the manner in which existing and potential resource uses are incompatible with or conflict with the proposed use of the lands and resources that would be affected by the requested action. The report shall also specify the provisions that are to be made for, and an economic analysis of, the continuation, alteration or termination of existing uses. If the provisions of § 2310.3-5 of this title are applicable to the proposed withdrawal, the applicant shall also furnish a certification that the requirements of that section shall be satisfied promptly if the withdrawal is allowed or authorized.	The study boundary adjustment criteria analysis in *Chapter 2* provides an in depth discussion of existing land uses. *Chapter 4: Affected Environment* also contains a description of land use and existing visitor uses and opportunities. *Chapter 5: Environmental Consequences* evaluates the potential effects of the withdrawal on existing resources, present users of the land, and economic impacts.
(b)(2) Water Use (2) If the application states that the use of water in any State will be necessary to fulfill the purposes of the requested withdrawal, extension or modification, a report specifying that the applicant or using agency has acquired, or proposes to acquire, rights to the use of the water in conformity with applicable State laws and procedures relating to the control, appropriation, use and distribution of water, or whether the withdrawal is intended to reserve, pursuant to Federal law, sufficient unappropriated water to fulfill the purposes of the withdrawal. Water shall be reserved pursuant to Federal law for use in carrying out the purposes of the withdrawal only if specifically so stated in the relevant withdrawal order, as provided in § 2310.3-3(b) of this title and only to the extent needed for the purpose or purposes of the withdrawal as expressed in the withdrawal order. The applicant shall also provide proof of notification of the involved State's department of water resources when a land use needed to carry out the purposes of the requested withdrawal will involve utilization of the water resources in a State. As a condition to the allowance of an order reserving water, the applicant shall certify to the Secretary that it shall quantify the amount of water to be reserved by the order.	Water rights have not been identified as necessary for NPS management of the withdrawal area, so this area is not analyzed.

[5] The Land and Water Conservation Fund Act authorizes NPS to accept an administrative transfer of lands from another federal agency for inclusion with an adjacent national park unit. *See* 54 U.S.C. § 100506(c)(1)(B) (formerly found at 16 U.S.C. § 460*l*-9(c)(1)(ii)).

[6] The Federal Land Policy and Management Act authorizes the Secretary to transfer jurisdiction over federal lands. *See* 43 U.S.C. §§ 1702(j), 1714 and 43 C.F.R. § 2310.1-2.

General Requirements of 43 CFR 2310.3-2	
Requirement	**Related Boundary Study Components**
(b)(3) Environmental Assessment An environmental assessment, an environmental impact statement or any other documents as are needed to meet the requirements of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)), and the regulations applicable thereto. The authorized officer shall participate in the development of environmental assessments or impact statements. The applicant shall designate the Bureau of Land Management as a cooperating agency and shall comply with the requirements of the regulations of the Council on Environmental Quality. The Bureau of Land Management shall, at a minimum, independently evaluate and review the final product. The following items shall either be included in the assessment or impact statement, or they may be submitted separately, with appropriate cross references. (i) A report on the identification of cultural resources prepared in accordance with the requirements of 36 CFR part 800, and other applicable regulations. (ii) An identification of the roadless areas or roadless islands having wilderness characteristics, as described in the Wilderness Act of 1964 (16 U.S.C. 1131, et seq.), which exist within the area covered by the requested withdrawal action. (iii) A mineral resource analysis prepared by a qualified mining engineer, engineering geologist or geologist which shall include, but shall not be limited to, information on: General geology, known mineral deposits, past and present mineral production, mining claims, mineral leases, evaluation of future mineral potential and present and potential market demands. (iv) A biological assessment of any listed or proposed endangered or threatened species, and their critical habitat, which may occur on or in the vicinity of the involved lands, prepared in accordance with the provisions of section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1536), and regulations applicable thereto, if the Secretary determines that assessment is required by law. (v) An analysis of the economic impact of the proposed uses and changes in use associated with the requested action on individuals, local communities, State and local government interests, the regional economy and the Nation as a whole. (vi) A statement as to the extent and manner in which the public participated in the environmental review process.	The study environmental assessment meets the requirements of the National Environmental Policy Act and includes evaluation of the items outlined under (b)(3): i. Potential effects on cultural resources are documented in *Chapter 5: Environmental Consequences.* ii. Roadless areas are described in *Chapter 2: Application of Boundary Adjustment Criteria* and on *Map: 2-4 Wilderness and Roadless Areas.* iii. Completion of a mineral potential report is being prepared separately from this boundary study / EA. However, a description of mineral resources and potential effects on such resources has been included in the EA. iv. *Chapter 5: Environmental Consequences* includes an assessment of proposed endangered or threatened species within the study area. v. *Chapter 5: Environmental Consequences (Land Use and Ownership, Socioeconomics)* includes an assessment of potential effects on individuals, local communities, state and local governments, and the regional economy. vi. *Chapter 1: Purpose and Need (Study Process) and Chapter 6: Consultation and Coordination* describes stakeholder and public involvement associated with the boundary study / EA.
(b)(4) A statement with specific supporting data, as to: (i) Whether the lands involved are floodplains or are considered wetlands; and (ii) Whether the existing and proposed uses would affect or be affected by such floodplains or wetlands and, if so, to what degree and in what manner. The statement shall indicate whether, if the requested action is allowed, it will comply with the provisions of Executive Orders 11988 and 11990 of May 24, 1977 (42 FR 26951; 26961).	*Chapter 5: Environmental Consequences* documents wetlands and floodplains in the area (*Map 5-1: Wetlands and Floodplains*) and finds that the withdrawal as identified in the action alternatives would not have an effect on wetlands and floodplains.
(b)(5) A statement of the consultation which has been or will be conducted with other Federal departments or agencies; with regional, State and local Government bodies; and with individuals and nongovernmental groups regarding the requested action.	The BLM is a cooperating agency for the environmental assessment. *Chapter 5: Environmental Consequences* documents consultation with other Federal, State and local government bodies; and with individual groups and nongovernmental groups.

General Requirements of 43 CFR 2310.3-2	
Requirement	**Related Boundary Study Components**
(c) Resource Management Plan Prior to final action being taken in connection with an application, the applicant shall prepare, with the guidance and participation of the authorized officer, and subject to the approval of the authorized officer, the Secretary and other affected departments, agencies or offices, a resource management plan and implementation program regarding the use and management of any public lands with their related resources uses. Consideration shall be given to the impact of the proposed reservation on access to and the use of the land areas that are located in the vicinity of the lands proposed to be withdrawn. Where appropriate, the plan and program will be implemented by means of a memorandum of understanding between the affected agencies. Any allocation of jurisdiction between the agencies shall be effected in the public land order or legislation. In those cases where the Secretary, acting through the Bureau of Land Management, would continue to exercise partial jurisdiction, resource management of withdrawn areas may be governed by the issuance of management decisions by the Bureau of Land Management to implement land use plans developed or revised under the land use planning requirements of section 202 of the Act (43 U.S.C. 1712).	The preferred alternative and proposed action includes provisions for a resource management implementation program guided by the park resource stewardship strategy if land is transferred to NPS. The alternatives also identify access to the area following a withdrawal and land transfer.

APPENDIX C: Parcel Information

Parcel Group	APN*		
Federal Lands Parcel Group	701290017 701300003 701300006 701300009 701310009 701310010 701310011 701310012 701310013 701310014 701310015 701310016 701320013 701320014 701320015 701320016 701320017 701320018 701320019 701320020 701350009 701350010 701350011 701350012 701350013 701360002 701360003 701360004 701370020 701370021 701370022 701370023 701370024 701370026 701370027 701370028 701370032 701370033 701370034 701370035	701370036 701380019 701380020 701380021 701380026 701380027 701380028 701350014 701360005 701360006 701360007 701370029 701380029 701380030 701380031 701380034 705150004 705150005 705150006 705150007 705150012 705150013 800070018 800070019 800070023 800070030 800070031 800070033 800090002 800090008 800090011 800090023 800090055 800090059 800090062 800090063 800090065 800090070 807090004 807110001 807110003 800101009 800101016 807020002 807020003	807020004 807020005 807020006 807020007 807020008 807020014 807020015 807020016 807020017 807020018 807020019 807020020 807020021 807030003 807050007 807070012 807070013 807070014 807070015 807070016 807070017 807070018 807070019 807090003 807090005 807090006 807100005 807100006 807100012 807110002 807110005 807110018 807120001 807120002 807120004 807120014 807120017 807120020 807120021 807150008 807020001

Parcel Group	APN*		
Private Lands Parcel Group	701310004 701310005 701310006 701320001 701320002 701320003 701320004 701320005 701320006 701320007 701350001 701350002 701370001 701370002 701370003	701370004 701370005 701370006 701370007 701370008 701370009 701370010 701380006 701380008 701380010 701380011 701380022 701380023 701380024	701380025 701380032 701380033 705150001 807050006 807070008 807070009 807070011 807070019 807070020 807080007 807090001 807110004
State School Land Parcel Group	701320023 701320021	701320022 800370005	800370004 800370006 800280007
Townsite Parcels	701380007 701380009 701380012 807030005 807030007 807030008 807030010 807030011	807040006 807040007 807040008 807040009 807040010 807050004 807060002 807060008	807-060-007 807060009 807070002 807070004 807070005 807080004 807080005 807080008 807080009
Eagle Mountain School Parcel	807090002		
Metropolitan Water District of Southern California Parcel Group	800070028 800070029 800070032 800070034 800090029 800090045 800090049 800090054 800090056 800090060	800090061 800090064 800090066 800090069 800090071 800280005 800280006 800300001 800310001 800360001	800370001 800370003 800380001 800380003 807110020 807060007 807120016 807120019 807120023 807120024
*Note: In some cases only a portion of the parcel lies within the study area or proposed boundary adjustment.			

APPENDIX D: Unpatented Mining Claims

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43501	27 0030S 0150E 031 SE	ASH # 2	KAISER EAGLE MTN INC	LODE
CAMC43502	27 0030S 0150E 031 SE	ASH # 3	KAISER EAGLE MTN INC	LODE
CAMC43503	27 0030S 0150E 031 SW,SE	ASH # 4	KAISER EAGLE MTN INC	LODE
CAMC29208	27 0030S 0140E 019 NE	BLACK EAGLE # 102	KAISER EAGLE MTN INC	MILLSITE
CAMC29209	27 0030S 0140E 019 NE	BLACK EAGLE # 103	KAISER EAGLE MTN INC	MILLSITE
CAMC29216	27 0030S 0140E 019 NE; 27 0030S 0140E 020 NW	BLACK EAGLE # 110	KAISER EAGLE MTN INC	MILLSITE
CAMC29217	27 0030S 0140E 019 NE; 27 0030S 0140E 020 NW	BLACK EAGLE # 111	KAISER EAGLE MTN INC	MILLSITE
CAMC29218	27 0030S 0140E 020 NW	BLACK EAGLE # 112	KAISER EAGLE MTN INC	MILLSITE
CAMC29219	27 0030S 0140E 020 NW	BLACK EAGLE # 113	KAISER EAGLE MTN INC	MILLSITE
CAMC29224	27 0030S 0140E 020 NW	BLACK EAGLE # 118	KAISER EAGLE MTN INC	MILLSITE
CAMC29225	27 0030S 0140E 020 NW	BLACK EAGLE # 119	KAISER EAGLE MTN INC	MILLSITE
CAMC29226	27 0030S 0140E 020 NW,SW	BLACK EAGLE # 120	KAISER EAGLE MTN INC	MILLSITE
CAMC29206	27 0030S 0140E 019 NW	BLACK EAGLE # 96	KAISER EAGLE MTN INC	MILLSITE
CAMC14517	27 0030S 0140E 019 NE,NW	BLACK EAGLE #100	KAISER EAGLE MTN INC	MILLSITE
CAMC78619	27 0030S 0130E 024 NE	BLACK EAGLE #123	KAISER EAGLE MTN INC	MILLSITE
CAMC78620	27 0030S 0130E 024 NE,SE	BLACK EAGLE #124	KAISER EAGLE MTN INC	MILLSITE
CAMC78621	27 0030S 0130E 024 NE,SW,SE	BLACK EAGLE #125	KAISER EAGLE MTN INC	MILLSITE
CAMC14515	27 0030S 0140E 019 NW	BLACK EAGLE #98	KAISER EAGLE MTN INC	MILLSITE
CAMC14516	27 0030S 0140E 019 NE,NW	BLACK EAGLE #99	KAISER EAGLE MTN INC	MILLSITE
CAMC43579	27 0030S 0140E 033 NW	BLACK EAGLE EXT # 10	KAISER EAGLE MTN INC	LODE
CAMC43580	27 0030S 0140E 032 NE; 27 0030S 0140E 033 NW,SW	BLACK EAGLE EXT # 11	KAISER EAGLE MTN INC	LODE
CAMC43581	27 0030S 0140E 032 NE,SE; 27 0030S 0140E 033 NW,SW	BLACK EAGLE EXT # 12	KAISER EAGLE MTN INC	LODE
CAMC43572	27 0030S 0140E 029 SE; 27 0030S 0140E 032 NE,NW	BLACK EAGLE EXT # 2	KAISER EAGLE MTN INC	LODE
CAMC43573	27 0030S 0140E 032 NE,NW	BLACK EAGLE EXT # 3	KAISER EAGLE MTN INC	LODE
CAMC43574	27 0030S 0140E 032 NE,NW	BLACK EAGLE EXT # 4	KAISER EAGLE MTN INC	LODE
CAMC43575	27 0030S 0140E 032 NE,SE	BLACK EAGLE EXT # 5	KAISER EAGLE MTN INC	LODE
CAMC43577	27 0030S 0140E 032 NE; 27 0030S 0140E 033 NW	BLACK EAGLE EXT # 7	KAISER EAGLE MTN INC	LODE
CAMC43578	27 0030S 0140E 033 NW	BLACK EAGLE EXT #9	KAISER EAGLE MTN INC	LODE
CAMC43552	27 0030S 0140E 029 SW, 27 0030S 0140E 032 NW	BLACK EAGLE EXTENSIO	KAISER EAGLE MTN INC	LODE
CAMC43619	27 0030S 0140E 019 NW	BLACK EAGLE NO 10	KAISER EAGLE MTN INC	MILLSITE
CAMC43620	27 0030S 0140E 019 NW,SW	BLACK EAGLE NO 11	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43621	27 0030S 0140E 019 NW,SW	BLACK EAGLE NO 12	KAISER EAGLE MTN INC	MILLSITE
CAMC43622	27 0030S 0140E 019 NW	BLACK EAGLE NO 13	KAISER EAGLE MTN INC	MILLSITE
CAMC43623	27 0030S 0140E 019 NW	BLACK EAGLE NO 14	KAISER EAGLE MTN INC	MILLSITE
CAMC43624	27 0030S 0140E 019 NW	BLACK EAGLE NO 15	KAISER EAGLE MTN INC	MILLSITE
CAMC43625	27 0030S 0140E 019 SW	BLACK EAGLE NO 16	KAISER EAGLE MTN INC	MILLSITE
CAMC43626	27 0030S 0140E 019 NE,NW,SW,SE	BLACK EAGLE NO 17	KAISER EAGLE MTN INC	MILLSITE
CAMC43627	27 0030S 0140E 019 NE,NW	BLACK EAGLE NO 18	KAISER EAGLE MTN INC	MILLSITE
CAMC43628	27 0030S 0140E 019 NE,NW	BLACK EAGLE NO 19	KAISER EAGLE MTN INC	MILLSITE
CAMC43611	27 0030S 0140E 030 SE	BLACK EAGLE NO 2	KAISER EAGLE MTN INC	MILLSITE
CAMC43629	27 0030S 0140E 019 NE,NW	BLACK EAGLE NO 20	KAISER EAGLE MTN INC	MILLSITE
CAMC43630	27 0030S 0140E 019 NW	BLACK EAGLE NO 21	KAISER EAGLE MTN INC	MILLSITE
CAMC43631	27 0030S 0140E 019 NW	BLACK EAGLE NO 22	KAISER EAGLE MTN INC	MILLSITE
CAMC43632	27 0030S 0140E 019 NW	BLACK EAGLE NO 23	KAISER EAGLE MTN INC	MILLSITE
CAMC43633	27 0030S 0140E 019 NW	BLACK EAGLE NO 24	KAISER EAGLE MTN INC	MILLSITE
CAMC43634	27 0030S 0130E 024 SE; 27 0030S 0140E 019 SW	BLACK EAGLE NO 25	KAISER EAGLE MTN INC	MILLSITE
CAMC43635	27 0030S 0130E 024 NE,SE; 27 0030S 0140E 019 NW,SW	BLACK EAGLE NO 26	KAISER EAGLE MTN INC	MILLSITE
CAMC43636	27 0030S 0130E 024 NE; 27 0030S 0140E 019 NW	BLACK EAGLE NO 27	KAISER EAGLE MTN INC	MILLSITE
CAMC43637	27 0030S 0130E 024 NE; 27 0030S 0140E 019 NW	BLACK EAGLE NO 28	KAISER EAGLE MTN INC	MILLSITE
CAMC43638	27 0030S 0130E 024 NE; 27 0030S 0140E 019 NW	BLACK EAGLE NO 29	KAISER EAGLE MTN INC	MILLSITE
CAMC43640	27 0030S 0140E 024 NE,SE	BLACK EAGLE NO 31	KAISER EAGLE MTN INC	MILLSITE
CAMC43641	27 0030S 0140E 024 NE	BLACK EAGLE NO 32	KAISER EAGLE MTN INC	MILLSITE
CAMC43642	27 0030S 0140E 024 NE	BLACK EAGLE NO 33	KAISER EAGLE MTN INC	MILLSITE
CAMC43643	27 0030S 0140E 024 NE	BLACK EAGLE NO 34	KAISER EAGLE MTN INC	MILLSITE
CAMC43644	27 0030S 0140E 024 NE	BLACK EAGLE NO 35	KAISER EAGLE MTN INC	MILLSITE
CAMC43645	27 0030S 0140E 024 NE	BLACK EAGLE NO 36	KAISER EAGLE MTN INC	MILLSITE
CAMC43613	27 0030S 0140E 030 SW,SE	BLACK EAGLE NO 4	KAISER EAGLE MTN INC	MILLSITE
CAMC43649	27 0030S 0140E 019 SE	BLACK EAGLE NO 40	KAISER EAGLE MTN INC	MILLSITE
CAMC43650	27 0030S 0140E 019 NE,SE	BLACK EAGLE NO 41	KAISER EAGLE MTN INC	MILLSITE
CAMC43651	27 0030S 0140E 019 NE	BLACK EAGLE NO 42	KAISER EAGLE MTN INC	MILLSITE
CAMC43652	27 0030S 0140E 019 NE	BLACK EAGLE NO 43	KAISER EAGLE MTN INC	MILLSITE
CAMC43653	27 0030S 0140E 019 NE	BLACK EAGLE NO 44	KAISER EAGLE MTN INC	MILLSITE
CAMC43654	27 0030S 0140E 019 SE	BLACK EAGLE NO 45	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43655	27 0030S 0140E 019 SE	BLACK EAGLE NO 46	KAISER EAGLE MTN INC	MILLSITE
CAMC43656	27 0030S 0140E 019 SE	BLACK EAGLE NO 47	KAISER EAGLE MTN INC	MILLSITE
CAMC43657	27 0030S 0140E 019 NE,SE	BLACK EAGLE NO 48	KAISER EAGLE MTN INC	MILLSITE
CAMC43658	27 0030S 0140E 019 NE	BLACK EAGLE NO 49	KAISER EAGLE MTN INC	MILLSITE
CAMC43614	27 0030S 0140E 019 NW,SW	BLACK EAGLE NO 5	KAISER EAGLE MTN INC	MILLSITE
CAMC43659	27 0030S 0140E 019 NE	BLACK EAGLE NO 50	KAISER EAGLE MTN INC	MILLSITE
CAMC43660	27 0030S 0140E 019 NE	BLACK EAGLE NO 51	KAISER EAGLE MTN INC	MILLSITE
CAMC43661	27 0030S 0140E 019 SE	BLACK EAGLE NO 52	KAISER EAGLE MTN INC	MILLSITE
CAMC43662	27 0030S 0140E 019 SE	BLACK EAGLE NO 53	KAISER EAGLE MTN INC	MILLSITE
CAMC43663	27 0030S 0140E 019 SE	BLACK EAGLE NO 54	KAISER EAGLE MTN INC	MILLSITE
CAMC43664	27 0030S 0140E 019 NE,SE	BLACK EAGLE NO 55	KAISER EAGLE MTN INC	MILLSITE
CAMC43665	27 0030S 0140E 019 NE,SE	BLACK EAGLE NO 56	KAISER EAGLE MTN INC	MILLSITE
CAMC43666	27 0030S 0140E 019 NE	BLACK EAGLE NO 57	KAISER EAGLE MTN INC	MILLSITE
CAMC43668	27 0030S 0140E 019 SE; 27 0030S 0140E 020 SW	BLACK EAGLE NO 59	KAISER EAGLE MTN INC	MILLSITE
CAMC43615	27 0030S 0140E 019 NW,SW	BLACK EAGLE NO 6	KAISER EAGLE MTN INC	MILLSITE
CAMC43669	27 0030S 0140E 019 SE; 27 0030S 0140E 020 SW	BLACK EAGLE NO 60	KAISER EAGLE MTN INC	MILLSITE
CAMC43670	27 0030S 0140E 019 SE; 27 0030S 0140E 020 SW	BLACK EAGLE NO 61	KAISER EAGLE MTN INC	MILLSITE
CAMC43671	27 0030S 0140E 019 SE; 27 0030S 0140E 020 SW	BLACK EAGLE NO 62	KAISER EAGLE MTN INC	MILLSITE
CAMC43672	27 0030S 0140E 019 SE, 27 0030S 0140E 020 SW	BLACK EAGLE NO 63	KAISER EAGLE MTN INC	MILLSITE
CAMC43673	27 0030S 0140E 019 NE,SE; 27 0030S 0140E 020 NW,SW	BLACK EAGLE NO 64	KAISER EAGLE MTN INC	MILLSITE
CAMC43674	27 0030S 0140E 020 SW	BLACK EAGLE NO 65	KAISER EAGLE MTN INC	MILLSITE
CAMC43675	27 0030S 0140E 020 SW	BLACK EAGLE NO 66	KAISER EAGLE MTN INC	MILLSITE
CAMC43676	27 0030S 0140E 020 SW	BLACK EAGLE NO 67	KAISER EAGLE MTN INC	MILLSITE
CAMC43677	27 0030S 0140E 020 SW	BLACK EAGLE NO 68	KAISER EAGLE MTN INC	MILLSITE
CAMC43678	27 0030S 0140E 020 SW	BLACK EAGLE NO 69	KAISER EAGLE MTN INC	MILLSITE
CAMC43616	27 0030S 0140E 019 NW	BLACK EAGLE NO 7	KAISER EAGLE MTN INC	MILLSITE
CAMC43679	27 0030S 0140E 020 SW	BLACK EAGLE NO 70	KAISER EAGLE MTN INC	MILLSITE
CAMC43680	27 0030S 0140E 020 NW,SW	BLACK EAGLE NO 71	KAISER EAGLE MTN INC	MILLSITE
CAMC43681	27 0030S 0140E 020 SW	BLACK EAGLE NO 72	KAISER EAGLE MTN INC	MILLSITE
CAMC43682	27 0030S 0140E 020 SW	BLACK EAGLE NO 73	KAISER EAGLE MTN INC	MILLSITE
CAMC43683	27 0030S 0140E 030 SW	BLACK EAGLE NO 74	KAISER EAGLE MTN INC	MILLSITE
CAMC43684	27 0030S 0140E 020 SW	BLACK EAGLE NO 75	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43685	27 0030S 0140E 020 SW; 27 0030S 0140E 029 NW	BLACK EAGLE NO 76	KAISER EAGLE MTN INC	MILLSITE
CAMC43686	27 0030S 0140E 020 SW	BLACK EAGLE NO 77	KAISER EAGLE MTN INC	MILLSITE
CAMC43687	27 0030S 0140E 020 SW	BLACK EAGLE NO 78	KAISER EAGLE MTN INC	MILLSITE
CAMC43688	27 0030S 0140E 020 SW	BLACK EAGLE NO 79	KAISER EAGLE MTN INC	MILLSITE
CAMC43617	27 0030S 0140E 019 NW	BLACK EAGLE NO 8	KAISER EAGLE MTN INC	MILLSITE
CAMC43689	27 0030S 0140E 020 SW	BLACK EAGLE NO 80	KAISER EAGLE MTN INC	MILLSITE
CAMC43690	27 0030S 0140E 020 SW,SE	BLACK EAGLE NO 81	KAISER EAGLE MTN INC	MILLSITE
CAMC43691	27 0030S 0140E 020 SW,SE	BLACK EAGLE NO 82	KAISER EAGLE MTN INC	MILLSITE
CAMC43692	27 0030S 0140E 020 SW,SE	BLACK EAGLE NO 83	KAISER EAGLE MTN INC	MILLSITE
CAMC43693	27 0030S 0140E 020 SE	BLACK EAGLE NO 84	KAISER EAGLE MTN INC	MILLSITE
CAMC43694	27 0030S 0140E 020 NW,SW	BLACK EAGLE NO 85	KAISER EAGLE MTN INC	MILLSITE
CAMC43695	27 0030S 0140E 029 NW	BLACK EAGLE NO 86	KAISER EAGLE MTN INC	MILLSITE
CAMC43696	27 0030S 0140E 020 SW	BLACK EAGLE NO 87	KAISER EAGLE MTN INC	MILLSITE
CAMC43698	27 0030S 0140E 020 SE	BLACK EAGLE NO 89	KAISER EAGLE MTN INC	MILLSITE
CAMC43618	27 0030S 0140E 019 NW	BLACK EAGLE NO 9	KAISER EAGLE MTN INC	MILLSITE
CAMC43699	27 0030S 0140E 020 SW,SE	BLACK EAGLE NO 90	KAISER EAGLE MTN INC	MILLSITE
CAMC43700	27 0030S 0140E 020 SW,SE	BLACK EAGLE NO 91	KAISER EAGLE MTN INC	MILLSITE
CAMC43701	27 0030S 0140E 020 SW,SE; 27 0030S 0140E 029 NE,NW	BLACK EAGLE NO 92	KAISER EAGLE MTN INC	MILLSITE
CAMC43702	27 0030S 0140E 029 NE,NW	BLACK EAGLE NO 93	KAISER EAGLE MTN INC	MILLSITE
CAMC43703	27 0030S 0140E 025 NE,NW	BLACK EAGLE NO 94	KAISER EAGLE MTN INC	MILLSITE
CAMC43704	27 0030S 0140E 030 NW	BLACK EAGLE NO 95	KAISER EAGLE MTN INC	MILLSITE
CAMC43898	27 0030S 0140E 032 NE	CEN DEPOSIT MILL #1	KAISER EAGLE MTN INC	MILLSITE
CAMC43907	27 0030S 0140E 033 NW	CEN DEPOSIT MILL #10	KAISER EAGLE MTN INC	MILLSITE
CAMC43908	27 0030S 0140E 028 SW; 27 0030S 0140E 033 NW	CEN DEPOSIT MILL #11	KAISER EAGLE MTN INC	MILLSITE
CAMC43909	27 0030S 0140E 029 SE; 27 0030S 0140E 032 NE	CEN DEPOSIT MILL #12	KAISER EAGLE MTN INC	MILLSITE
CAMC43910	27 0030S 0140E 029 SE; 27 0030S 0140E 032 NE	CEN DEPOSIT MILL #13	KAISER EAGLE MTN INC	MILLSITE
CAMC43911	27 0030S 0140E 032 NE	CEN DEPOSIT MILL #14	KAISER EAGLE MTN INC	MILLSITE
CAMC43912	27 0030S 0140E 032 NE	CEN DEPOSIT MILL #15	KAISER EAGLE MTN INC	MILLSITE
CAMC43913	27 0030S 0140E 029 SE; 27 0030S 0140E 032 NE	CEN DEPOSIT MILL #16	KAISER EAGLE MTN INC	MILLSITE
CAMC43914	27 0030S 0140E 029 SE	CEN DEPOSIT MILL #17	KAISER EAGLE MTN INC	MILLSITE
CAMC43915	27 0030S 0140E 029 SE	CEN DEPOSIT MILL #18	KAISER EAGLE MTN INC	MILLSITE
CAMC43916	27 0030S 0140E 029 SE	CEN DEPOSIT MILL #19	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43899	27 0030S 0140E 032 NE	CEN DEPOSIT MILL #2	KAISER EAGLE MTN INC	MILLSITE
CAMC43917	27 0030S 0140E 029 SE	CEN DEPOSIT MILL #20	KAISER EAGLE MTN INC	MILLSITE
CAMC43918	27 0030S 0140E 029 SE	CEN DEPOSIT MILL #21	KAISER EAGLE MTN INC	MILLSITE
CAMC43919	27 0030S 0140E 029 SE	CEN DEPOSIT MILL #22	KAISER EAGLE MTN INC	MILLSITE
CAMC43920	27 0030S 0140E 028 SW; 27 0030S 0140E 033 NW	CEN DEPOSIT MILL #23	KAISER EAGLE MTN INC	MILLSITE
CAMC43921	27 0030S 0140E 028 SW; 27 0030S 0140E 033 NW	CEN DEPOSIT MILL #24	KAISER EAGLE MTN INC	MILLSITE
CAMC43922	27 0030S 0140E 028 SW; 27 0030S 0140E 033 NW	CEN DEPOSIT MILL #25	KAISER EAGLE MTN INC	MILLSITE
CAMC43923	27 0030S 0140E 028 SW; 27 0030S 0140E 033 NW	CEN DEPOSIT MILL #26	KAISER EAGLE MTN INC	MILLSITE
CAMC43924	27 0030S 0140E 028 SW,SE; 27 0030S 0140E 033 NE,NW	CEN DEPOSIT MILL #27	KAISER EAGLE MTN INC	MILLSITE
CAMC43925	27 0030S 0140E 028 SE; 27 0030S 0140E 033 NE	CEN DEPOSIT MILL #28	KAISER EAGLE MTN INC	MILLSITE
CAMC43926	27 0030S 0140E 028 SE; 27 0030S 0140E 033 NE	CEN DEPOSIT MILL #29	KAISER EAGLE MTN INC	MILLSITE
CAMC43900	27 0030S 0140E 032 NE	CEN DEPOSIT MILL #3	KAISER EAGLE MTN INC	MILLSITE
CAMC43927	27 0030S 0140E 028 SE; 27 0030S 0140E 033 NE	CEN DEPOSIT MILL #30	KAISER EAGLE MTN INC	MILLSITE
CAMC43928	27 0030S 0140E 028 NE; 27 0030S 0140E 033 NE	CEN DEPOSIT MILL #31	KAISER EAGLE MTN INC	MILLSITE
CAMC43929	27 0030S 0140E 028 SE; 27 0030S 0140E 033 NE	CEN DEPOSIT MILL #32	KAISER EAGLE MTN INC	MILLSITE
CAMC43931	27 0030S 0140E 028 SW,SE	CEN DEPOSIT MILL #34	KAISER EAGLE MTN INC	MILLSITE
CAMC43932	27 0030S 0140E 033 NW	CEN DEPOSIT MILL #35	KAISER EAGLE MTN INC	MILLSITE
CAMC43933	27 0030S 0140E 033 NW	CEN DEPOSIT MILL #36	KAISER EAGLE MTN INC	MILLSITE
CAMC43934	27 0030S 0140E 033 NW	CEN DEPOSIT MILL #37	KAISER EAGLE MTN INC	MILLSITE
CAMC43935	27 0030S 0140E 033 NW	CEN DEPOSIT MILL #38	KAISER EAGLE MTN INC	MILLSITE
CAMC43936	27 0030S 0140E 033 NE,NW	CEN DEPOSIT MILL #39	KAISER EAGLE MTN INC	MILLSITE
CAMC43901	27 0030S 0140E 033 NW; 27 0030S 0140E 032 NE; 27 0030S 0140E 028 SW; 27 0030S 0140E 029 SE	CEN DEPOSIT MILL #4	KAISER EAGLE MTN INC	MILLSITE
CAMC43937	27 0030S 0140E 033 NE	CEN DEPOSIT MILL #40	KAISER EAGLE MTN INC	MILLSITE
CAMC43938	27 0030S 0140E 033 NW	CEN DEPOSIT MILL #41	KAISER EAGLE MTN INC	MILLSITE
CAMC43939	27 0030S 0140E 033 NW	CEN DEPOSIT MILL #42	KAISER EAGLE MTN INC	MILLSITE
CAMC43940	27 0030S 0140E 033 NW	CEN DEPOSIT MILL #43	KAISER EAGLE MTN INC	MILLSITE
CAMC43941	27 0030S 0140E 033 NW	CEN DEPOSIT MILL #44	KAISER EAGLE MTN INC	MILLSITE
CAMC43942	27 0030S 0140E 033 NE,NW	CEN DEPOSIT MILL #45	KAISER EAGLE MTN INC	MILLSITE
CAMC43943	27 0030S 0140E 033 NE	CEN DEPOSIT MILL #46	KAISER EAGLE MTN INC	MILLSITE
CAMC43944	27 0030S 0140E 033 NE	CEN DEPOSIT MILL #47	KAISER EAGLE MTN INC	MILLSITE
CAMC43945	27 0030S 0140E 033 NE,SW	CEN DEPOSIT MILL #48	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43946	27 0030S 0140E 028 NW	CEN DEPOSIT MILL #49	KAISER EAGLE MTN INC	MILLSITE
CAMC43902	27 0030S 0140E 032 NE; 27 0030S 0140E 033 NW	CEN DEPOSIT MILL #5	KAISER EAGLE MTN INC	MILLSITE
CAMC43947	27 0030S 0140E 028 NW	CEN DEPOSIT MILL #50	KAISER EAGLE MTN INC	MILLSITE
CAMC43948	27 0030S 0140E 028 NW	CEN DEPOSIT MILL #51	KAISER EAGLE MTN INC	MILLSITE
CAMC43949	27 0030S 0140E 028 NW	CEN DEPOSIT MILL #52	KAISER EAGLE MTN INC	MILLSITE
CAMC43950	27 0030S 0140E 028 NW; 27 0030S 0140E 029 NW	CEN DEPOSIT MILL #53	KAISER EAGLE MTN INC	MILLSITE
CAMC43951	27 0030S 0140E 028 NW; 27 0030S 0140E 029 NE	CEN DEPOSIT MILL #54	KAISER EAGLE MTN INC	MILLSITE
CAMC43952	27 0030S 0140E 029 NE	CEN DEPOSIT MILL #55	KAISER EAGLE MTN INC	MILLSITE
CAMC43953	27 0030S 0140E 029 NE	CEN DEPOSIT MILL #56	KAISER EAGLE MTN INC	MILLSITE
CAMC43954	27 0030S 0140E 033 NW,SW	CEN DEPOSIT MILL #57	KAISER EAGLE MTN INC	MILLSITE
CAMC43955	27 0030S 0140E 033 SW	CEN DEPOSIT MILL #58	KAISER EAGLE MTN INC	MILLSITE
CAMC43956	27 0030S 0140E 033 SW	CEN DEPOSIT MILL #59	KAISER EAGLE MTN INC	MILLSITE
CAMC43957	27 0030S 0140E 033 SW	CEN DEPOSIT MILL #60	KAISER EAGLE MTN INC	MILLSITE
CAMC43958	27 0030S 0140E 033 SW	CEN DEPOSIT MILL #61	KAISER EAGLE MTN INC	MILLSITE
CAMC43959	27 0030S 0140E 032 SE; 27 0030S 0140E 033 SW	CEN DEPOSIT MILL #62	KAISER EAGLE MTN INC	MILLSITE
CAMC43961	27 0030S 0140E 033 NE; 27 0030S 0140E 034 NW	CEN DEPOSIT MILL #64	KAISER EAGLE MTN INC	MILLSITE
CAMC43962	27 0030S 0140E 033 NE	CEN DEPOSIT MILL #65	KAISER EAGLE MTN INC	MILLSITE
CAMC43963	27 0030S 0140E 033 NE	CEN DEPOSIT MILL #66	KAISER EAGLE MTN INC	MILLSITE
CAMC43964	27 0030S 0140E 033 NE	CEN DEPOSIT MILL #67	KAISER EAGLE MTN INC	MILLSITE
CAMC43965	27 0030S 0140E 033 NE	CEN DEPOSIT MILL #68	KAISER EAGLE MTN INC	MILLSITE
CAMC43966	27 0030S 0140E 033 NE	CEN DEPOSIT MILL #69	KAISER EAGLE MTN INC	MILLSITE
CAMC43904	27 0030S 0140E 028 SW; 27 0030S 0140E 033 NW	CEN DEPOSIT MILL #7	KAISER EAGLE MTN INC	MILLSITE
CAMC43967	27 0030S 0140E 033 NE	CEN DEPOSIT MILL #70	KAISER EAGLE MTN INC	MILLSITE
CAMC43970	27 0030S 0140E 029 NE	CEN DEPOSIT MILL #73	KAISER EAGLE MTN INC	MILLSITE
CAMC43971	27 0030S 0140E 029 NE	CEN DEPOSIT MILL #74	KAISER EAGLE MTN INC	MILLSITE
CAMC43972	27 0030S 0140E 029 NE	CEN DEPOSIT MILL #75	KAISER EAGLE MTN INC	MILLSITE
CAMC43973	27 0030S 0140E 029 NE	CEN DEPOSIT MILL #76	KAISER EAGLE MTN INC	MILLSITE
CAMC43974	27 0030S 0140E 033 SE; 27 0030S 0140E 034 SW	CEN DEPOSIT MILL #77	KAISER EAGLE MTN INC	MILLSITE
CAMC43975	27 0030S 0140E 033 SE; 27 0030S 0140E 034 SW	CEN DEPOSIT MILL #78	KAISER EAGLE MTN INC	MILLSITE
CAMC43976	27 0030S 0140E 033 SE	CEN DEPOSIT MILL #79	KAISER EAGLE MTN INC	MILLSITE
CAMC43905	27 0030S 0140E 028 SW; 27 0030S 0140E 033 NW	CEN DEPOSIT MILL #8	KAISER EAGLE MTN INC	MILLSITE
CAMC43977	27 0030S 0140E 033 SE	CEN DEPOSIT MILL #80	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43978	27 0030S 0140E 033 SE	CEN DEPOSIT MILL #81	KAISER EAGLE MTN INC	MILLSITE
CAMC43979	27 0030S 0140E 033 SE	CEN DEPOSIT MILL #82	KAISER EAGLE MTN INC	MILLSITE
CAMC43980	27 0030S 0140E 033 SE	CEN DEPOSIT MILL #83	KAISER EAGLE MTN INC	MILLSITE
CAMC43981	27 0030S 0140E 033 SE	CEN DEPOSIT MILL #84	KAISER EAGLE MTN INC	MILLSITE
CAMC43982	27 0030S 0140E 033 SE	CEN DEPOSIT MILL #85	KAISER EAGLE MTN INC	MILLSITE
CAMC43983	27 0030S 0140E 033 SW,SE	CEN DEPOSIT MILL #86	KAISER EAGLE MTN INC	MILLSITE
CAMC43984	27 0030S 0140E 033 SW	CEN DEPOSIT MILL #87	KAISER EAGLE MTN INC	MILLSITE
CAMC43985	27 0030S 0140E 033 SW	CEN DEPOSIT MILL #88	KAISER EAGLE MTN INC	MILLSITE
CAMC43986	27 0030S 0140E 033 SW	CEN DEPOSIT MILL #89	KAISER EAGLE MTN INC	MILLSITE
CAMC43987	27 0030S 0140E 033 SW	CEN DEPOSIT MILL #90	KAISER EAGLE MTN INC	MILLSITE
CAMC43988	27 0030S 0140E 033 SW	CEN DEPOSIT MILL #91	KAISER EAGLE MTN INC	MILLSITE
CAMC78611	27 0030S 0140E 033 NW	CENTRAL DEPOSIT #100	KAISER EAGLE MTN INC	MILLSITE
CAMC78613	27 0030S 0140E 033 SW	CENTRAL DEPOSIT #102	KAISER EAGLE MTN INC	MILLSITE
CAMC78614	27 0030S 0140E 033 SW	CENTRAL DEPOSIT #103	KAISER EAGLE MTN INC	MILLSITE
CAMC78615	27 0030S 0140E 033 SW	CENTRAL DEPOSIT #104	KAISER EAGLE MTN INC	MILLSITE
CAMC78616	27 0030S 0140E 033 NE,NW	CENTRAL DEPOSIT #105	KAISER EAGLE MTN INC	MILLSITE
CAMC78617	27 0030S 0140E 033 NW	CENTRAL DEPOSIT #106	KAISER EAGLE MTN INC	MILLSITE
CAMC78618	27 0030S 0140E 033 NW	CENTRAL DEPOSIT #107	KAISER EAGLE MTN INC	MILLSITE
CAMC119658	27 0030S 0140E 034 SW	CENTRAL DEPOSIT #108	KAISER EAGLE MTN INC	MILLSITE
CAMC119660	27 0030S 0140E 033 NE	CENTRAL DEPOSIT #110	KAISER EAGLE MTN INC	MILLSITE
CAMC338	27 0030S 0140E 028 NW	CENTRAL DEPOSIT #92	KAISER EAGLE MTN INC	MILLSITE
CAMC339	27 0030S 0140E 028 NW	CENTRAL DEPOSIT #93	KAISER EAGLE MTN INC	MILLSITE
CAMC119657	27 0030S 0140E 034 SW	CENTRAL DEPOSIT #94	KAISER EAGLE MTN INC	MILLSITE
CAMC60471	27 0030S 0140E 033 NE	CENTRAL DEPOSIT #95	KAISER EAGLE MTN INC	MILLSITE
CAMC60472	27 0030S 0140E 033 NE	CENTRAL DEPOSIT #96	KAISER EAGLE MTN INC	MILLSITE
CAMC60473	27 0030S 0140E 033 NE	CENTRAL DEPOSIT #97	KAISER EAGLE MTN INC	MILLSITE
CAMC60474	27 0030S 0140E 033 NE	CENTRAL DEPOSIT #98	KAISER EAGLE MTN INC	MILLSITE
CAMC60475	27 0030S 0140E 033 NE	CENTRAL DEPOSIT #99	KAISER EAGLE MTN INC	MILLSITE
CAMC236168	27 0030S 0140E 034 SW	CENTRAL DEPOSIT 119	KAISER EAGLE MTN INC	MILLSITE
CAMC236169	27 0030S 0140E 034 SW	CENTRAL DEPOSIT 120	KAISER EAGLE MTN INC	MILLSITE
CAMC236180	27 0030S 0140E 034 SW	CENTRAL DEPOSIT 131	KAISER EAGLE MTN INC	MILLSITE
CAMC236181	27 0030S 0140E 034 SW	CENTRAL DEPOSIT 132	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC236182	27 0030S 0140E 034 SW	CENTRAL DEPOSIT 133	KAISER EAGLE MTN INC	MILLSITE
CAMC236183	27 0030S 0140E 034 SW	CENTRAL DEPOSIT 134	KAISER EAGLE MTN INC	MILLSITE
CAMC236184	27 0030S 0140E 034 SW	CENTRAL DEPOSIT 135	KAISER EAGLE MTN INC	MILLSITE
CAMC236185	27 0030S 0140E 034 SW	CENTRAL DEPOSIT 136	KAISER EAGLE MTN INC	MILLSITE
CAMC236186	27 0030S 0140E 034 SW	CENTRAL DEPOSIT 137	KAISER EAGLE MTN INC	MILLSITE
CAMC236187	27 0030S 0140E 034 SW	CENTRAL DEPOSIT 138	KAISER EAGLE MTN INC	MILLSITE
CAMC43582	27 0030S 0140E 033 SE	CENTRAL PLACER NO 1	KAISER EAGLE MTN INC	LODE
CAMC43583	27 0030S 0140E 033 SE	CENTRAL PLACER NO 2	KAISER EAGLE MTN INC	LODE
CAMC43530	27 0030S 0150E 031 SE	CHUCKLE #10	KAISER EAGLE MTN INC	PLACER
CAMC43847	27 0030S 0140E 034 SE	E PIT MILL NO 100	KAISER EAGLE MTN INC	MILLSITE
CAMC43848	27 0030S 0140E 034 SE	E PIT MILL NO 101	KAISER EAGLE MTN INC	MILLSITE
CAMC43849	27 0030S 0140E 034 SE	E PIT MILL NO 102	KAISER EAGLE MTN INC	MILLSITE
CAMC43850	27 0030S 0140E 034 SE	E PIT MILL NO 103	KAISER EAGLE MTN INC	MILLSITE
CAMC43851	27 0030S 0140E 034 NE	E PIT MILL NO 104	KAISER EAGLE MTN INC	MILLSITE
CAMC43852	27 0030S 0140E 034 NE	E PIT MILL NO 105	KAISER EAGLE MTN INC	MILLSITE
CAMC43853	27 0030S 0140E 034 SW	E PIT MILL NO 106	KAISER EAGLE MTN INC	MILLSITE
CAMC43854	27 0030S 0140E 034 SW	E PIT MILL NO 107	KAISER EAGLE MTN INC	MILLSITE
CAMC43855	27 0030S 0140E 034 SW	E PIT MILL NO 108	KAISER EAGLE MTN INC	MILLSITE
CAMC43856	27 0030S 0140E 034 SW	E PIT MILL NO 109	KAISER EAGLE MTN INC	MILLSITE
CAMC43857	27 0030S 0140E 034 NW	E PIT MILL NO 110	KAISER EAGLE MTN INC	MILLSITE
CAMC43859	27 0030S 0140E 034 SE	E PIT MILL NO 112	KAISER EAGLE MTN INC	MILLSITE
CAMC43860	27 0030S 0140E 034 SW	E PIT MILL NO 113	KAISER EAGLE MTN INC	MILLSITE
CAMC43861	27 0030S 0140E 034 SE	E PIT MILL NO 114	KAISER EAGLE MTN INC	MILLSITE
CAMC43862	27 0030S 0140E 034 SW	E PIT MILL NO 115	KAISER EAGLE MTN INC	MILLSITE
CAMC43864	27 0030S 0140E 034 SW	E PIT MILL NO 117	KAISER EAGLE MTN INC	MILLSITE
CAMC43865	27 0030S 0140E 034 SW	E PIT MILL NO 118	KAISER EAGLE MTN INC	MILLSITE
CAMC43866	27 0030S 0140E 034 SW	E PIT MILL NO 119	KAISER EAGLE MTN INC	MILLSITE
CAMC43867	27 0030S 0140E 034 SW	E PIT MILL NO 120	KAISER EAGLE MTN INC	MILLSITE
CAMC43868	27 0030S 0140E 034 SW	E PIT MILL NO 121	KAISER EAGLE MTN INC	MILLSITE
CAMC43869	27 0030S 0140E 034 SW	E PIT MILL NO 122	KAISER EAGLE MTN INC	MILLSITE
CAMC43870	27 0030S 0140E 034 SW	E PIT MILL NO 123	KAISER EAGLE MTN INC	MILLSITE
CAMC43871	27 0030S 0140E 034 SE	E PIT MILL NO 124	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43872	27 0030S 0140E 034 SW	E PIT MILL NO 125	KAISER EAGLE MTN INC	MILLSITE
CAMC43874	27 0030S 0140E 034 SW	E PIT MILL NO 127	KAISER EAGLE MTN INC	MILLSITE
CAMC43875	27 0030S 0140E 034 SW	E PIT MILL NO 128	KAISER EAGLE MTN INC	MILLSITE
CAMC43876	27 0030S 0140E 025 SE	E PIT MILL NO 140	KAISER EAGLE MTN INC	MILLSITE
CAMC43877	27 0030S 0140E 025 SE	E PIT MILL NO 141	KAISER EAGLE MTN INC	MILLSITE
CAMC43878	27 0030S 0140E 025 SE	E PIT MILL NO 142	KAISER EAGLE MTN INC	MILLSITE
CAMC43879	27 0030S 0140E 025 SE	E PIT MILL NO 143	KAISER EAGLE MTN INC	MILLSITE
CAMC43880	27 0030S 0140E 025 SE	E PIT MILL NO 144	KAISER EAGLE MTN INC	MILLSITE
CAMC43884	27 0030S 0140E 025 SE	E PIT MILL NO 156	KAISER EAGLE MTN INC	MILLSITE
CAMC43885	27 0030S 0140E 025 SE	E PIT MILL NO 157	KAISER EAGLE MTN INC	MILLSITE
CAMC43886	27 0030S 0140E 025 SE	E PIT MILL NO 158	KAISER EAGLE MTN INC	MILLSITE
CAMC43887	27 0030S 0140E 025 SE	E PIT MILL NO 159	KAISER EAGLE MTN INC	MILLSITE
CAMC43890	27 0030S 0140E 025 SE	E PIT MILL NO 170	KAISER EAGLE MTN INC	MILLSITE
CAMC43891	27 0030S 0140E 025 SE	E PIT MILL NO 171	KAISER EAGLE MTN INC	MILLSITE
CAMC43892	27 0030S 0140E 025 SE	E PIT MILL NO 172	KAISER EAGLE MTN INC	MILLSITE
CAMC43893	27 0030S 0140E 025 SE	E PIT MILL NO 173	KAISER EAGLE MTN INC	MILLSITE
CAMC43748	27 0030S 0140E 036 NE	E PIT MILLSITE NO 1	KAISER EAGLE MTN INC	MILL-NP
CAMC43758	27 0030S 0140E 025 SE	E PIT MILLSITE NO 11	KAISER EAGLE MTN INC	MILLSITE
CAMC43759	27 0030S 0140E 025 SW	E PIT MILLSITE NO 12	KAISER EAGLE MTN INC	MILLSITE
CAMC43760	27 0030S 0140E 025 SW	E PIT MILLSITE NO 13	KAISER EAGLE MTN INC	MILLSITE
CAMC43761	27 0030S 0140E 025 SW	E PIT MILLSITE NO 14	KAISER EAGLE MTN INC	MILLSITE
CAMC43764	27 0030S 0140E 025 SW	E PIT MILLSITE NO 17	KAISER EAGLE MTN INC	MILLSITE
CAMC43765	27 0030S 0140E 025 SW	E PIT MILLSITE NO 18	KAISER EAGLE MTN INC	MILLSITE
CAMC43766	27 0030S 0140E 025 SW	E PIT MILLSITE NO 19	KAISER EAGLE MTN INC	MILLSITE
CAMC43749	27 0030S 0140E 036 NE	E PIT MILLSITE NO 2	KAISER EAGLE MTN INC	MILL-NP
CAMC43767	27 0030S 0140E 025 SW	E PIT MILLSITE NO 20	KAISER EAGLE MTN INC	MILLSITE
CAMC43768	27 0030S 0140E 025 SW	E PIT MILLSITE NO 21	KAISER EAGLE MTN INC	MILLSITE
CAMC43771	27 0030S 0140E 025 SW	E PIT MILLSITE NO 24	KAISER EAGLE MTN INC	MILLSITE
CAMC43772	27 0030S 0140E 025 SW	E PIT MILLSITE NO 25	KAISER EAGLE MTN INC	MILLSITE
CAMC43773	27 0030S 0140E 025 SW	E PIT MILLSITE NO 26	KAISER EAGLE MTN INC	MILLSITE
CAMC43774	27 0030S 0140E 025 SW	E PIT MILLSITE NO 27	KAISER EAGLE MTN INC	MILLSITE
CAMC43775	27 0030S 0140E 025 SW	E PIT MILLSITE NO 28	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43776	27 0030S 0140E 025 SW	E PIT MILLSITE NO 29	KAISER EAGLE MTN INC	MILLSITE
CAMC43750	27 0030S 0140E 025 SE	E PIT MILLSITE NO 3	KAISER EAGLE MTN INC	MILLSITE
CAMC43778	27 0030S 0140E 025 SW	E PIT MILLSITE NO 31	KAISER EAGLE MTN INC	MILLSITE
CAMC43779	27 0030S 0140E 025 SW	E PIT MILLSITE NO 32	KAISER EAGLE MTN INC	MILLSITE
CAMC43780	27 0030S 0140E 025 SW	E PIT MILLSITE NO 33	KAISER EAGLE MTN INC	MILLSITE
CAMC43781	27 0030S 0140E 025 SW	E PIT MILLSITE NO 34	KAISER EAGLE MTN INC	MILLSITE
CAMC43782	27 0030S 0140E 025 SW	E PIT MILLSITE NO 35	KAISER EAGLE MTN INC	MILLSITE
CAMC43783	27 0030S 0140E 025 SW	E PIT MILLSITE NO 36	KAISER EAGLE MTN INC	MILLSITE
CAMC43785	27 0030S 0140E 035 NE	E PIT MILLSITE NO 38	KAISER EAGLE MTN INC	MILLSITE
CAMC43786	27 0030S 0140E 035 NE	E PIT MILLSITE NO 39	KAISER EAGLE MTN INC	MILLSITE
CAMC43751	27 0030S 0140E 025 SE	E PIT MILLSITE NO 4	KAISER EAGLE MTN INC	MILLSITE
CAMC43787	27 0030S 0140E 035 NE	E PIT MILLSITE NO 40	KAISER EAGLE MTN INC	MILLSITE
CAMC43788	27 0030S 0140E 035 NE	E PIT MILLSITE NO 41	KAISER EAGLE MTN INC	MILLSITE
CAMC43789	27 0030S 0140E 026 SE	E PIT MILLSITE NO 42	KAISER EAGLE MTN INC	MILLSITE
CAMC43790	27 0030S 0140E 026 SE	E PIT MILLSITE NO 43	KAISER EAGLE MTN INC	MILLSITE
CAMC43791	27 0030S 0140E 026 SE	E PIT MILLSITE NO 44	KAISER EAGLE MTN INC	MILLSITE
CAMC43795	27 0030S 0140E 035 NE	E PIT MILLSITE NO 48	KAISER EAGLE MTN INC	MILLSITE
CAMC43796	27 0030S 0140E 035 NE	E PIT MILLSITE NO 49	KAISER EAGLE MTN INC	MILLSITE
CAMC43752	27 0030S 0140E 025 SE	E PIT MILLSITE NO 5	KAISER EAGLE MTN INC	MILLSITE
CAMC43797	27 0030S 0140E 035 NE	E PIT MILLSITE NO 50	KAISER EAGLE MTN INC	MILLSITE
CAMC43798	27 0030S 0140E 035 NE	E PIT MILLSITE NO 51	KAISER EAGLE MTN INC	MILLSITE
CAMC43799	27 0030S 0140E 026 SE	E PIT MILLSITE NO 52	KAISER EAGLE MTN INC	MILLSITE
CAMC43800	27 0030S 0140E 035 NE	E PIT MILLSITE NO 53	KAISER EAGLE MTN INC	MILLSITE
CAMC43802	27 0030S 0140E 035 NE	E PIT MILLSITE NO 55	KAISER EAGLE MTN INC	MILLSITE
CAMC43803	27 0030S 0140E 035 NE	E PIT MILLSITE NO 56	KAISER EAGLE MTN INC	MILLSITE
CAMC43804	27 0030S 0140E 035 NE	E PIT MILLSITE NO 57	KAISER EAGLE MTN INC	MILLSITE
CAMC43805	27 0030S 0140E 035 NE	E PIT MILLSITE NO 58	KAISER EAGLE MTN INC	MILLSITE
CAMC43753	27 0030S 0140E 025 SE	E PIT MILLSITE NO 6	KAISER EAGLE MTN INC	MILLSITE
CAMC43807	27 0030S 0140E 035 NW	E PIT MILLSITE NO 60	KAISER EAGLE MTN INC	MILLSITE
CAMC43808	27 0030S 0140E 035 NW	E PIT MILLSITE NO 61	KAISER EAGLE MTN INC	MILLSITE
CAMC43810	27 0030S 0140E 035 NW	E PIT MILLSITE NO 63	KAISER EAGLE MTN INC	MILLSITE
CAMC43811	27 0030S 0140E 035 NW	E PIT MILLSITE NO 64	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43812	27 0030S 0140E 026 SW	E PIT MILLSITE NO 65	KAISER EAGLE MTN INC	MILLSITE
CAMC43813	27 0030S 0140E 035 NW	E PIT MILLSITE NO 66	KAISER EAGLE MTN INC	MILLSITE
CAMC43814	27 0030S 0140E 035 NW	E PIT MILLSITE NO 67	KAISER EAGLE MTN INC	MILLSITE
CAMC43815	27 0030S 0140E 035 NW	E PIT MILLSITE NO 68	KAISER EAGLE MTN INC	MILLSITE
CAMC43816	27 0030S 0140E 026 SW	E PIT MILLSITE NO 69	KAISER EAGLE MTN INC	MILLSITE
CAMC43754	27 0030S 0140E 025 SE	E PIT MILLSITE NO 7	KAISER EAGLE MTN INC	MILLSITE
CAMC43818	27 0030S 0140E 035 NW	E PIT MILLSITE NO 71	KAISER EAGLE MTN INC	MILLSITE
CAMC43819	27 0030S 0140E 035 NW	E PIT MILLSITE NO 72	KAISER EAGLE MTN INC	MILLSITE
CAMC43820	27 0030S 0140E 026 SW	E PIT MILLSITE NO 73	KAISER EAGLE MTN INC	MILLSITE
CAMC43821	27 0030S 0140E 026 SW	E PIT MILLSITE NO 74	KAISER EAGLE MTN INC	MILLSITE
CAMC43825	27 0030S 0140E 027 SE	E PIT MILLSITE NO 78	KAISER EAGLE MTN INC	MILLSITE
CAMC43826	27 0030S 0140E 027 SE	E PIT MILLSITE NO 79	KAISER EAGLE MTN INC	MILLSITE
CAMC43755	27 0030S 0140E 025 SE	E PIT MILLSITE NO 8	KAISER EAGLE MTN INC	MILLSITE
CAMC43828	27 0030S 0140E 034 SE	E PIT MILLSITE NO 81	KAISER EAGLE MTN INC	MILLSITE
CAMC43829	27 0030S 0140E 034 SE	E PIT MILLSITE NO 82	KAISER EAGLE MTN INC	MILLSITE
CAMC43830	27 0030S 0140E 034 SE	E PIT MILLSITE NO 83	KAISER EAGLE MTN INC	MILLSITE
CAMC43831	27 0030S 0140E 034 SE	E PIT MILLSITE NO 84	KAISER EAGLE MTN INC	MILLSITE
CAMC43832	27 0030S 0140E 034 SE	E PIT MILLSITE NO 85	KAISER EAGLE MTN INC	MILLSITE
CAMC43833	27 0030S 0140E 034 SE	E PIT MILLSITE NO 86	KAISER EAGLE MTN INC	MILLSITE
CAMC43836	27 0030S 0140E 034 SE	E PIT MILLSITE NO 89	KAISER EAGLE MTN INC	MILLSITE
CAMC43756	27 0030S 0140E 025 SE	E PIT MILLSITE NO 9	KAISER EAGLE MTN INC	MILLSITE
CAMC43837	27 0030S 0140E 034 SE	E PIT MILLSITE NO 90	KAISER EAGLE MTN INC	MILLSITE
CAMC43838	27 0030S 0140E 034 SE	E PIT MILLSITE NO 91	KAISER EAGLE MTN INC	MILLSITE
CAMC43839	27 0030S 0140E 034 SE	E PIT MILLSITE NO 92	KAISER EAGLE MTN INC	MILLSITE
CAMC43840	27 0030S 0140E 034 NE	E PIT MILLSITE NO 93	KAISER EAGLE MTN INC	MILLSITE
CAMC43841	27 0030S 0140E 034 SE	E PIT MILLSITE NO 94	KAISER EAGLE MTN INC	MILLSITE
CAMC43842	27 0030S 0140E 034 SE	E PIT MILLSITE NO 95	KAISER EAGLE MTN INC	MILLSITE
CAMC43843	27 0030S 0140E 034 SE	E PIT MILLSITE NO 96	KAISER EAGLE MTN INC	MILLSITE
CAMC43844	27 0030S 0140E 034 SE	E PIT MILLSITE NO 97	KAISER EAGLE MTN INC	MILLSITE
CAMC43845	27 0030S 0140E 034 NE	E PIT MILLSITE NO 98	KAISER EAGLE MTN INC	MILLSITE
CAMC43846	27 0030S 0140E 034 NE	E PIT MILLSITE NO 99	KAISER EAGLE MTN INC	MILLSITE
CAMC78607	27 0030S 0140E 026 SW	EAST PIT #207	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC78608	27 0030S 0140E 034 NE	EAST PIT #208	KAISER EAGLE MTN INC	MILLSITE
CAMC90153	27 0030S 0140E 031 SW	EAST PIT #217	KAISER EAGLE MTN INC	MILLSITE
CAMC90154	27 0030S 0140E 031 SW	EAST PIT #218	KAISER EAGLE MTN INC	MILLSITE
CAMC90157	27 0030S 0140E 031 SW	EAST PIT #221	KAISER EAGLE MTN INC	MILLSITE
CAMC90158	27 0030S 0140E 031 SW	EAST PIT #222	KAISER EAGLE MTN INC	MILLSITE
CAMC90162	27 0030S 0140E 031 SW	EAST PIT #226	KAISER EAGLE MTN INC	MILLSITE
CAMC90166	27 0030S 0140E 031 SW	EAST PIT #230	KAISER EAGLE MTN INC	MILLSITE
CAMC43544	27 0030S 0140E 036 SW, 27 0040S 0140E 001 NW	FLAT #1	KAISER EAGLE MTN INC	PLACER
CAMC144076	27 0030S 0140E 031 NW	ICL 1	KAISER EAGLE MTN INC	LODE
CAMC144077	27 0030S 0130E 036 NW	ICL 2	KAISER EAGLE MTN INC	LODE
CAMC144078	27 0030S 0130E 036 SW	ICL 3	KAISER EAGLE MTN INC	LODE
CAMC144079	27 0030S 0130E 036 SW,SE	ICL 4	KAISER EAGLE MTN INC	LODE
CAMC144080	27 0030S 0130E 036 SE	ICL 5	KAISER EAGLE MTN INC	LODE
CAMC144081	27 0030S 0130E 036 SE; 27 0030S 0140E 031 SW	ICL 6	KAISER EAGLE MTN INC	LODE
CAMC144082	27 0030S 0140E 031 SW	ICL 7	KAISER EAGLE MTN INC	LODE
CAMC144083	27 0030S 0140E 031 NW,SW	ICL 8	KAISER EAGLE MTN INC	LODE
CAMC144084	27 0030S 0140E 031 NW	ICL 9	KAISER EAGLE MTN INC	LODE
CAMC43587	27 0030S 0140E 033 NW	IRON NO 42	KAISER EAGLE MTN INC	LODE
CAMC43554	27 0030S 0140E 029 NW,SW; 27 0030S 0140E 030 NW,SE	LUCKY BOY	KAISER EAGLE MTN INC	LODE
CAMC43556	27 0030S 0140E 029 NW,SW; 27 0030S 0140E 030 NE	LUCKY BOY FRACT #2	KAISER EAGLE MTN INC	LODE
CAMC43555	27 0030S 0140E 030 NE	LUCKY BOY FRACTION	KAISER EAGLE MTN INC	LODE
CAMC291168	27 0030S 0130E 021 SE; 27 0030S 0130E 028 NE	MIDDLE CAMP	FIRST CLASS MINERS INC	PLACER
CAMC311287	27 0030S 0130E 027 NE	MIDDLE CAMP EAST	SIMMONS SUSAN, DRAKE CRAIG, DRAKE DIANA, HERRING GREG	PLACER
CAMC298397	27 0030S 0130E 021 SE, 27 0030S 0130E 028 NE	MIDDLE CAMP WEST	FIRST CLASS MINERS INC	PLACER
CAMC43545	27 0030S 0140E 035 NE	NORTH #4	KAISER EAGLE MTN INC	LODE
CAMC43546	27 0030S 0140E 035 NE,NW	NORTH #5	KAISER EAGLE MTN INC	LODE
CAMC43547	27 0030S 0140E 035 NW	NORTH #6	KAISER EAGLE MTN INC	LODE
CAMC43548	27 0030S 0140E 034 NE, 27 0030S 0140E 035 NW	NORTH #7	KAISER EAGLE MTN INC	LODE
CAMC43550	27 0030S 0140E 035 NE,NW	NORTH DUMP NO 1	KAISER EAGLE MTN INC	LODE
CAMC43551	27 0030S 0140E 035 NW	NORTH DUMP NO 2	KAISER EAGLE MTN INC	LODE
CAMC43585	27 0030S 0140E 019 SW	NORTH FRACTION	KAISER EAGLE MTN	LODE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
			INC	
CAMC43549	27 0030S 0140E 035 NE	NORTH NO 10	KAISER EAGLE MTN INC	LODE
CAMC43588	27 0030S 0140E 027 SW,SE; 27 0030S 0140E 028 SW	NORTH NO 14	KAISER EAGLE MTN INC	LODE
CAMC43589	27 0030S 0140E 027 SW,SE; 27 0030S 0140E 034 NE,NW	NORTH NO 15	KAISER EAGLE MTN INC	LODE
CAMC43590	27 0030S 0140E 027 SW,SE	NORTH NO 16	KAISER EAGLE MTN INC	LODE
CAMC43591	27 0030S 0140E 027 SW	NORTH NO 17	KAISER EAGLE MTN INC	LODE
CAMC43592	27 0030S 0140E 027 SW	NORTH NO 18	KAISER EAGLE MTN INC	LODE
CAMC43594	27 0030S 0140E 027 SW; 27 0030S 0140E 028 SE	NORTH NO 20	KAISER EAGLE MTN INC	LODE
CAMC43595	27 0030S 0140E 027 SW; 27 0030S 0140E 028 SE	NORTH NO 21	KAISER EAGLE MTN INC	LODE
CAMC43596	27 0030S 0140E 027 SW; 27 0030S 0140E 028 SE	NORTH NO 22	KAISER EAGLE MTN INC	LODE
CAMC43597	27 0030S 0140E 028 SE	NORTH NO 23	KAISER EAGLE MTN INC	LODE
CAMC43598	27 0030S 0140E 028 NE,SE	NORTH NO 24	KAISER EAGLE MTN INC	LODE
CAMC43599	27 0030S 0140E 028 NE,SE	NORTH NO 25	KAISER EAGLE MTN INC	LODE
CAMC43600	27 0030S 0140E 028 NW,SW,SE	NORTH NO 26	KAISER EAGLE MTN INC	LODE
CAMC43601	27 0030S 0140E 028 NE,NW,SW,SE	NORTH NO 27	KAISER EAGLE MTN INC	LODE
CAMC43603	27 0030S 0140E 028 NW,SW	NORTH NO 29	KAISER EAGLE MTN INC	LODE
CAMC43604	27 0030S 0140E 028 NW	NORTH NO 31	KAISER EAGLE MTN INC	LODE
CAMC43605	27 0030S 0140E 028 NW,SW; 27 0030S 0140E 029 NE,SE	NORTH NO 32	KAISER EAGLE MTN INC	LODE
CAMC43606	27 0030S 0140E 029 NE	NORTH NO 35	KAISER EAGLE MTN INC	LODE
CAMC43607	27 0030S 0140E 027 SE; 27 0030S 0140E 034 NE	NORTH NO 38	KAISER EAGLE MTN INC	LODE
CAMC43608	27 0030S 0140E 027 SE; 27 0030S 0140E 034 NE	NORTH NO 39	KAISER EAGLE MTN INC	LODE
CAMC43609	27 0030S 0140E 027 SE	NORTH NO 40	KAISER EAGLE MTN INC	LODE
CAMC306519	27 0030S 0130E 034 SE, 27 0030S 0130E 035 NW,SW	PERMENES #1	ANTHONY STEVE	LODE
CAMC306520	27 0030S 0130E 035 SW, 27 0040S 0130E 002 SW	PERMENES #2	ANTHONY STEVE	LODE
CAMC43535	27 0030S 0150E 031 NW,SW	PRICE NO 5	KAISER EAGLE MTN INC	LODE
CAMC43536	27 0030S 0150E 031 SW	PRICE NO 7	KAISER EAGLE MTN INC	LODE
CAMC43713	27 0040S 0150E 006 NE	S E MILLSITE NO 110	KAISER EAGLE MTN INC	MILLSITE
CAMC43714	27 0040S 0150E 006 NE	S E MILLSITE NO 111	KAISER EAGLE MTN INC	MILLSITE
CAMC43715	27 0040S 0150E 006 NE	S E MILLSITE NO 112	KAISER EAGLE MTN INC	MILLSITE
CAMC43716	27 0040S 0150E 006 NE	S E MILLSITE NO 113	KAISER EAGLE MTN INC	MILLSITE
CAMC43717	27 0040S 0150E 006 NE	S E MILLSITE NO 115	KAISER EAGLE MTN INC	MILLSITE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43718	27 0040S 0150E 006 NE	S E MILLSITE NO 116	KAISER EAGLE MTN INC	MILLSITE
CAMC43719	27 0040S 0150E 006 NE	S E MILLSITE NO 118	KAISER EAGLE MTN INC	MILLSITE
CAMC43720	27 0040S 0150E 006 NE	S E MILLSITE NO 119	KAISER EAGLE MTN INC	MILLSITE
CAMC43721	27 0040S 0150E 006 SE	S E MILLSITE NO 153	KAISER EAGLE MTN INC	MILLSITE
CAMC43722	27 0040S 0150E 006 SE	S E MILLSITE NO 154	KAISER EAGLE MTN INC	MILLSITE
CAMC43723	27 0040S 0150E 006 SE	S E MILLSITE NO 156	KAISER EAGLE MTN INC	MILLSITE
CAMC43724	27 0040S 0150E 006 SE	S E MILLSITE NO 157	KAISER EAGLE MTN INC	MILLSITE
CAMC43725	27 0040S 0150E 006 SE	S E MILLSITE NO 158	KAISER EAGLE MTN INC	MILLSITE
CAMC43726	27 0040S 0150E 006 SE	S E MILLSITE NO 159	KAISER EAGLE MTN INC	MILLSITE
CAMC43727	27 0040S 0150E 006 SE	S E MILLSITE NO 161	KAISER EAGLE MTN INC	MILLSITE
CAMC43728	27 0040S 0150E 006 SE	S E MILLSITE NO 162	KAISER EAGLE MTN INC	MILLSITE
CAMC43729	27 0040S 0150E 006 SE	S E MILLSITE NO 163	KAISER EAGLE MTN INC	MILLSITE
CAMC43730	27 0040S 0150E 006 SE	S E MILLSITE NO 164	KAISER EAGLE MTN INC	MILLSITE
CAMC43731	27 0040S 0150E 006 SE	S E MILLSITE NO 166	KAISER EAGLE MTN INC	MILLSITE
CAMC43732	27 0040S 0150E 006 SE	S E MILLSITE NO 167	KAISER EAGLE MTN INC	MILLSITE
CAMC43733	27 0040S 0150E 006 SE	S E MILLSITE NO 168	KAISER EAGLE MTN INC	MILLSITE
CAMC43734	27 0040S 0150E 006 SE	S E MILLSITE NO 169	KAISER EAGLE MTN INC	MILLSITE
CAMC43735	27 0040S 0150E 006 SE	S E MILLSITE NO 170	KAISER EAGLE MTN INC	MILLSITE
CAMC43736	27 0040S 0150E 006 SE	S E MILLSITE NO 171	KAISER EAGLE MTN INC	MILLSITE
CAMC43737	27 0040S 0140E 001 SE	S E MILLSITE NO 172	KAISER EAGLE MTN INC	MILLSITE
CAMC43738	27 0040S 0140E 001 SE	S E MILLSITE NO 173	KAISER EAGLE MTN INC	MILLSITE
CAMC43739	27 0040S 0140E 001 SE	S E MILLSITE NO 174	KAISER EAGLE MTN INC	MILLSITE
CAMC43740	27 0040S 0140E 006 SW	S E MILLSITE NO 175	KAISER EAGLE MTN INC	MILL-NP
CAMC43741	27 0040S 0140E 006 SW	S E MILLSITE NO 176	KAISER EAGLE MTN INC	MILL-NP
CAMC43742	27 0040S 0140E 006 NE	S E MILLSITE NO 177	KAISER EAGLE MTN INC	MILL-NP
CAMC43743	27 0040S 0140E 006 NE	S E MILLSITE NO 178	KAISER EAGLE MTN INC	MILL-NP
CAMC43744	27 0040S 0140E 006 NE	S E MILLSITE NO 179	KAISER EAGLE MTN INC	MILL-NP
CAMC43745	27 0040S 0140E 006 NE	S E MILLSITE NO 180	KAISER EAGLE MTN INC	MILL-NP
CAMC43746	27 0040S 0140E 006 NE	S E MILLSITE NO 181	KAISER EAGLE MTN INC	MILL-NP
CAMC43586	27 0030S 0140E 028 SW	SANDWICH NO 2	KAISER EAGLE MTN INC	LODE
CAMC43537	27 0030S 0150E 031 SW	SCOTT NO 4	KAISER EAGLE MTN INC	LODE
CAMC43538	27 0030S 0150E 031 SW	SCOTT NO 5	KAISER EAGLE MTN INC	LODE

Serial Number	Mer Twn Rng Sec Quad	Claim Name	Claimant(s)	Casetype
CAMC43539	27 0030S 0150E 031 SW	SCOTT NO 6	KAISER EAGLE MTN INC	LODE
CAMC43540	27 0030S 0150E 031 SW	SCOTT NO 7	KAISER EAGLE MTN INC	LODE
CAMC43541	27 0030S 0150E 031 SW	SCOTT NO 8	KAISER EAGLE MTN INC	LODE
CAMC43542	27 0030S 0150E 031 SW	SCOTT NO 9	KAISER EAGLE MTN INC	LODE
CAMC43708	27 0040S 0140E 012 NW	SOUTH MILLSITE NO 26	KAISER EAGLE MTN INC	MILL-NP
CAMC43709	27 0040S 0140E 012 NW	SOUTH MILLSITE NO 27	KAISER EAGLE MTN INC	MILL-NP
CAMC43710	27 0040S 0140E 012 NW	SOUTH MILLSITE NO 28	KAISER EAGLE MTN INC	MILL-NP
CAMC43711	27 0040S 0140E 012 NW	SOUTH MILLSITE NO 29	KAISER EAGLE MTN INC	MILL-NP
CAMC43712	27 0040S 0140E 012 NW	SOUTH MILLSITE NO 30	KAISER EAGLE MTN INC	MILL-NP
CAMC311995	27 0030S 0130E 027 NE	TWO BIRDS	KLIEWER JOSHUA KLIEWER RONALD L JR KLIEWER SILAS	PLACER
CAMC43557	27 0030S 0140E 030 NW,SW	WINFIELD	KAISER EAGLE MTN INC	LODE
CAMC43558	27 0030S 0140E 030 SW	WINFIELD NO 1	KAISER EAGLE MTN INC	LODE
CAMC43567	27 0030S 0140E 032 NW; 27 0030S 0140E 029 SW; 27 0030S 0140E 031 NE	WINFIELD NO 11	KAISER EAGLE MTN INC	LODE
CAMC43568	27 0030S 0140E 032 NW; 27 0030S 0140E 029 SW; 27 0030S 0140E 030 SE	WINFIELD NO 12	KAISER EAGLE MTN INC	LODE
CAMC43569	27 0030S 0140E 029 SW; 27 0030S 0140E 030 SE	WINFIELD NO 13	KAISER EAGLE MTN INC	LODE
CAMC43570	27 0030S 0140E 029 SW,SE	WINFIELD NO 14	KAISER EAGLE MTN INC	LODE
CAMC43571	27 0030S 0140E 029 SW; 27 0030S 0140E 032 NW	WINFIELD NO 15	KAISER EAGLE MTN INC	LODE
CAMC43584	27 0030S 0140E 029 SE; 27 0030S 0140E 032 NE	WINFIELD NO 19	KAISER EAGLE MTN INC	LODE
CAMC43559	27 0030S 0130E 025 NE; 27 0030S 0140E 030 NW	WINFIELD NO 2	KAISER EAGLE MTN INC	LODE
CAMC43563	27 0030S 0140E 030 SE	WINFIELD NO 7	KAISER EAGLE MTN INC	LODE
CAMC43564	27 0030S 0140E 030 SE; 27 0030S 0140E 031 NE	WINFIELD NO 8	KAISER EAGLE MTN INC	LODE
CAMC43526	27 0030S 0150E 031 SW,SE; 27 0040S 0150E 006 NE	YUCCA # 1	KAISER EAGLE MTN INC	LODE
CAMC43527	27 0030S 0150E 031 SE, 27 0040S 0150E 006 NE	YUCCA # 2	KAISER EAGLE MTN INC	LODE

Source: BLM 2015b

APPENDIX E: Sensitive Species Lists

Existing or Potential Special Status Animal and Plant Species in Study Area

Species	Federal Status	State Status	Other Status	Likelihood of Occurrence
Insects				
Cheeseweed owlfly (*Oliarces clara*)	BLM sensitive		-	Possible
Amphibians and Reptiles				
Couch's spadefoot (*Scaphiopus couchii*)	BLM sensitive	SSC	-	Possible
Coachella Valley fringe-toed lizard (*Uma inornata*)	FT	SE	-	Possible. Lizard observed but exact species is unverified.
Mojave fringe-toed Lizard (*Uma scoparia*)	BLM Sensitive	SSC	-	Possible. Lizard observed but exact species is unverified.
Common Chuckwalla (*Sauromalus ater*)	BLM sensitive		-	Present and observed
Desert rosy boa (*Charina trivirgata gracia*)	BLM sensitive	SCC	-	Possible
Desert tortoise (*Gopherus agassizii*)	FT	ST	-	Present and observed
Birds				
Bendire's thrasher (*Toxostoma bendirei*)	BCC, BLM Sensitive		-	Possible
Crissal thrasher (Toxostoma crissale)	BCC	SSC	-	Unlikely, but possible. Not observed.
Gila woodpecker (Melanerpes uropygialis)	BCC	E	-	Possible, not observed.
LeConte's thrasher (*Toxostoma lecontei*)	-	SSC	-	Possible, not observed.
Loggerhead shrike (*Lanius ludovicianus*)	BCC	SSC	-	Common, observed
Mountain plover (*Charadrius montanus*)	BCC, BLM Sensitive	SCC	ABC:WLBCC	Unlikely, but possible winter visitor.
Sonoran yellow warbler (*Dendroica petechia sonorana*)	BCC	SSC	-	Possible throughout but limited habitat. Observed.
Vermilion flycatcher (*Pyrocephalus rubinus*)	-	SCC	-	Highly unlikely except as transient, limited habitat, not observed
Yellow-breasted chat (*Icteria virens*)	-	SSC	-	Highly unlikely except as transient, limited habitat, not observed
Yellow-billed cuckoo (*Coccyzus americanus*)	FT	SE	-	Highly unlikely except as transient, limited habitat, not observed
Southwestern willow flycatcher (*Empidonax traillii*)	FE	SE	-	Highly unlikely except as transient, limited habitat, not observed
Coastal California gnatcatcher (*Polioptila californica californica*)	FT	SCC	-	Highly unlikely except as transient, limited habitat, not observed
Yuma clapper rail (*Rallus obsoletus yumanensis (R. longirostris y.*)	FE	ST	-	Highly unlikely except as transient, limited habitat, not observed
California least tern (*Sternula antillarum browni*)	FE	SE	-	Highly unlikely except as transient, limited habitat,

Existing or Potential Special Status Animal and Plant Species in Study Area

Species	Federal Status	State Status	Other Status	Likelihood of Occurrence
				not observed
Least Bell's vireo Vireo (*Bellii pusillus*)	FE	SE	-	Hi Highly unlikely except as transient, limited habitat, not observed
Raptors				
Short-eared owl (*Asio flammeus*)		SSC	ABC:WLBC	Possible winter visitor
Burrowing owl (*Athene cunicularia*)	BCC, BLM Sensitive	SSC	-	Observed
American peregrine Falcon (*Falco peregrinus anatum*)	BCC	SE, Fully protected	-	Possible, not observed
Prairie Falcon (*Falco mexicanus*)	BCC	WL	-	Likely, not observed
Ferruginous hawk (*Buteo regalis*)	BCC, BLM Sensitive	WL	-	Possible winter resident only
Northern Harrier (*Circus cyaneus*)	-	SSC	-	Possible, not observed
Golden eagle (*Aquila chrysaetos*)	BCC, BLM Sensitive	WL, Fully Protected	-	Possible foraging and nesting habitat
Bald eagle (*Haliaeetus leucocephalus*)	Delisted	Delisted	-	Highly unlikely except as transient
Mammals				
Big free-tailed bat (*Nyctinomops macrotis*)		SCC	WBWG:MH	Possible forager on site
California leaf-nosed bat (Macro*tus californicus*)	BLM Sensitive	SCC	WBWG:H	Possible
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)		SSC	WBWG:M	Possible
Spotted Bat (*Euderma maculatum*)	BLM Sensitive	SSC	WBWG:H	Possible
Townsend's big-eared Bat (*Corynorhinus townsendii*)	BLM Sensitive	SSC	WBWG:H	Possible
Western mastiff bat (*Eumops perotis californicus*)	BLM Sensitive	SCC	WBWG:H	Highly likely
Pallid Bat (*Antrozous pallidus*)	BLM/FS	CSC	-	Possible
Colorado valley woodrat (*Neotoma albigula venusta*)	-	-	-	Possible
American badger (*Taxidea taxus*)	-	SCC	-	Present, observed
Burro deer (*Odocoileus hemionus eremicus*)	-	Game species	-	Present, observed
Nelson's bighorn sheep (*Ovis canadensis nelsoni*)	BLM Sensitive, NPS SMC	Game species	-	Present, observed
Vegetation				
Ammoselinum giganteum	-	-	-	Possible
Las Animas columbrina (*Colubrina californica*)	-	S2, S3	CNPS 2B.3, G4	Highly likely

Existing or Potential Special Status Animal and Plant Species in Study Area

Species	Federal Status	State Status	Other Status	Likelihood of Occurrence
Alverson's foxtail cactus (*Coryphantha alversonii*)	-	S3	CNPS 4.3, G3	Highly likely
Alkali mariposa-lily (*Calochortus striatus*)	BLM		CNPS 1B.2	Possible but not likely
Allium parishii Wats.	JOTR rare	S3.3	CNPS 4.3, G3	Possible
Aloysia wrightii Abrams	JOTR rare	S3.3	CNPS 4.3, G5	Possible
Alverson's foxtail cactus (*Coryphantha alversonii*)	-	-	-	Highly likely
Androstephium breviflorum Wats.	JOTR rare	S2, S3	CNPS 2.2, G5	Possible
Astragalus aridus A. Gray	JOTR Watchlist, JOTR rare	-	-	Highly likely, occurs nearby
Astragalus nutans M.E. Jones	JOTR rare	S3.3	CNPS 4.3, G3	Possible
Astragalus tricarinatus Gray	FE, JOTR rare	S1.2	CNPS 1B.2, G1	Possible
Ayenia compacta Rose	JOTR rare	S3	CNPS 2.3, G4	Highly likely, occurs nearby
Castela emoryi (Gray) Moran & Felger	JOTR rare	S2S3	CNPS 2.3, G3	Highly likely, occurs nearby
Chamaesyce abramsiana (Wheeler) Koutnik	-	S1.2	CNPS 2.2, G4	Possible
Coachella Valley milk-vetch *(Astragalus lentiginosus* var. *coachellae)*	FE	-	-	Possible
Colubrina californica Jtn.	JOTR rare	S2, S3.3	CNPS 2.3, G4	Highly likely, occurs nearby

Existing or Potential Special Status Animal and Plant Species in Study Area

Species	Federal Status	State Status	Other Status	Likelihood of Occurrence
Coryphantha alversonii (Coult.) Orcutt	JOTR rare	S3.2	CNPS 4.3, G3	Highly likely, occurs nearby
Condalia globosa var. pubescens	-	-	CNPS 4.2	Possible
Cryptantha costata Brandegee	JOTR rare	S3.3	CNPS 4.3, G4, G5	Highly likely, occurs nearby
Cylindropuntia chuckwallensis	JOTR rare JOTR watchlist	-	-	Highly likely, occurs nearby
Cryptantha holoptera	-	-	CNPS 4.3	Possible
Ditaxis serrata var. *californica* (Brandegee) V.W. Steinm. & Felger	JOTR rare	S2	CNPS 3.2, G5	Possible
Emory's crucifixion-thorn (*Castela emoryi*)	-	S2S3	CNPS 2B.2, G3, G4	Possible
Eriastrum harwoodii (T.T. Craig) D. Gowen	JOTR rare	S2	CNPS 1B.2, G2	Highly likely, occurs nearby
Eschscholzia androuxii	JOTR rare	-	-	Highly likely, occurs nearby
Funastrum utahense (Engelm.) Liede & Meve	JOTR rare	S3.2	CNPS 4.2, G4	Highly likely
Galium munzii Hilend. & Howell	JOTR rare	S3.3	CNPS 4.3, G4, G5	Possible
Grusonia parishii (Orcutt) Pinkava	JOTR rare	S2	CNPS 2.2, G3, G4	Possible
Harwood's milk vetch (*Astragalus insularis var. harw*)	-	-	CNPS 2B.2	Possible
Mentzelia puberula J. Darl.	JOTR rare	S2	CNPS 2.2, G4	Possible

Existing or Potential Special Status Animal and Plant Species in Study Area

Species	Federal Status	State Status	Other Status	Likelihood of Occurrence
Nemacaulis denudata var. *gracilis* Goodman & L.D. Benson	JOTR rare	S2	CNPS 2.2, G3, G4	Highly likely
Parish's club cholla (*Grusonia parishii)*	-	-	CNPS 2B.2	Present
Parish's daisy *(Erigeron parishii)*	FT	-	-	Possible, potential habitat
Polygala acanthoclada A. Gray	JOTR rare	S1	CNPS 2.3, G4	Highly likely
Proboscidea althaeifolia	-	-	CNPS 4.3	Possible
Selaginella eremophila	JOTR rare	S2S3	CNPS 2B.2, G4	Highly likely, occurs nearby
Salvia greatae	-	-	CNPS 1B.3	Possible
Spearleaf Matelea parvifolia (Torr.) Woodson	JOTR rare	S2.2	CNPS 2.3, G5	Highly likely
Tetracoccus hallii Bdg.	JOTR rare	State S3.3	CNPS 4.3, G4	Highly likely
Teucrium cubense ssp. depressum	-	-	CNPS 2B.2	Possible
Triple-ribbed milk-vetch *(Astragalus tricarinatus)*	FE	-	-	Possible, potential habitat

Status Code	Listing
FE	Federally Endangered
FT	Federally Threatened
SE	State Endangered
ST	State Threatened
Federal BCC	FWS Bird of Conservation Concern
State SSC	California DFG Species of Special Concern (be vulnerable to extinction)
State Fully Protected	Species that cannot be taken without authorization from Fish and Game Commission
State WL	Watchlist species: species that are not SSC, state-listed, or fully protected
BLM Sensitive	Species under review, rare, with limited geographic range or habitat associations, or declining
NPS SMC	NPS species of special management concern (SMC)
JOTR rare	Species of management concern for Joshua Tree National Park and also on CNPS list
JOTR watchlist	Species of management concern for Joshua Tree National Park but not on rare plant lists
ABC:WLBCC	American Bird Conservancy United States Watchlist of Birds of Conservation Concern

Existing or Potential Special Status Animal and Plant Species in Study Area

Species	Federal Status	State Status	Other Status	Likelihood of Occurrence
WBWG	WBWG – Western Bat Working Group H – High Priority – These species should be considered the highest priority for funding, planning, and conservation actions M – Medium Priority – These species warrant closer evaluation, more research, and conservation actions of both the species and the threats L- Low Priority – Most of the existing data support stable populations of the species and that the potential for major changes in status is unlikely.			
CNPS 1A	California Rare Plant Rank 1A (formerly List 1A): Plants Presumed Extinct in California			
CNPS 1B	California Rare Plant Rank 1B (formerly List 1B): Plants Rare, Threatened, or Endangered in California and Elsewhere			
CNPS 2	California Rare Plant Rank 2 (formerly List 2): Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere			
CNPS 3	California Rare Plant Rank 3 (formerly List 3): Plants About Which We Need More Information - A Review List			
CNPS 4	California Rare Plant Rank 4 (formerly List 4): Plants of Limited Distribution - A Watch List			
California Rare Plant Threat Ranks: 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat) 0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat) 0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat)				
G1	Global Rank, Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors			
G2	Global Rank, Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.			
G3	Global Rank, Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.			
G4	Global Rank, Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.			
G5	Global Rank, Demonstrably Secure—Common; widespread and abundant.			
S1	State Rank, Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.			
S2	State Rank, Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.			
S3	State Rank, Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.			
S4	State Rank, Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.			
S5	State Rank, Secure—Common, widespread, and abundant in the state.			
CNDDB ELEMENT RANKING. Global rank (G-rank) is a reflection of the overall status of an element throughout its global range. Both Global and State ranking (S-rank) represent a letter+number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heavier on Rarity than the other two. State Ranking is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.				

National Park Service
U.S. Department of the Interior

Joshua Tree National Park

Finding of No Significant Impact
Eagle Mountain Boundary Study including Possible Land Withdrawal Environmental Assessment
DECEMBER 2016

Introduction

This Finding of No Significant Impact (FONSI) has been prepared in accordance with the National Environmental Policy Act (NEPA) for *the Eagle Mountain Boundary Study Including Possible Land Withdrawal Environmental Assessment* (Boundary Study/EA) for an area within the Eagle Mountains, adjacent to Joshua Tree National Park, in Riverside County, California (study area). The Boundary Study/EA was prepared in cooperation with the Bureau of Land Management (BLM) and examines the feasibility of including approximately 31,500 acres of land into Joshua Tree National Park.

This FONSI documents the determination of the National Park Service (NPS) that resources evaluated through this study meet the criteria for a proposed boundary adjustment to Joshua Tree National Park. It describes the selected action and provides an explanation of why it will have no significant effects on the human environment. The FONSI is accompanied by a Response to Comments (Appendix A) and a Final EA with corrections. These documents constitute the record of the environmental impact analysis and decision-making process for the project for the NPS. This FONSI does not change the park boundary. Subsequent action, as described in the Selected Alternative section below, would be needed to officially change the boundary of the park.

Although the Boundary Study/EA serves as the required environmental analysis for the possible withdrawal and transfer of up to 22,500 acres of BLM-managed lands within the study area to the NPS as authorized by provisions of the Land and Water Conservation Fund Act[1] and the Federal Land Policy and Management Act[2] (FLPMA), this FONSI does not document BLM's decision on the proposed withdrawal. The BLM will issue a separate FONSI that documents its decision on whether the withdrawal and transfer would have a significant effect on the human environment. In addition, if the Department of the Interior determines that it is appropriate to proceed with the withdrawal and transfer, the Department will authorize the publication of a public land order in the Federal Register directing the transfer.

[1] The Land and Water Conservation Fund Act authorizes NPS to accept an administrative transfer of lands from another federal agency for inclusion with an adjacent national park unit. See 54 U.S.C. § 100506(c)(1)(B) (formerly found at 16 U.S.C. § 460l-9(c)(1)(ii)).

[2] The Federal Land Policy and Management Act authorizes the Secretary to transfer jurisdiction over federal lands. See 43 U.S.C. §§ 1702(j), 1714 and 43 C.F.R. § 2310.1-2.

Background

Much of the study area was part of Joshua Tree National Monument when designated in 1936. The presence of patented mining claims containing substantial deposits of iron ore led to the removal of this area for mineral extraction purposes in 1950. The federal lands that were removed from the monument were transferred to the BLM for administration. From 1948 to 1983, Kaiser Steel Corporation operated the Eagle Mountain Mine in this area where it extracted iron ore to supply its steel mill in Fontana, California. During this time it was the largest iron mine in the western United States. Ultimately, four large open pits of between one to two miles in length were constructed by Kaiser Steel Corporation. Full-scale iron ore mining ceased in 1983, although limited mining of surface materials continues today.

In 1989, Kaiser Eagle Mountain, Inc. (Kaiser) and Mine Reclamation Corporation proposed to develop the Eagle Mountain Landfill and Recycling Project in the Eagle Mountains in around the Eagle Mountain Mine. They also proposed renovation of the nearby Eagle Mountain Townsite to support landfill operations. To facilitate the landfill project, Kaiser proposed a land exchange to acquire some of the public lands managed by the BLM (3,481 acres) in the project area and the federal reversionary interest in the Eagle Mountain Townsite. BLM approved the land exchange in 1999. Litigation challenging the land exchange was filed soon thereafter. While the litigation was ongoing, Kaiser and its partners entered into an agreement with the Sanitation Districts of Los Angeles County to take over the project. The federal courts ultimately found deficiencies in BLM's process for approving the land exchange. Before BLM could correct the deficiencies identified by the courts, the Sanitation Districts of Los Angeles County in 2013 announced that it would no longer pursue acquisition of the Eagle Mountain landfill project. These developments effectively ended the viability of the landfill project. In December 2014, the litigation concluded when the federal district court issued a final judgment and order returning the exchanged federal lands in the Eagle Mountain area to the BLM. The returned lands and the other BLM managed lands within the area and surrounding region continue to be available to various development proposals, including a current plan for a pumped storage hydroelectric project approved by Federal Regulatory Energy Commission (FERC).

While some portions of the Eagle Mountain area have been disturbed as a result of mining operations, most of the lands within the study area remain undeveloped and in federal ownership. The Eagle Mountain area contains resources and values fundamental to the established purpose of Joshua Tree National Park. Such resources and values include: desert tortoise (*Gopherus agassizii*) and desert bighorn sheep (*Ovis canadensis nelsonii*) habitat and other habitat types important for maintaining biological diversity and healthy ecosystem function; interconnectivity of California desert lands; wilderness values and accessibility; dark night skies; desert landforms; and recreational opportunities. Historic resources associated with the Eagle Mountain Mine and Townsite, the Colorado River Aqueduct, and General Patton's World War II Desert Training Center may provide opportunities to expand the rich history interpreted at Joshua Tree National Park.

Purpose and Need

The purpose of this study and environmental assessment is to evaluate the suitability and feasibility of the addition of approximately 31,500 acres of land in the Eagle Mountain area for inclusion in Joshua Tree National Park. The purpose of the proposed withdrawal and transfer, if determined appropriate, is to complete an administrative transfer of up to 22,500 acres of public lands from the BLM to the NPS in accordance with FLPMA and the Land and Water Conservation Fund Act (LWCF) (54 U.S.C. 100506(c)(1)(B)) for administration as part of Joshua Tree National Park. If approved by the Department of the Interior, the transfer would protect the transferred lands from further settlement, sale, location, and entry under the public land laws, including the United States mining laws, and from further leasing or other disposition under the mineral and geothermal leasing laws.

There is a need to protect the area from further mineral exploration and development to prevent the loss of resources and public enjoyment opportunities related to the purpose of Joshua Tree National Park. The cumulative and synergistic effect of changes in land use to the region as a result of energy development, urbanization, and the effects of climate change have the potential to dramatically impact the protection of biodiversity within Joshua Tree National Park. In recent years the California desert has become an important location for renewable energy facilities. Secretary of the Interior Kenneth Salazar signed Secretarial Order No. 3285 in March 2009 making renewable energy production a top priority for the Department of the Interior and the Bureau of Land Management (BLM). The State of California has enacted renewable resource goals to increase the percentage of renewable energy generation to 50 percent by 2030. In an effort to meet both state and national goals for renewable energy, a large number of renewable energy projects have been approved and more are proposed on BLM-managed land, State-owned land, and private land in the California desert, particularly in the Eagle Mountain area.

The Eagle Mountain area remains a key building block for landscape-scale conservation in the California desert. Inclusion of the study area in the national park boundary could help to achieve landscape-scale conservation objectives for the unique California desert region. In addition, the study area: 1) contains areas important for maintaining wilderness values, biodiversity, and other natural values within Joshua Tree National Park; 2) includes cultural resources that expand on cultural themes interpreted at the national park; and 3) offers new opportunities for public enjoyment. The boundary study is needed for the following reasons:

- Formerly included within the boundary of Joshua Tree National Monument when established in 1936, the area of study is bounded on three sides by national park lands, including the most pristine wilderness areas of the park. Values include dark night skies, high air quality, and natural quiet, all of which could be affected by proposed future uses of the area.
- Regional development projects, urbanization, and the effects of climate change will pose additional challenges to maintaining park biodiversity. Although some portions of the study area have been developed and altered to support the area's former mining operations, the majority of the study area lands (roughly 80%) are primarily undeveloped, containing regionally important habitat and migration corridors for rare and threatened wildlife that inhabit Joshua Tree National Park. In addition, some natural recovery of the area has begun in areas that were previously mined. Landscape-scale conservation approaches that include opportunities to protect regional wildlife corridors will be an important component in addressing threats to park biodiversity.
- Future use and development of study area lands and surrounding areas in the Chuckwalla Valley could affect important water resources within the park. Joshua Tree National Park's aquifers are hydraulically connected to aquifers in the Eagle Mountain area.
- The study area contains historic resources such as the Eagle Mountain Mine and Townsite which may provide opportunities to expand the mining history currently interpreted in Joshua Tree National Park. Other historic resources include features related to the development of the Colorado River Aqueduct and portions of General Patton's extensive World War II Desert Training Center. There is also high potential for discovery of archeological resources related to the area's long history of human use.
- The study area provides opportunities to expand public enjoyment at Joshua Tree National Park. In addition to the area's interpretive value, visitor opportunities include improved access to some of the most remote areas of the park, and the potential for introducing new recreational opportunities.

- Administratively, the site's proximity to Interstate 10 could improve NPS access to the southeastern end of the park, providing park resource managers with new avenues to monitor and study resources in these areas.

Study Findings

Chapter 2 of the Boundary Study/EA contains a boundary adjustment criteria analysis that evaluates the properties under consideration according to criteria set forth in Section 3.5 of NPS *Management Policies* 2006. A summary of this analysis follows. Study area lands west of the Colorado River Aqueduct and associated properties contain resources and public enjoyment opportunities related to the purpose of Joshua Tree National Park and are suitable for inclusion in the park boundary. This includes approximately 28,600 acres of lands within the federal, private, State School lands, Townsite, and Eagle Mountain School parcel groups. Adding the study area lands to the Joshua Tree National Park boundary would also improve access to the east side of the park, create a more logical boundary delineation, and allow access to NPS staff to monitor and document the resources of the area.

Of these suitable lands, the Boundary Study/EA originally determined that most lands within the study area (~25,070 acres) were feasible as additions to Joshua Tree National Park. Included were ~22,515 acres of federal land, ~2,230 acres of private land west of the proposed pumped storage hydroelectric project that were thought to be available for donation to the NPS by the Eagle Crest Energy Company and its affiliates within several years, and ~325 acres of State School lands that were thought to be available from the State of California within several years.

As a result of public and agency review of the Boundary Study/EA, the acreage of federal lands deemed currently feasible for transfer was reduced from ~22,515 acres to ~17,670 acres to address concerns raised by Eagle Crest Energy Company and the Bureau of Land Management regarding the effects of the proposed Alternative C on BLM's ability to consider a right of way application for the Eagle Mountain Pumped Storage Hydroelectric Project, which was licensed under the Federal Power Act in 2014. The reduction in acreage accounts for federal lands that are included in Eagle Crest Energy Company's pending right of way application with BLM. If BLM does not issue the requested rights of way, or if BLM issues rights of way for less than the area included in Eagle Crest's application, such areas could again become feasible for transfer to the NPS.

The feasibility of the private land parcels has also changed as a result of information received through the public comments. Although the Eagle Crest Energy Company has indicated that it would consider donation of lands excess to the proposed pumped storage hydroelectric project to the National Park Service, comments indicated that it may not do so until the final promissory note is secured for such lands, mining claims, and other property interests owned or controlled by Kaiser Eagle Mountain, LLC. Eagle Crest Energy Company continues to maintain a willingness to donate such lands to the NPS, but only at such time that the promissory note is secured. In addition, a 30-acre parcel in the northwestern portion of the study area is no longer considered feasible as the owners have indicated that the lands are not currently available for NPS acquisition. As a result, ~2,000 acres of private lands are considered feasible for NPS management.

The findings were also revised with regard to State School Lands. The State School Lands acreage was revised to reflect current records of the California State Lands Commission (CSLC). CSLC has also commented that such lands would only become available through land exchange or purchase when and if the surrounding private lands and associated mineral rights of the former Eagle Mountain Mine lands proposed for the boundary addition are relinquished to the National Park Service. As a result, approximately 335 acres of State School Lands are considered feasible should they become available for NPS management.

Although some portions of the study area are not feasible for NPS management at this time, such areas considered potentially feasible (~8,610 acres) contain resources with cultural resource values and public enjoyment opportunities. The NPS could consider inclusion of these lands in the park boundary in the future if current or planned uses change. These lands include the FERC-licensed area for Eagle Crest Pumped Storage Hydroelectric Project (~6,495 acres, including Townsite and requested rights of way), privately-owned commercial mining areas (~1,995 acres), the privately-owned patented land parcel in the western study area (30-acres), and the Eagle Mountain School (~90 acres). Land acquisition would only be considered where landowners have expressed interest in selling or donating lands to the NPS. Approximately 2,895 acres of land associated with the Colorado River Aqueduct is not considered a feasible addition to the park.

The study finds that operational costs for a boundary expansion of Joshua Tree National Park in the Eagle Mountain area would be feasible. Most of the lands considered feasible at this time are federal lands which could be transferred to the NPS with little cost. Such lands contain few structures or facilities that the NPS would have to maintain. Areas both feasible and potentially feasible would result in a 2.6-3.75% addition to overall park acreage. Costs for development would be dependent on management priorities and approaches identified through implementation planning and the location, size, and configuration of future land acquisition. Socioeconomic impacts on local communities would largely be beneficial. Location of new mining claims would be precluded. Valid existing rights would be preserved. Unpatented mining claims on any BLM-managed lands that are transferred to the NPS would become subject to the Mining in the Parks Act and associated NPS regulations.

The study finds that other means for resource protection in the Eagle Mountain area are not adequate for long-term protection of resources related to Joshua Tree National Park's purpose. Including lands in the Eagle Mountain area within the Joshua Tree National Park boundary would enhance long-term protection of the area and its resources. Without NPS management, the area would continue to be managed without a cohesive vision for protection or interpretive and educational opportunities, and it would remain open to new incompatible uses. Given the configuration of the area in relationship to the park boundary, new incompatible uses could result in additional and synergistic adverse impacts on park resources such as wildlife, water resources, and wilderness values. Adding the study area lands to the Joshua Tree National Park boundary would also improve access to the east side of the park, create a more logical boundary delineation, and allow access to NPS staff to monitor and document the resources of the area.

Selected Alternative

Description

The National Park Service has selected Alternative C, with revisions, from the Boundary Study/EA (Selected Alternative). Under the Selected Alternative, the boundary of Joshua Tree National Park could be expanded in stages by approximately 20,005 acres, assuming certain subsequent actions take place (See *Map 1: Selected Alternative*). As an initial step, the boundary could be expanded to include approximately 17,670 acres of federally owned lands currently managed by BLM if the proposed withdrawal and transfer of these lands is approved by the Department of the Interior. See *Map 2: Selected Alternative – Proposed Federal Land Transfer.*

The park's boundary could be expanded in subsequent stages to include approximately 2,000 acres of privately owned lands, and 335.7 acres of State School Lands outside of the Federal Energy Regulatory Commission (FERC) license withdrawal area that have been determined feasible for addition to Joshua Tree National Park but that are not currently available to NPS. See *Map 3: Selected Alternative – Federal Land Transfer with Proposed Private and State Additions.* The Selected Alternative, if fully implemented, could allow for greater protection of existing habitat, restoration opportunities, and landscape connectivity for wildlife such as bighorn sheep as well

as new visitor opportunities. As depicted in Map 1, the expanded boundary would exclude a 30 acre private parcel in the northwestern corner of the study area. The private owner has not consented to the inclusion of this parcel in an expanded park boundary.

The 2,000 acres of private land could be acquired when available through direct donation to NPS or through purchase by a third party from a willing seller with subsequent donation to NPS. Eagle Crest Energy Company, which holds property interests in these lands, has indicated that it would consider donating lands not needed for the pumped storage hydroelectric project to the National Park Service following construction of the project and at such time that the outstanding promissory note for the private parcels is secured. State School Lands could be acquired through a land exchange with the California State Lands Commission. The California State Lands Commission has indicated that it would consider a land exchange when and if the surrounding private lands and mineral interests are transferred to the NPS for management.

The long-term vision of the National Park Service would be to include in the park boundary all of the lands determined suitable for addition to Joshua Tree National Park, if and when such lands become available to the National Park Service. This would include approximately 8,610 acres that include the Eagle Mountain Mine and Townsite, if existing uses of those lands change and subsequently become available to the NPS through willing sellers. Federal lands associated with the proposed right of way for the pumped storage hydroelectric project could be considered for transfer to the NPS at a later time, if not needed for the operation of the facility. Additional feasibility analysis and environmental site assessments for the remaining lands may be necessary at such time that they become available.

Valid Existing Rights

If the park boundary is adjusted, valid existing rights would be preserved. The proposed boundary addition would not include BLM-managed lands that have been previously withdrawn under the Federal Power Act for the Eagle Crest Energy Company's Eagle Mountain Pumped Storage Project. The hydroelectric project received a 50-year license from FERC in June 2014.

Southern California Edison maintains electrical and telecommunications infrastructure in the Townsite area near the proposed boundary adjustment and additional facilities are planned to support the proposed pumped storage hydroelectric project. The Selected Alternative would allow public utilities to access, maintain, or upgrade existing and planned electrical and telecommunications infrastructure on adjacent lands.

All valid existing mineral rights (for both patented and unpatented mining claims) would be retained by current claimants. The unpatented and patented mining claims in the boundary revision area that would be transferred to NPS administration would become subject to the Mining in the Parks Act and its implementing regulations (36 C.F.R. § 9, Subpart A- Mining and Mining Claims), as well as other NPS laws and regulations. Mining claims in NPS-administered areas must be determined to be valid, through the completion of a validity exam, before the NPS can approve a plan of operations for mining. To be valid, a mining claim must contain a discovery of a valuable deposit of a mineral, subject to location under the Mining Law of 1872. For a millsite to be valid, the millsite must be on lands that are non-mineral in character and be in use for mining, milling, or other mining related purposes.

Because BLM cost-recovery regulations do not authorize the recovery of costs associated with validity examinations on NPS lands, the cost of the validity exams would probably be borne by the National Park Service should lands be transferred for management as part of Joshua Tree National Park. However, the validity examination would be conducted by BLM personnel. Unpatented claimants could apply for temporary approval to continue mining in the NPS-administered areas until such time that a validity exam could be conducted. The

NPS is committed to ongoing coordination and communication with area claim holders with regards to implementation planning and future use of the area if federal lands containing unpatented claims are transferred to NPS management.

Implementation

Implementation of a boundary adjustment would require additional administrative and/or Congressional action and may occur in stages. The mechanism for implementation of the proposed boundary adjustment is dependent upon the availability of properties and the means by which they could be acquired by the National Park Service. Federal lands managed by the Bureau of Land Management (BLM) could be administratively transferred to the National Park Service (NPS) as authorized by provisions of the Land and Water Conservation Fund (LWCF) Act (54 U.S.C. §100506(c)(1)(b)) and the Federal Land Policy and Management Act (FLPMA). In the near term, the boundary could be expanded to include approximately 17,670 acres of federally owned lands currently managed by BLM if the proposed withdrawal and transfer of these lands is approved by the Department of the Interior.

Inclusion of any of the local, state, or privately owned lands in a future boundary adjustment would require Congressional action, unless such lands were donated to the National Park Service, or acquired through land exchange, in which case such lands could be included in an administrative boundary adjustment (54 U.S.C. §100506(c)).

Resource Protection Opportunities

Most lands recommended for addition to the national park in the Selected Alternative are undisturbed lands that contain habitat important for landscape-scale conservation of the California desert and that would protect adjacent park wilderness values. Including these lands in the national park boundary would provide the NPS the opportunity to protect the transferred lands in tandem with NPS-managed properties within Joshua Tree National Park. Benefits include protection from development, seamless protection of existing habitat, and restoration opportunities for disturbed lands that may provide greater landscape connectivity for wildlife such as desert bighorn sheep.

For areas included in a future boundary adjustment, the NPS would work to ensure that future activities and uses do not diminish the wilderness values of adjacent areas. This would include any new visitor opportunities identified in future management plans for newly added areas.

Additional inventories, documentation and mapping of cultural sites could be undertaken, although location data for sensitive sites would not be released in order to protect the sites from vandalism. The NPS would conduct appropriate consultation and coordination with native cultural groups that have ties to the Eagle Mountain area.

For lands that remain in private ownership, the NPS would seek to work with private landowners on mitigation strategies to avoid or minimize the impacts of adjacent industrial uses on park resources. Reclamation of disturbed areas associated with the Eagle Mountain Mine would occur under the approved reclamation plan for the mine. However, any private parcels that are donated to the NPS in the future, including those private lands outside of the FERC-licensed area, could provide additional protection of park resources such as travel corridors for populations of desert bighorn sheep in the Eagle and Coxcomb Mountains. NPS could pursue further restoration of areas of any lands transferred to the NPS where necessary for the specific purpose of improving habitat connectivity for desert bighorn sheep and other sensitive species.

Resource Management Planning

Although specific implementation plans would be required for management actions such as restoration projects, the park's recently completed *Resource Stewardship Strategy* (2014) would provide initial resource management guidance for those resources that are considered fundamental to the purpose of Joshua Tree National Park. A resource stewardship strategy is a planning document for a national park unit to achieve its desired natural and cultural resource conditions, which are derived from relevant laws and NPS policies identified in a park's foundation document, or other park plans. The resource stewardship strategy serves as a bridge between the park's foundation document and everyday management of its natural and cultural resources. The resource stewardship strategy describes measurable desired conditions and possible pathways to achieve desired results for certain fundamental resources and values. Lands within the proposed boundary adjustment include resources that represent almost every fundamental resource and value outlined in the park foundation document and resource stewardship strategy. Those fundamental resources and values are:

- Biological diversity and healthy ecosystem function
- Interconnectivity of California desert lands
- Recreational opportunities and values
- Wilderness values and wilderness accessibility
- Ever-expanding knowledge base
- Opportunity to understand, apply, and share knowledge to benefit the park and beyond
- Geological resources and desert landforms
- Hydrological resources
- Night sky
- Clean and breathable air
- Soundscape
- Viewsheds
- Historic structures or landscapes
- Archeology (historic and prehistoric)
- Cultural anthropology
- History

Visitor Experience Opportunities

Under the Selected Alternative, new visitor opportunities in the Eagle Mountains could be explored. Backcountry hiking, night sky viewing, and informal camping opportunities could be afforded without requiring extensive infrastructure improvements. A hiking trail connection to Cottonwood Springs could be explored. The NPS could consider improvement of the existing access road for safer visitor and staff travel while taking into consideration the need to conserve natural, cultural, and wilderness values. Other facilities that could be explored include trails, camping areas, or overlooks. Consideration would be given to areas where interpretive signage could provide information about the area and its history.

Access would continue to be limited on private lands and to FERC energy license withdrawal lands. However, the NPS could explore with Kaiser Eagle Mountain, LLC, and its affiliates opportunities to provide access from the

private lands to the east, to the extent that such opportunities would not interfere with current mining operations and the existing approved reclamation plan for the Eagle Mountain Mine. Careful consideration would be given in evaluating additional visitor access opportunities to ensure public safety and consistency with the current reclamation plan for the mine.

Once lands are transferred to the NPS for administration as part of Joshua Tree National Park, some existing uses would be constrained in accordance with NPS regulations and policies. Off-highway vehicle use would be limited to designated routes, pursuant to implementation planning for the area. Some uses such as shooting would no longer be permitted. Some visitors to the federal lands conduct mining on unpatented claims. Long-term continuation of this use would be contingent upon validity for the claim and other requirements of NPS regulations for mining.

The NPS would need to conduct further planning to determine the range of visitor use facilities that would be appropriate and compatible with the area's natural and cultural resource values and where such facilities could be appropriately sited. Any new visitor opportunities would be considered in light of existing and potential opportunities to access to the area. The NPS could explore cooperative opportunities to provide access along public roads or seek access agreements from adjacent land owners.

Public Access Following NPS Management

If BLM-managed lands are transferred to NPS jurisdiction, the NPS would continue to allow access to the transferred lands along existing roads such as Black Eagle Mine Road. NPS would not provide public access to private or state lands unless such lands are acquired by NPS through donation, sale or transfer. Access to the former mining areas may be restricted for safety reasons. If those lands are acquired by NPS, further analysis would be required to evaluate safe and appropriate access opportunities.

Operational Management Opportunities

The areas proposed for inclusion in the boundary would allow the NPS to improve access to the Eagle Mountain area and expend funds on studies and projects related to natural and cultural resource protection for most of the lands within the study area. Resources within this area would be studied and inventoried, contingent on the availability of funds. The need for inventories is heightened with the effects of climate change on park resources and the impacts that could result from construction and operation of the proposed pumped storage hydroelectric project.

Future Plans Needed

If lands are transferred to NPS for management, the NPS would complete a management plan to define appropriate uses and functions for the area and to coordinate the interrelationships among uses, site resources, and facilities (for visitors and/or park operations); and establish a road map to guide decisions on needed capital improvements, preservation, and development. As described above, the resource stewardship strategy provides guidance for protection of Joshua Tree National Park's fundamental resources and would serve to provide guidance for management of the area's resources until such time that a comprehensive site plan would be completed for the area. Additional studies and planning would be required for any restoration efforts on the previously disturbed areas.

Costs

The NPS base budget for Joshua Tree National Park in fiscal year 2015 was $6.06 million, which includes employee salaries and day-to-day operating expenses. In the current fiscal environment, it is unlikely that funding increases would be immediately available to support the expanded park area upon transfer of the lands

to NPS for management. In the short-term, existing funding for Joshua Tree National Park, including revenue from park entrance fees, would be used for management of the newly added lands.

Operations. Initially, existing staff at the park would manage and operate the expanded park area. However, over time as implementation planning identifies specific resource management needs and visitor opportunities additional staffing and expertise needed for the expanded area would likely include:

- Resource management staff to document and manage the expanded scope of natural and cultural resources within the newly added area
- Interpretive staff to create and deliver visitor programs
- Law enforcement staff to protect resources and ensure a safe visitor experience
- Maintenance and facilities management staff, primarily for maintenance of Black Eagle Mine Road

Total additional staffing identified would be five FTE which would require an increase of $340,000 over the park's current annual operating budget.

Facility and Other One-time Costs. Aside from existing roads, the area under consideration in the Selected Alternative contains very few facilities that would require NPS maintenance. The NPS would assume maintenance for approximately eight miles of Black Eagle Mine Road and access roads associated with the mining areas. Annual operation and maintenance of the road in its current condition (unpaved four-wheel drive passable only) would cost approximately $8,000. Minimal road improvements to allow passenger cars access (unpaved) would be a one-time capital investment of $280,000. Annual maintenance costs for an improved road would be about $1,600 more annually over maintenance costs for the road in its existing condition.

Over time, as implementation planning identifies specific projects and needs, additional funding would be sought. Capital costs related to visitor services may include funding for road improvements, new trails, overlooks, camping areas, or waysides. Further implementation planning would determine appropriate visitor facilities and would identify specific costs associated with those facilities. Additional inventories, documentation and mapping of cultural sites would be undertaken to inform implementation planning where necessary. Planning would consider potential visitor use, facility and site design where appropriate, and detailed identification of resource protection needs. Actual costs to the NPS would vary depending on timing and implementation and contributions by partners and volunteers.

The private land proposed for inclusion in the boundary would include two of the former mining pits (Black Eagle and Iron Chief) associated with the Eagle Mountain Mine. If these lands are included in the park, the NPS could incur some costs to address any potential safety hazards associated with mined lands if reclamation activities by KEM are not sufficient for NPS purposes. The NPS would also have to incur costs for any validity exams related to unpatented mining claims that are transferred to the NPS for management.

Modifications to the Preferred Alternative

The recommendations encompassed in the Selected Alternative are similar to those proposed in Alternative C, with the exception of several changes made as a result of information and comments derived from public and agency review of the environmental assessment, as follows:

- The proposed transfer of Bureau of Land Management managed federal land to the National Park Service has been reduced from 22,515 acres, to approximately 17,670 acres to address concerns raised by Eagle Crest Energy Company and the Bureau of Land Management regarding the effects of the proposed Alternative C on the implementation of the Eagle Mountain Pumped Storage Hydroelectric Project which was licensed under the Federal Power Act in 2014. Although ~4,850 acres are not immediately feasible for transfer because they are included in Eagle Crest Energy Company's right of way application to BLM, these lands could be considered for transfer to the NPS at a later time, following construction of hydroelectric project if they are not needed for right of way purposes.

- The proposed addition of 2,230 acres of private lands has been reduced to approximately 2,000 acres to reflect information from current landowners provided through public comment. Eagle Crest Energy Company expressed concern about the potential effects on the implementation of the Eagle Mountain Pumped Storage Hydroelectric Project on approximately 200 acres of private lands within the FERC-licensed area and proposed rights of way for the project. For the ~2,000 acres of land outside of the FERC-licensed area, Eagle Crest Energy maintains that it would donate such lands to the NPS. However, these lands would only become available for donation by Eagle Crest Energy Company following construction of the hydroelectric project and at such time that the outstanding promissory note on the private parcels is secured. The lands are owned by Kaiser Eagle Mountain, LLC, an affiliate of Eagle Crest. The owners of the ~30-acre private parcel in the northwestern corner of the study area have indicated that these lands are not currently available to NPS. These private lands could be added to the boundary in the future through donation, or purchase and donation should they become available to the NPS.

- The State School Lands would only become available through land exchange or purchase when and if the surrounding private lands and associated mineral rights of the former Eagle Mountain Mine lands proposed for the boundary addition are donated directly or through a third party to the National Park Service. As stated above, Eagle Crest Energy Company, which has a substantial interest in such lands, has expressed intent to donate such lands to the NPS following construction of its hydroelectric project.

Other Alternatives Considered

Alternative A: Continue Current Management (No Action) assumes the Eagle Mountain area would continue to be owned and managed by current public and private entities. No change would be made to the boundary of Joshua Tree National Park. In this scenario, BLM-managed land would be managed according to the *Desert Renewable Energy Conservation Plan Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan* (DRECP LUPA) approved in September 2016. The No Action alternative in the Boundary Study/EA (March 2016) was based on Desert Renewable Energy Conservation Plan Proposed Land Use Amendment and Final Environmental Impact

Statement (October 2015). There are some changes between the draft and final LUPA; however, these changes do not affect the Boundary Study/EA environmental analysis.

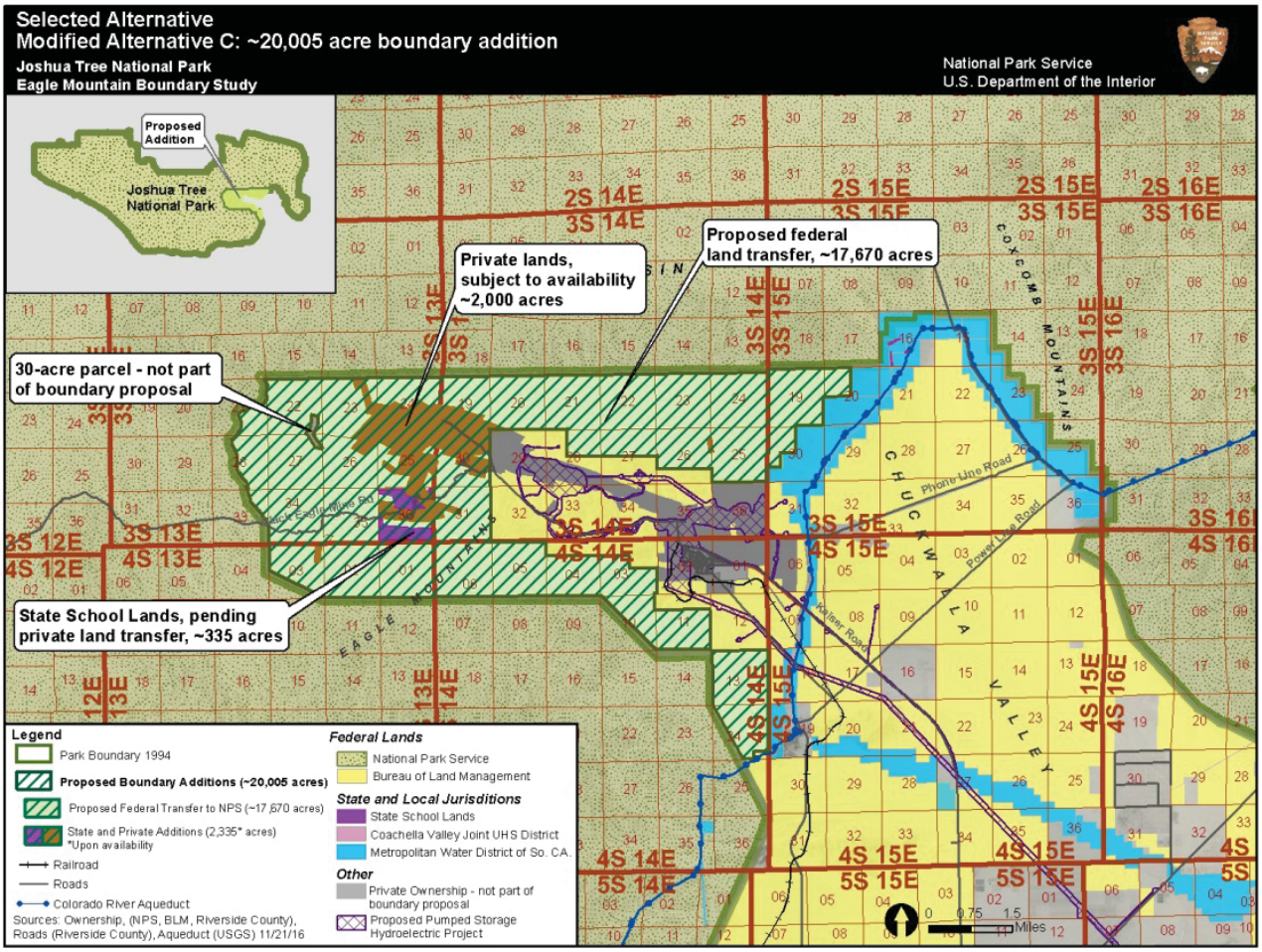
Alternative B, *Federal Agency-to-Agency Land Transfer (~22,135 acre boundary addition)* proposed a transfer of federal lands administered by the BLM to the NPS for administration as part of Joshua Tree National Park. Alternative D, *Restore 1936 Boundary to Provide Diverse Visitor and Resource Protection Opportunities – Phased Approach (~28,600 acre addition)* proposed a boundary addition that represents a long-term vision for comprehensive protection of the area's resources and included a transfer of BLM-administered lands (22,515 acres) and other lands to be acquired for park use overtime if and when they become available from willing sellers.

Preliminary Options Considered and Dismissed

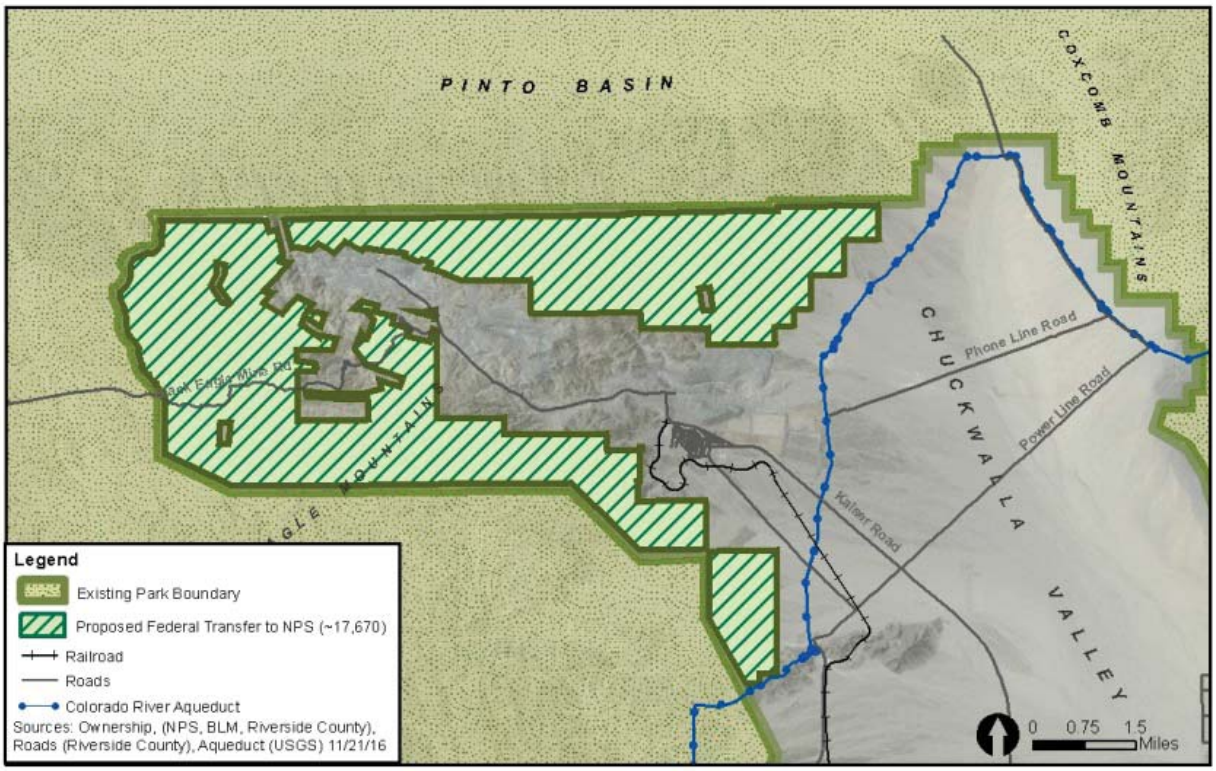
The study evaluated a variety of configurations associated with the proposed boundary expansion. Public scoping comments suggested two alternatives that the NPS considered but dismissed. The first would be the inclusion of all lands in the study area. The NPS dismissed this alternative because all of such lands would not be feasible for the NPS to manage. While most of the lands under study are considered feasible or potentially feasible, the Metropolitan Water District of Southern California parcels that form the eastern boundary are actively managed for the operation and maintenance of the Colorado River Aqueduct and are thus not compatible with park management.

The second alternative would include a broader boundary adjustment that includes lands to the east in the Chuckwalla Valley that contain important habitat for species such as the desert tortoise (Gopherus agassizii). Including these areas is beyond the scope of the study which is focused on the historical footprint of Joshua Tree National Monument in 1936. These areas were not part of the historical footprint of the national monument. Additionally, because the NPS has determined that the Metropolitan Water District of Southern California parcels are not a feasible addition to the park boundary, including areas west of the Colorado River Aqueduct would create a boundary that is not contiguous.

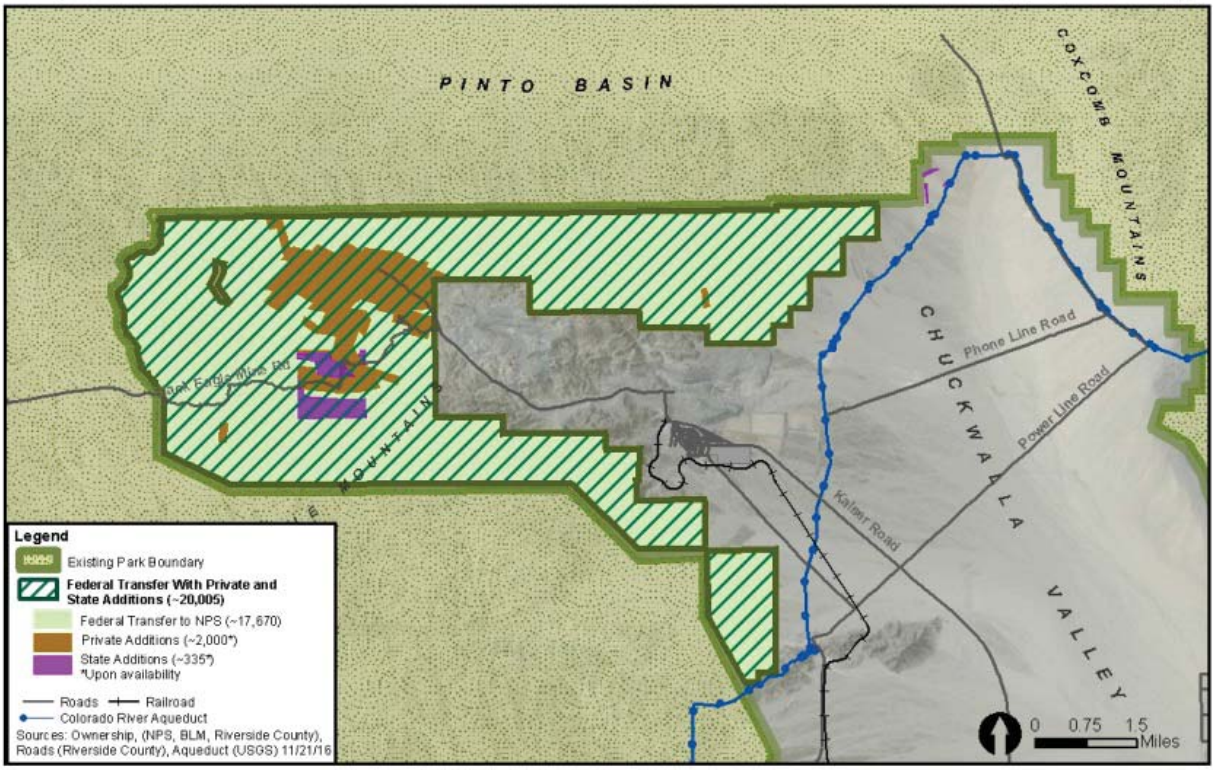
Map 1: Selected Alternative



Map 2: Selcted Alternative - Proposed Federal Land Transfer



Map 3: Selcted Alternative - Federal Land Transfer with Proposed Private and State Additions (Upon Availability)



Rationale for the Selected Alternative

Alternative C, the preferred alternative, with modifications incorporated as described above is selected for implementation because it meets the purpose and need, helps achieve landscape-scale conservation in the Eagle Mountain area, and provides new public enjoyment opportunities. The Selected Alternative includes the broadest area feasible for short-term implementation and achieves project goals even though the boundary adjustment acreage has been reduced. The majority of the study area will still be protected under National Park Service management, which will help address current threats facing park resources, such as habitat fragmentation from regional development as well as mitigate the effects of climate change on park resources. It allows for considerable wildlife connectivity in the Eagle Mountains and will have relatively low infrastructure costs. The park's long-term vision is to include within the park boundary all of the lands determined suitable for addition into Joshua Tree National Park. The Selected Alternative leaves open the possibility of future boundary expansions for lands deemed suitable, assuming such lands become available to NPS.

In general, the environmental analysis discloses that the alternatives have increasingly greater benefits; for example, Alternative B provides greater advantages to park resources and values than Alternative A, Alternative C is more beneficial than B, and Alternative D is most beneficial.

Alternative D was not selected because some of the private lands were determined to be infeasible for inclusion in the boundary. It is NPS policy is to acquire lands and interests in lands only from willing sellers, with condemnation as a means of last resort. Aside from the Eagle Crest Energy Company's expressed intent to donate land west of its hydroelectric project, the owners and lessees of other private parcels have not given consent for their lands to be included in the park boundary. Eagle Mountain Mining & Railroad Company, LLC has a Mining Lease and Agreement to conduct limited types of mining activities within the Eagle Mountain Mine; the initial term of the lease is 40 years, but it can be extended up to 100 years. In June 2014, Eagle Crest obtained a 50 year license from the Federal Energy Regulatory Commission (FERC) for the construction and operation of the Eagle Mountain hydroelectric pumped storage project. Lands withdrawn by FERC under the Federal Power Act are not available for withdrawal and transfer to the NPS.

In Alternative A, the BLM proposed land use plan amendments established through the Desert Renewable Energy Conservation Plan (DRECP) would result in greater protection of the resources in the area. However, because these land use designations do not apply to the majority of lands in the area, the potential for their conversion to other land uses allowable under BLM multiple-use classes for areas without new conservation designations remains, which could negatively impact the visitor experience as well as other natural resource values. While the BLM has responsibility under current policies to conserve and protect cultural and historical resources on its land within the study area, the BLM currently does not provide active interpretation of cultural resources within the study area. Nor does any current BLM management plan call for interpretation or education of cultural resources in the Eagle Mountains. There is no interpretation of the area's prehistory or mining history, nor is this proposed in any current management plan. Therefore, Alternative A was not selected. Alternative B was not selected because the benefits to park resources and values were less than the Selected Alternative. Alternative B also created a complex boundary with administrative challenges for both NPS and BLM.

Why the Selected Alternative will not have a Significant Effect on the Human Environment

Using the ten significance criteria as defined in the Council on Environmental Quality's NEPA regulations (Section 1508.27), the NPS has determined that the Selected Alternative can be implemented with no significant adverse impacts. The following criteria were used to determine the significance of each impact.

1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect may be beneficial.

All potential impacts were identified in the EA and none rise to the level of significance. The Selected Alternative would result in many beneficial impacts on wildlife and vegetation. It would also contribute to the preservation of wilderness, cultural resources, visual resources, water resources and the soundscape. It could provide socioeconomic benefits to the Eagle Mountain area from increased tourism, and would not result in operational impacts for the park. The Selected Alternative would result in some adverse impacts to visitor recreation due to the prohibition of some activities on NPS land that are currently permitted on BLM-managed land (i.e. hunting, shooting, rockhounding, collecting, off-highway vehicle use outside of designated areas, use of metal detectors, and mining). However, these adverse impacts will be offset by the new opportunities available in the park, such as hiking, camping or educational/interpretative programs. The Selected Alternative would not adversely affect land use, since the NPS would not exercise eminent domain in any circumstance; private lands proposed for the boundary adjustment would be donated to the NPS by willing parties. There will be substantial adverse but insignificant effects to mining because new mining claims would not be permitted and mining on existing unpatented claims could cease if the claims are found to be invalid. This potential impact would be lessened in the short term if NPS authorizes claimants to operate temporarily during the validity examination process which could take several years to complete.

2. The degree to which the Selected Alternative affects public health and safety.

The Selected Alternative will not create any new safety or health hazards. Although remnants of an open pit mining operation exist in the middle of the study area, there is little risk to human health and safety because public access is prohibited and there is no known contamination emanating from the mine. Kaiser Eagle Mountain, LLC is required to comply with a reclamation plan for the mine. The NPS will conduct environmental site assessments prior to transferring land into the park boundary. This will allow NPS to identify hazards and manage future public use to avoid health and safety issues

3. Unique characteristics of the area (proximity to historic or cultural resources, wild and scenic rivers, ecologically critical areas, wetlands or floodplains, and so forth).

Desert landscapes that converge at Joshua Tree National Park create a biologically rich system of plant and animal life. The study area contains a rich array of desert habitat representative of the Colorado and Mojave deserts. Of particular importance is the use of the area for the migration of sensitive wildlife. The *Desert Renewable Energy Conservation Plan Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan* (DRECP LUPA) recognizes the national significance of the desert ecosystems in the study area and proposes two separate designations to recognize these resources. The western federal lands are proposed for National Conservation Lands (NCL) while the lands to the east of the Eagle Mountain Mine are proposed to be included in the Chuckwalla Area of Critical Environmental Concern (ACEC). These proposed areas would comprise about 12,500 acres of federal lands within the study area.

There is critical habitat for desert tortoise (*Gopherus agassizii*) and habitat for 60 other special status plants and animals, including the desert bighorn sheep (*Ovis canadensis nelsonii).* The subarea contains important habitat

linkages for terrestrial reptiles, mammals, and burrowing owls, distributed among 14 BLM wilderness areas from the Colorado River to Joshua Tree National Park. Mountain cliff sites in designated BLM wilderness areas in the subarea are important to maintaining robust golden eagle populations. The DRECP LUPA also recognizes the significance of Sonoran old-growth microphyll woodlands that provide the highest amount of aboveground biomass of any plant community in the Sonoran Desert outside of the Colorado River riparian zone. The study area contains important habitat for wildlife in Joshua Tree National Park and other protected areas in the Mojave and Colorado deserts. Movement through contiguous habitat is essential to wildlife survival and is an important linkage to large-scale landscape conservation of the desert region.

The study area likely has ethnographic importance to all of the four native cultures that are currently associated with the national park, known today as the Cahuilla, Chemehuevi, Mojave, and Serrano. Archeological sites have been identified in surveys for various development projects in the region. The most prominent historic resources within the study area are the Eagle Mountain Mine and Townsite. These resources expand on mining history themes currently interpreted at Joshua Tree National Park, providing a 20th century component to mining in the California desert. Eagle Mountain Mine's operations provide an opportunity to convey the cultural contribution and story of Henry J. Kaiser and the Kaiser Steel Corporation and mining in the 20th century.

4. Degree to which impacts are likely to be highly controversial.

There is some public opposition associated with the boundary expansion. Although the bulk of the correspondence (approximately 9,000 form letters) was received from campaigns in support of the broadest possible boundary expansion, half of the unique comments were not supportive and favored the No Action alternative. The main issue of contention is the loss of mining opportunities due to Mining in the Parks Act regulations that prohibit the establishment new mining claims on NPS land and require all unpatented claims to undergo a validity examination. Most comments received on this issue were submitted by people who engage in casual use mining in the area. The opposition of these users to NPS's policy decision to recommend a boundary expansion does not equate to significance under NEPA. There is no genuine dispute within the scientific community about the impacts of reduced recreational mining opportunities in the study area, which the Boundary Study/EA acknowledges. These users would be able to practice causal use mining on other public lands within the geographic area that are open to placer mining. The impact on casual use miners is also mitigated somewhat by the provision that unpatented claimants could apply for temporary approval to continue mining on unpatented claims while the validity examination process is underway. If these unpatented claims are found to be valid, mining on those claims could continue.

The Selected Alternative would have minimal effect on new large scale mining of the Eagle Mountain Mine because: the majority of lands associated with the Eagle Mountain Mine would remain in private ownership; large scale mining and associated blasting is likely incompatible with the planned hydroelectric pumped storage project; the Eagle Mountain Mining and Railroad Company lease only authorizes the harvesting of above-ground fractured rock and tailings; and market conditions are not favorable to the resumption of large scale iron ore mining in this area. Additionally, since the Eagle Mountain Mine closure in 1983, the study area is no longer heavily used for mining, unlike other areas of the California desert (although some aggregate mining still occurs on private property).

5. Degree to which impacts are highly uncertain or involve unique or unknown risks.

There are no highly uncertain or unique risks associated with the Selected Alternative. Environmental site assessments will be completed to assess likely safety or environmental hazards. The Selected Alternative only provides a recommendation whether or not it is feasible to move the park boundary. If the boundary is adjusted, additional planning and compliance will be completed before the NPS implements any project in the new park area.

6. Whether the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.

The Selected Alternative neither establishes a precedent for future actions with significant effects, nor represents a decision in principle about a future consideration.

7. Whether the action is related to other actions that may have individual insignificant impacts but cumulatively significant effects.

The impacts of the Selected Alternative on each impact topic were identified in the EA. Cumulative impacts to each resource were also identified and none will have cumulatively significant effects.

8. Degree to which the action may adversely affect historic properties in or eligible for listing in the National Register of Historic Places, or other significant scientific, archeological, or cultural resources.

As stated above, the Eagle Mountain Mine and Townsite is the largest historic resource in the study area. In 1995, the Eagle Mountain Mine and Townsite was evaluated for eligibility for listing on National Register of Historic Places. Although potentially significant in regards to their role in iron ore mining industry in California, the Unites States, and the World, at the time of evaluation, the properties were less than 50 years old and determined to be ineligible. The Eagle Mountain Mine and Townsite are now more than 50 years and will be reevaluated for potential eligibility for listing in the National Register of Historic Places as a State Historic Preservation Office requirement for the Eagle Crest Pumped Storage Hydroelectric Project. There are likely many archeological resources in the area as well; prior to the NPS conducting any ground disturbing activities, testing and consultation will occur with the California State Historic Preservation Office (SHPO) will occur to ensure impacts are avoided or mitigated to the greatest extent possible. The boundary expansion itself would have no adverse impacts. The NPS will consult again with the SHPO prior to implementation of future actions within the boundary expansion area that could affect historic resources.

9. Degree to which an action may adversely affect an endangered or threatened species or its habitat.

The Selected Alternative will not result in any adverse effects to an endangered or threatened species of its habitat. Instead, a boundary expansion will ensure that a greater area of contiguous habitat and movement corridors exist for the threatened desert tortoise (*Gopherus agassizii*). It protects more areas of desert tortoise habitat from potential development projects. As a result, population declines from effects related to development may be reduced. Additional protected land would contribute to more extensive, contiguous home ranges that are essential for the survival of the species. Strengthening tortoise populations helps to create resilience against climate change. The Selected Alternative would protect individuals and species habitat not only to the desert tortoise but also to desert bighorn sheep, burrowing owls, golden eagles, bats, and other wildlife in the area. Landscape-scale conservation of the area could begin to take shape. This additional protection and conservation in this alternative would result in beneficial effects to wildlife and special status species.

10. Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

The Selected Alternative does not violate any federal, state, or local law, or requirements imposed for protection of the environment.

Public Involvement

Public Scoping

Scoping for this study included both internal and public scoping. Internal scoping was conducted with staff from the Joshua Tree National Park, the National Park Service (NPS) Pacific West Regional Office, and other members of the project team, and included a site visit to the study area. In July 2015, the NPS initiated public scoping. The public comment period occurred from July 13, 2015 to August 21, 2015. On July 13, the NPS sent out a public scoping newsletter to over 160 individuals, organizations, and agencies. Newsletters were also distributed at local public meetings and at park visitor centers. The newsletter included an overview of the study process, preliminary findings, and a range of boundary adjustment options for consideration in the study. The newsletter was posted for comment on the NPS' Planning, Environment and Public Comment (PEPC) website: http://parkplanning.nps.gov/eaglemountain. A press release announcing the start of public scoping and the public meeting schedule was sent to media outlets, and several articles were published on both the study and public meetings. On July 16, 2015, the study team provided a briefing for agencies that manage land and resources in the study area.

The study team conducted four public meetings during the scoping period, including one online meeting (July 29, 2015) and three meetings in the vicinity of Joshua Tree National Park held August 4-6, 2015 (Desert Center, Joshua Tree, and Palm Desert). Meetings were well attended (230 total attendance), with the greatest participation in Joshua Tree, California (150 attending). At each meeting, the study team presented the preliminary findings and a range of boundary adjustment options. Participants were able to ask questions and provide comments on the study, which were recorded on flipcharts by NPS staff. NPS also took notes of comments and questions during the online meeting. Attendees were provided information about how to submit comments electronically and through the mail. The NPS received approximately 11,000 comment letters during the comment period from many individuals, diverse groups and organizations, local businesses, tribal organizations, and two letter-writing campaigns.

The public scoping comments covered a broad range of topics. The majority of the comments were either directly related to the preliminary options or to the primary topics of mineral interests and rights, legislative history, documentation of various resource types associated with the study area, and recommendations for topics to be addressed in the environmental analysis. Most comments supported the NPS management of resources in the study area and the fourth option, which explored adding most of the lands in the study area to Joshua Tree National Park (*Restore 1936 Boundary to Provide Diverse Visitor and Resource Protection Opportunities*). Other comments preferred no action citing concerns that NPS management would generally restrict access and activities such as placer mining.

Primary areas of concern included:

- *Cumulative Effects of Development and Energy Projects*. Many commenters expressed concern about the cumulative effects of renewable energy and other development projects on resources in Joshua Tree National Park. Comments expressed concern about the potential effects of the Eagle Mountain Pumped Storage Hydroelectric Project planned for the area, particularly with regard to the impact on local groundwater supplies and wildlife.
- *Impacts to Access and Recreational Use*. Concerns were raised that National Park Service management would restrict existing recreational uses of the area. Some users were specifically concerned about restrictions of off-road vehicle use and that access in general might be restricted under NPS management.
- *Impacts to Mining Activity*. Of particular concern was the potential impact on mining club members which maintain several unpatented claims on BLM-managed public lands in the area. Miners were concerned that the expense of conducting validity exams on their mining claims to resolve whether they retain a valid existing right would be prohibitive.
- *Mineral Resource Potential*. A few commenters expressed concern that the mineral resources of the area would become unavailable for use if the lands were added to Joshua Tree National Park.
- *Information to Consider for the Environmental Analysis*. The following topics were suggested for documentation and evaluation in the environmental analysis: cumulative impacts from regional development projects, effects on water resources/supplies, wildlife protection and regional habitat connectivity, mining history, mineral rights, mineral resources, effects on current recreational users, ethnographic resources and values, historic and archeological sites, paleontological resources, night sky, effects on wilderness and viewsheds, hazardous materials that may be present as result of previous mining activities, costs and financial feasibility of NPS management, socioeconomic impacts, and transmission lines and other infrastructure.
- *Agency Consultation*. Commenters suggested that the NPS work closely with the BLM on the study, with particular regard to how the *Desert Renewable Energy Conservation Plan* will affect management and protection of the study area. See discussion of this plan in the section to follow, *Applicable Federal Laws, Regulations, Executive Orders, Plans, and Policies*.
- *Tribal Consultation*. The NPS received comments from several tribal organizations with cultural ties to the area that offered information and requested consultation with NPS under the Section 106 process of the National Historic Preservation Act.
- *Reversionary Interest in the Eagle Mountain Townsite*. Many commenters had questions about whether the legislative actions that removed lands from Joshua Tree National Monument in 1950 and granted Kaiser Steel Corporation use of land for a Townsite contained provisions for returning that land to the federal government when such mining activities ceased.
- *Other Information*. Comments provided additional sources of information for the NPS to consider in the study process.

Review of the EA

The EA was available for public review and comment from March 31, 2016 through May 27, 2016. Public comments were received by fax, U.S. mail, and online through email and the Planning, Environment, and Public Comment (PEPC) website. Interested individuals, agencies and organizations either received electronic notice of the EA or received a hard copy of the document. The NPS sent 270 notices and newsletters electronically and 205 hard copies of the EA or newsletter. Newsletters were also distributed at local public meetings, at park visitor centers, and to the local library in Desert Center (Lake Tamarisk Brach). The newsletter included a summary of the boundary study finding and environmental analysis. The newsletter and Boundary Study/EA

was posted for comment on the NPS' Planning, Environment and Public Comment (PEPC) website: http://parkplanning.nps.gov/eaglemountain. A press release announcing the start of the public review period was sent to media outlets, and several articles were published on both the study and the public meetings.

The study team conducted four public meetings during the public review period; one online meeting (April 29, 2016) and three meetings at Desert Center (May 3, 2016), Palm Desert (May 3, 2016), and Joshua Tree (May 4, 2016). A total of 109 people attended the four public meetings. At each meeting, the study team presented the study findings and alternatives. Similar to the scoping meetings, participants were able to ask questions and provide comments on the study, which were recorded on flipcharts by NPS staff. NPS also took notes of comments and questions during the online meeting. Attendees were provided information about how to submit comments electronically and through the mail.

During the 58-day comment period, 9,241 correspondences (e.g., letters, emails, public meeting transcripts) were evaluated. From these correspondences, the planning team summarized a total of 172 unique correspondences (e.g., entire letters, emails) and 63 statements of concern. Four of the unique correspondences represent approximately 98% of the total correspondences received (~9000). These four comments represent several organized campaigns in support of adding lands to Joshua Tree National Park. Of the more than 9,000 total correspondences received, more than 98% supported an addition of lands in the Eagle Mountain area to Joshua Tree National Park. Of those comments in support of a boundary adjustment, roughly 64% supported Alternative D, or the maximum possible addition to the park, with the remaining 36% supporting a combination of Alternatives C and D.

Of the unique comments, approximately 51.5% supported an addition to Joshua Tree National Park, while 48.5% supported No Action, or suggested other alternatives that would retain BLM management of the federal lands. A comment summary is contained in *Appendix A, Public Comment and Concern Report.*

Consultation and Coordination

US Fish and Wildlife Service

The US Fish and Wildlife Service (USFWS) participated in an agency scoping meeting on July 16, 2015 and USFWS and NPS staff had a meeting about the project in May 2016. The NPS and USFWS conferenced on the boundary study in May 2016 and both agencies agreed that the action of a boundary study would have beneficial effects to the desert tortoise and would result in no harm or other adverse impacts to species. USFWS wishes to stay involved in planning for any future use of the transferred lands and further consultation will be conducted as appropriate.

State Historic Preservation Office (SHPO)

In April 2016, Joshua Tree National Park initiated consultation pursuant to 36 CFR Part 800 with the State Historic Preservation Officer of the California Office of Historic. A reply from the SHPO dated June 1, 2016 (NPS_2016_0418_002) concurred with the following NPS recommendations: 1) the proposed action was a federal undertaking, 2) the Area of Potential Effect (APE) was sufficient to take direct and indirect effects into consideration, 3) the historic property identification and evaluation efforts are sufficient, and 4) concurred with the finding of No Adverse Effect under the condition that certain conditions and unanticipated discoveries may require future responsibilities under 36 CFR Part 800.

Native American Tribal Consultation

In April 2016, Joshua Tree National Park initiated consultation with the park's 15 traditionally associated, federally recognized Native American tribes. The park received responses from two (2) of the 15 federally recognized Native American tribes. The Agua Caliente Band of Cahuilla Indians replied May 9, 2016 (01-018-

2016-002) that they had no comments on the Boundary Study project, but wished to be provided with updates as the study progressed. The park received a letter from the Colorado River Indian Tribes in August of 2015 in response to the initial public announcement of the Boundary Study requesting a Section 106 consultation meeting. The park has contacted the Colorado River Indian Tribes numerous times over the past year to arrange a meeting with tribal leadership. Due to the limited availability of Colorado River Indian Tribes staff, the park has not been able to set a meeting date yet despite repeated efforts. Consultation with the Colorado River Indian Tribes is ongoing.

California State Clearinghouse

The California Office of Planning and Research (OPR) is responsible for implementing Presidential Executive Order (EO) 12372 requires federal agencies to use state and local process for intergovernmental coordination. CEQA allows for use of National Environmental Policy Act documents in place of California Environmental Quality Act (CEQA) documents if submitted through the OPR State Clearinghouse (SCH). The SCH which coordinates the state-level review of environmental documents prepared pursuant to the CEQA. California State Lands Commission (CSLC) would need to comply with the CEQA to consider a land exchange or sale of State school lands for which it is the trustee. To the extent possible, the CSLC will rely on the EA for CEQA purposes. During public review of the Boundary Study/EA, CSLC requested that the EA be circulated through the SCH. The Boundary Study/EA was submitted to the SCH in June 2016. On July 25, 2016, the park received a letter from the SCH stating that no state agencies submitted comments and acknowledges that the park has complied with the State Clearinghouse review requires, pursuant to CEQA (SCH# 2016064003).

Conclusion

Based on the environmental impact analysis contained in the Environmental Assessment and the results of public review and agency coordination, the National Park Service has determined that the Selected Alternative does not constitute a major federal action that will significantly affect the quality of the human environment. The Selected Alternative is not without precedent, nor is it similar to an action which normally requires an environmental impact statement. No connected actions with potential significant impacts were identified. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality, an Environmental Impact Statement will not be prepared.

Recommended:

David Smith, Superintendent, Joshua Tree National Park — Date: December 6, 2016

Approved:

for Laura E. Joss, Regional Director, Pacific West Region — Date: 12/7/16

Appendix A: Public Concerns and Responses Report

Introduction

This *Public Concerns and Responses Report* is a summary of the voices heard during the 58-day public comment period on the *Eagle Mountain Boundary Study Including Possible Land Withdrawal Environmental Assessment (Boundary Study/EA)*. The document was released for public review on March 31, 2016, and the National Park Service accepted comments through May 27, 2016. During the comment period, 9,241 signed correspondences (e.g., letters, emails) were received. From these correspondences, the planning team summarized a total of 172 unique correspondences and 63 statements of concern. This report provides a summary of all public comments, concern statements, representative quotes that support these statements, and the NPS responses to the substantive issues captured in these statements. All written comments were considered during the preparation of the *Finding of No Significant Impact (FONSI)* in accordance with the Council on Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act (40 CFR 1503-1506).

Public Comment Summary

Public comments were received by U.S. mail, online via email, and through the Planning, Environment, and Public Comment (PEPC) website. All comments received during the public comment period were considered and are now part of the decision record for this study.

As a whole, most of the signed correspondences received (98%) supported inclusion of study area lands into Joshua Tree National Park (boundary adjustment or boundary addition). Many of these correspondences were derived from several organized campaigns in support of adding lands to Joshua Tree National Park. Other comments supported *Alternative A: Continue Current Management (No Action)* (Alternative A) or retention of Bureau of Land Management administration, citing concerns about the effects of NPS management on existing uses of the area including mining and use of off-highway vehicles (OHV). A few commenters supported *Alternative B: Federal Agency-to-Agency Land Transfer (~22,135 acre boundary addition)* (Alternative B) as a means of accommodating existing uses while allowing for protection of lands by the NPS.

The NPS also received numerous comments objecting to the Eagle Mountain Pumped Storage Hydroelectric Project (pumped storage hydroelectric project). Commenters were specifically concerned with potential impacts to water resources, dark skies, and wildlife. Commenters also urged the BLM to complete an environmental impact statement in its consideration of a BLM right of way to accommodate water and transmission lines to support the project.

Comments in support of *Alternative C: Agency Transfer with Enhanced Habitat Connectivity and Recreation – NPS Preferred Alternative and Proposed Action (~25,070 acre addition)* (Alternative C), *Alternative D: Restore 1936 Boundary to Provide Diverse Visitor and Resource Protection Opportunities – Phased Approach (~28,600 acre addition)* (Alternative D), a combination of C and D stated that a broader boundary adjustment would enhance recreational and economic opportunities in the region; preserve dark skies; protect critical habitat and wildlife corridors for desert bighorn sheep, golden eagle and desert tortoise; and allow the National Park Service interpret the history of the California desert related to Native American cultures, mining, the origin of modern healthcare, the Colorado River Aqueduct and General Patton's World War II Desert Training Camps. As mentioned above, these comments comprised the majority of comments received and came from four letter-writing campaigns. A few commenters felt that there should be an alternative to transfer all lands in the study area to the NPS for management.

Organized groups that supported the inclusion of study area lands into Joshua Tree National Park (primarily either Alternatives C or D or a combination thereof) included the Wilderness Society, Greater Palm Springs Convention and Visitors Bureau, American Alpine Club, National Parks Conservation Association, Joshua Tree Chamber of Commerce, Sierra Club San Gorgonio, Audubon Society San Bernardino Chapter, International Dark Sky Association (IDA), Center for Biological Diversity, Desert Protection Society, Desert Protective Council, Desert Tortoise Council, Friends of Big Morongo Canyon Preserve, Mojave Desert Land Trust, Morongo Basin Conservation Association, the Amargosa Conservancy, and Transition Joshua Tree. Alternative C and D boundary adjustment proposals also received support from 38 local and visiting musicians, artists, photographers and writers who wish to preserve the pristine beauty, unique landscape, and vast openness of the Eagle Mountains. Also received was a letter from 12 biological scientists from across the country with expertise in varied fields within ecosystem, community, population and organismic biology. They noted that "there is an overwhelming consensus in the scientific literature that geographical contiguity of habitat provides one of the most effective methods of preserving biodiversity and securing population connectivity that promotes natural population level dynamics for all wildlife both plant and animal" and believe that the "variety of important ecosystems and biological resources in the study area…would be best managed by the National Park Service as part of Joshua Tree National Park." Alternative C was also supported by the Mojave Desert Land Trust, the City of Palm Springs, the Metropolitan Water District of Southern California, and California Assemblymember Eduardo Garcia, whose district covers most of Joshua Tree National Park.

The Mojave Desert Land Trust, while supporting a combination of Alternatives C and D, encouraged the NPS to find a reasonable way to accommodate those interests of those hold interest in unpatented mining claims in the Eagle Mountain area. The California State Lands Commission (CLSC) stated their desire to retain their fee owned State School Lands for potential future mineral exploration and development. However, in the event that Kaiser Eagle Mountain, LLC (KEM) divests itself of the interest in the surrounding lands associated with the Iron Chief Gold Mine as a result of a donation to the National Park Service, the CSLC would consider an exchange of these fee owned lands for lands of comparable value.

Many local businesses also wrote in to express support for inclusion of Eagle Mountain lands in Joshua Tree National Park. Southern California Edison expressed support for the area's conservation and requested consideration of its needs to maintain and retrofit equipment related to existing and future electrical and telecommunications infrastructure and expressed some concern about the costs of implementing a boundary adjustment.

Individuals and some organized mining and recreational groups (First Class Miners, Inc.; West End Prospectors Corp; Public Lands for the People) supported Alternative A, advocating for continued BLM management and expressing concern about the loss of the ability to mine, camp and use off-highway vehicles (OHV) in the study area. Many stated that natural resources and public safety would be threatened if visitor opportunities are improved and increased. Some of these commenters were specifically concerned that the inability to use OHVs in the Eagle Mountains would restrict accessibility to those who cannot hike through the desert. Many of these commenters stated that wildlife resources have not been impacted by the existing mining small scale mining or due to BLM management of the land. Some supporters of Alternative A were concerned that NPS could not secure enough funding or staff resources to support a boundary expansion and questioned NPS' ability to effectively manage additional lands. Others objected to the entrance fees that would be collected under NPS management, and stated that these fees would reduce recreational use and opportunity of the area and negatively increase traffic. These commenters also argued that as more of the California Desert is designated as national monuments or wilderness areas, public recreation and mining becomes increasingly restricted. There

were also commenters that felt Eagle Mountain public lands belong to the people of the United States, not the federal government. Others expressed that the Boundary Study/EA did not adequately justify the need for a boundary expansion as the lands do not contain unique features that warrant inclusion in the park. Some of these commenters suggested that the NPS consider other alternatives that would retain BLM management of the federal lands, allow visitor existing uses to continue but prohibit development of the area (i.e. establishment of a special management area or recreation area). A group called Citizen Taxpayer Voters of Riverside County, San Bernardino County, Los Angeles County, and Kern County, California also wrote in support of Alternative A, citing concerns about damage to the lands as a result of the Eagle Mountain Mine, as well as concerns about future impacts that could result from the proposed pumped storage project.

Businesses and landowners with interests in the study area submitted letters containing a number of concerns and comments. CIL&D, LLC, Eagle Mountain Mining & Railroad Company, LLC (EMMR), Mine Reclamation, LLC, Eagle Crest Energy Company, and Kaiser Eagle Mountain, LLC (KEM) provided similar comments but supported different alternatives. These comments clarified interests and ownership, including mineral rights and agreements regarding the Eagle Mountain Mine. The businesses and adjacent landowners raised collective concerns regarding the Boundary Study/EA's description of the amount of aggregate material currently available at the mine, as well as the Boundary Study/EA's dismissal of the possible resumption of large scale mining. All entities also felt that as a result of the highly disturbed nature of the mine lands, that these areas would be unsuitable and infeasible for inclusion into Joshua Tree National Park. Additional questions were raised regarding the habitat values of the previously mined areas with regard to desert tortoise and desert bighorn sheep, and the environmental analysis regarding these species. Other comments focused on the characterization of the Boundary Study/EA's purpose and need, other aspects of the boundary adjustment analysis findings, and certain aspects of the environmental analysis, particularly how it pertains to cumulative effects associated with the proposed pumped storage project on water, wildlife, and visual impacts. KEM and CIL&D expressed concern that a geology map and mineral potential report was not completed to inform the environmental assessment.

The Eagle Crest Energy Company supported a modified Alternative C that excluded the right-of-way for the pumped storage hydroelectric project described in their most current SF-299 application pending before the BLM. Eagle Crest also expressed concerns about isolation of numerous federal parcels within the boundaries of the private pumped storage project property. KEM supported a modified Alternative B that would include the transfer of all federal lands to NPS management, excepting all lands with mining and mill site claims, existing rights-of-way, as well as lands withdrawn under the Federal Power Act. CIL&D, LLC, Eagle Mountain Mining & Railroad Company, LLC (EMMR), Mine Reclamation, LLC supported the No Action alternative, but stated that it would also support a modified Alternative B if the NPS reissued the environmental analysis with a completed mineral potential report.

Analysis Methodology

The letters, emails, and public meeting comments represented in this *Public Concerns and Response Report* were analyzed using the Planning, Environment, and Public Comment (PEPC) database, which was developed by the NPS and is used Servicewide.

Correspondence received during the comment period was analyzed in a series of stages. Staff read each piece of correspondence to identify discrete points expressed by the author, each of which is considered to be a "comment." Each comment was assigned a code in order to associate that comment with a particular resource topic, or element of the plan (such as mineral resources or wildlife). The coding structure enabled comment organization by topic area. Once coded, the individual comments were categorized to capture specific concerns

and issues. The coded comments are stored in a database where they can be quickly accessed using a variety of query and reporting tools. Comments were reviewed as "substantive" and "non-substantive." Substantive comments are those comments that:

- question, with reasonable basis, the accuracy of the information in the *EA*
- question, with reasonable basis, the accuracy of the environmental analysis
- develop and evaluate reasonable alternatives other than those presented in the *EA*
- cause changes to the proposal or alternatives
- suggest factual corrections

Consistent with CEQ guidelines and NPS *Management Policies 2006*, comments in favor of or against the proposed action or alternatives, or comments that only agree or disagree with NPS policy, are not considered substantive. These non-substantive comments are captured in the above comment summary. Similar substantive comments were grouped together to develop a unique "concern statement". The concern statement summarizes the main points or common themes expressed across one or more substantive comments. Such statements are derived from and supported by one or more representative quotes from original correspondence. Each statement is worded to give decision-makers a clear sense of what action is being requested. Public concern statements are also intended to help guide the reader to comments on specific topics of interest. They do not replace the actual comments received from individuals. Rather, concern statements should be considered as one means of accessing information contained in original correspondence.

The concern statements were screened to determine whether the statement involved a request for further clarification or modification of the proposed action. The responses to concern statements point to sections of the Boundary Study/EA for further information or clarification; provide background or relevant information in that addresses the substance of the comment; explain why comments were considered, but ultimately dismissed from further analysis; or describe changes to the Boundary Study/EA. No responses were generated for non-substantive comments (such as personal opinion) or comments that misrepresented the proposed action.

If concerns warranted modifications to the proposed action, concerns were brought to park management for further deliberation. As a result of comments received, modifications were made to Alternative C, the Preferred Alternative identified in the Boundary Study/EA. These changes are reflected in the Selected Alternative identified in the FONSI. The Selected Alternative represents the National Park Service's final recommendation.

Analysis Results

From 9,241 total correspondences received, the planning team determined that 172 were unique. Of the total correspondences received, approximately 98% (~9000) were received from several organized campaigns in support of adding lands to Joshua Tree National Park. *Table 1* describes the distribution of correspondence by type. Of the 172 unique correspondences, slightly more than half supported an addition to Joshua Tree National Park, while the remainder supported No Action, or suggested other alternatives that would retain BLM management of the federal lands.

Correspondences were received from individuals, businesses, elected officials, and organizations. The NPS identified 680 comments from the 172 unique correspondences. Of these 680 comments, 218 were identified as substantive, and 462 were identified as non-substantive. *Table 2* shows the substantive comment topics. The 218 substantive comments were further categorized into 63 concern statements. The concern statements and NPS responses follow in the next section of this report.

Table 1. Types of Correspondence Received

Correspondence Type	Number Received	Signatures Received
Businesses	10	136
Civic Groups	1	1
Conservation/Preservation Groups	9	5,841[1]
Non-governmental Groups	1	3
Recreational Groups[2]	19	19
State Government	3	3
Town/ City Government	2	2
Tribal Government	2	2
Unaffiliated Individual	124	3,222[3]
University/Professional Society	1	12
Total	**172**	**9,241**

[1, 3] Includes form letters supporting adding lands to Joshua Tree National Park

[2] Includes comments from mining groups

Table 2. Types of Substantive Comments

Categories of Substantive Comments	Quantity
Boundary Criteria	24
Feasibility	25
Purpose and Need	7
NEPA and Study Process	9
Changes to alternatives	4
Recommendations for New Alternatives	3
Suggestions to Alternative C (Preferred Alternative)	7
Suggested changes to the No Action alternative	13
General suggestions to boundary adjustment or alternatives	7
Public Involvement/Communication	2
Night Sky	1
Public Safety/Hazardous materials	1
Socioeconomics	1
Scenic Landscape/Viewshed	2
Cultural Resources/history	3
Wilderness	3
Segregation and Withdrawal Process	3
Socioeconomics	4
Wildlife Resources	22
Minerals/Geology/Mining	36
Land Management	20
Recreation and Access	21
Total	218

Acronyms

Commenters used the following acronyms in their comments, some of which are excerpted below. Additional acronyms can be found on page vii of the Boundary Study/EA.

ATV- All terrain vehicle
BLM - Bureau of Land Management
CEQ - Council on Environmental Quality CDPA - California Desert Protection Act
CSLC - California State Lands Commission
DRECP - Desert Renewable Energy Conservation Plan
EA - Environmental Assessment
EMMR - Eagle Mountain Mining and Railroad, LLC
FERC - Federal Energy Regulatory Commission
JTNP - Joshua Tree National Park
KEM - Kaiser Eagle Mountain, LLC
LUPA - Land Use Plan Amendment
NEPA - National Environmental Policy Act
NPS - National Park Service
OHV - Off-highway vehicle
USFWS - U.S. Fish and Wildlife Service

Substantive Concerns and Responses

The following text presents public concerns identified during the comment analysis process and are organized by topic. A final Boundary Study/EA has been prepared, which provides the modified preferred alternative (Selected Alternative) as well as list of technical corrections and clarifications which respond to public review comments.

Note: Both comments and responses refer to page numbers in the Boundary Study/EA. These page numbers correspond to the public draft version, not the final Boundary Study/EA.

Purpose and Need

Concern 1: The discussion in the Purpose and Need which states the Eagle Mountain Pumped Storage Hydroelectric Project footprint and associated rights-of-way contain wildlife corridors that are linked to habitat in the surrounding park lands is incorrect.

> *The bighorn sheep do not traverse down into and out of the mine pits to access Joshua Tree National Park as there is no food in the pits, and a risk from predators, to encourage this significant expenditure of energy by the sheep. The bighorn sheep currently move between the pits and will continue to be able to do so after project construction. Desert tortoises do not migrate or maintain a "corridor" in the study area nor does the area support genetic connectivity for that species. The area is not a Desert Wildlife Management Area ("DWMA") or designated critical habitat for the tortoise, and has a very low population density of tortoises due to the presence of disturbed lands. The location of the project transmission and pipeline infrastructure was carefully analyzed with a focus on the least impact to desert tortoise by the USFWS in the Project Biological Opinion (2011) and FERC in the [Eagle Mountain Pumped Storage Hydroelectric Project] FEIS. (Business Correspondence)*

Response: The general area is a preferred migration route for desert bighorn sheep herds residing in the Eagle and Coxcomb Mountains as has been documented in a recent telemetry study by Epps (2007); therefore it is important for habitat connectivity for bighorn sheep populations that reside within the park. Although the maps in Epps 2007 are at a very broad scale, it does show the priority corridor from the Eagle Mountains to the Coxcomb Mountains (see page 721 of Epps 2007). This same data is used in the map on page 37 of the Boundary Study/EA. A 2014 study confirms the relative importance of this particular corridor to other regional bighorn sheep corridors based on genetic testing (Creech 2014, page 612).

Although the exact movement of desert bighorn sheep in the area is has not been extensively studied, they are known to utilize the area in and around the hydroelectric project footprint. As the commenter notes, bighorn sheep populations in the Eagle and Coxcomb Mountains travel between the former mining pits. The *Final Environmental Impact Statement for the Eagle Mountain Pumped Storage Hydroelectric Project* (2012) and information collected by the Bureau of Land Management for the Eagle Mountain Landfill EIS scoping in 2014 show occasional use of the pits by bighorn sheep. After rain events, water collects in the bottom of the pits which allows them to serve as a temporary watering site. Once additional surveys are completed, we will gain a better understanding of the precise movement patterns of the area's bighorn sheep. The commenter is correct that the pits themselves are not part of the priority migration corridor. The NPS has clarified this statement in the environmental assessment.

As detailed in the response to Concern Statement #12, the area east of the Eagle Mountain Townsite is important for desert tortoise habitat connectivity, as identified in both the *Desert Renewable Energy Conservation Plan, Land Use Plan Amendment to the California Desert Conservation Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan* (September 2016) and the U.S. Fish and Wildlife Service's *Biological Opinion on the Desert Sunlight Solar Farm Project* (July 2011).

Concern 2: The NPS discussions about water resources in the Purpose and Need section include unsupported statements and incorrect claims. Springs in Joshua Tree National Park are fed by local groundwater systems and would not be affected by withdrawals for the proposed hydroelectric project.

> *In the Purpose and Need Section the NPS states that, "Future use and development of study area lands could affect important water resources within the park. JTNP's aquifers and springs are connected underground to aquifers in the Eagle Mountain area." EA at 14. But springs within JTNP are fed by local groundwater systems that would be unaffected by withdrawals by the Eagle Mountain Pumped Storage Hydroelectric Project. (Business Correspondence)*

Response: The NPS concurs that springs in Joshua Tree National Park are fed by local groundwater sources. The purpose and need has been corrected to reflect this. However, the Pinto Valley groundwater basin underlying the park is hydraulically connected to the Chuckwalla Valley basin which underlies portions of the study area. NPS has concerns about the potential cumulative effect of both existing and future energy development in the broader region on water resources, including existing and future projects within the Riverside East Solar Energy Zone. This broader concern remains reflected in the purpose and need description.

Concern 3: In the Purpose and Need Section, NPS states that impacts to night skies, quiet, air quality, and wilderness "could be affected by proposed future uses of the area." Once the Eagle Mountain Pumped Storage Hydroelectric Project is complete, there will be very little noise because the Project "mechanics" are underground and the water will be shifted between the reservoirs with little sound. Night skies will be protected by mandatory FERC license requirements that meet all NPS requirements.

> *The [Eagle Mountain Pumped Storage Hydroelectric Project (or Project)] will not lower JTNP's air quality, which we understand is among the worst in the Park System. The Project will, in fact, facilitate the development of intermittent renewable energy sources by providing energy storage and non-emitting power generation. The alternative means for renewable energy integration in California is gas-fired turbines, which emit greenhouse gases and [volatile organic compounds] which contribute to ozone formation." (Business Correspondence)*

Response: The NPS acknowledges that the Eagle Crest Energy Company, through its FERC license requirements, is taking many efforts to protect dark night skies and natural quiet. The NPS statement about impacts to night skies, quiet, air quality, and wilderness in the purpose and need statement reflects broader concerns about the cumulative effects of the level of development occurring in and around Joshua Tree National Park in the vicinity of the study area, as well as the potential effects of future uses allowable under existing Bureau of Land Management land use designations for the area. As stated in the Boundary Study/EA on pages 168-169, primary sources of air pollution affecting Joshua Tree National Park are located beyond the park boundary generated from sources in surrounding urban areas. However, at a local level, preservation as a result of the action alternatives could potentially reduce the amount of locally-produced particulates that contribute to the larger air quality and haze issues that could result from future allowable uses.

Concern 4: The Eagle Crest Energy Company expressed concern about the language related to the proposed segregative period for the Eagle Mountain area as it pertains to the Eagle Mountain Pumped Storage Hydroelectric Project.

> *We appreciate the Park's recognition that, "License, permits, cooperative agreements, or other discretionary land use authorizations, including those related to the [Project] may be issued by the BLM during the temporary segregative period . . ." but question the additional language, "after coordination with the National Park Service to ensure protection and consideration of national park values." EA at 13. The NPS has already been afforded the opportunity to participate in the FERC licensing of the Project and as required by the Project license terms will play a continuing monitoring and consultative role throughout the life of the Project. The Project, as we explained in our scoping comments has gone through an extensive State and federal environmental review process in which NPS was an active participant that involved several federal and California permitting and environmental review… (Business Correspondence)*

Response: This statement applies to new requests for discretionary land use authorizations that are under consideration during the segregative period. Because the segregation is related to this Boundary Study, it is important for BLM and NPS to consult on projects that that seek discretionary land use authorizations that could affect resources and values in the Boundary Study area. To this end, the NPS has consulted with the BLM regarding the Environmental Assessment for the discretionary rights-of-way that Eagle Crest has applied for. The NPS and BLM will also jointly hosting a public meeting on the proposed withdrawal and will coordinate on responding to public comments on the proposed withdrawal.

Boundary Adjustment Authorities

Concern 5: The NPS should address the statutory requirements of a boundary adjustment under the authorities of the Land Water Conservation Fund Act of 1965.

> *The Boundary Study indicates future land acquisitions through donation and purchase may be necessary (e.g., EA at 17, 67, 89), but does not discuss the statutory requirements for such actions which include a limitation of 200 acres, a value of less than $750,000, a requirement that the expansion is not a "federal action significantly affecting the quality of the human environment," a requirement to obtain written consent from fee landowners and that the acquisition is not "an element of a more comprehensive boundary change." Id. The Final EA should address these statutory requirements in the context of the inclusion of fee land in the JTNP boundary. (Business Correspondence)*

> *The Boundary Study states that future private land acquisitions may occur through donation or purchase. The Boundary Study does not adequately discuss how NPS will proceed with respect to the private lands. The applicable statutory provisions for lands acquired with LWCF funds also list a number of criteria that must be met (54 U.S.C. § 100506 (c)(5)(A)-(G)) but these are not set forth or explained in the Boundary Study. There is also no discussion on how these statutory requirements will be satisfied by the NPS. At a minimum, these criteria and how they will be satisfied need to be fully discussed in a final or revised boundary study. (Business Correspondence)*

> *Although "minor" is not defined, we are not convinced that an increase of this size is a "minor" boundary adjustment. The statute provides the Secretary with two authorities depending on whether*

LWCF monies are used or if donated lands, donated funds or a transfer of federal lands are used to expand a park. 54 U.S.C. § 100506(c)(l)(A) and (B). If federal funds are to be used to acquire lands, then the statute provides seven criteria that must be met. 54 U.S.C. § 100506(c)(5)(A)·(G). (Business Correspondence)

Response: The mechanism for implementation of the proposed boundary adjustment is dependent upon the availability of properties and the means by which they would be acquired by the National Park Service. As stated on page 17 in Chapter 2 of the Boundary Study/EA, "New legislation for the area's federal lands is not needed to transfer administrative jurisdiction of the area's federal lands from the BLM to the NPS. This transfer can be accomplished within the Secretary of the Interior's existing legal authorities. However, boundary expansion proposals for lands not in federal ownership may require authorization by the United States Congress."

Assuming lands could be acquired by the NPS through a combination of federal land transfer, land exchange or donation, a boundary adjustment could be implemented through the authority prescribed in 54 U.S.C. § 100506 (c) (1) (B) which authorizes the Secretary to: "acquire by donation, purchase with donated funds, transfer from any other Federal agency, or exchange, land, water, or interests in land or water adjacent to the System unit, except that in exercising the Secretary's authority under this subparagraph the Secretary—

(i) shall not alienate property administered as part of the System to acquire land by exchange;
(ii) shall not acquire property without the consent of the owner; and
(iii) may acquire property owned by a State or political subdivision of a State only by donation."

The provisions of 54 U.S.C. § 100506 (c)(5)(A)-(G) as referred to in the comment do not apply to boundary adjustments implemented through 54 U.S.C. § 100506(c) (1) (B). The provisions of 54 U.S.C. § 100506 (c)(5)(A)-(G) apply to minor boundary adjustments under 54 U.S.C.§ 100506 (c)(1)(A). The NPS is not using the minor boundary adjustment authority to accept the transfer of BLM-managed lands in the study area.

The preferred alternative has been modified based on public and agency input. While many of the private lands in the study area are suitable for inclusion in an expanded park boundary, these lands may not be available for donation (or third-party purchase and donation) to NPS for many years. If private lands are donated to the NPS, either directly by the owners or through third-party purchase and donation, the NPS could accept the donation under 54 U.S.C. § 100506(c) (1) (B) and the requirements of 54 U.S.C. § 100506 (c)(5)(A)-(G) would not apply. If private lands identified in the Selected Alternative could not be acquired under those mechanisms, other means of implementation may be required, such as Congressional legislation.

Concern 6: The NPS should explain the two other provisions of The Land and Water Conservation Fund Act of 1965: a requirement that the Secretary maintain and present a list to Congress of lands under consideration for inclusion in the National Park System (54 U.S.C. § 100507); and a requirement that individual park "general management plans" indicate "potential modifications to the external boundaries of the System unit, and the reasons for the modifications." (54 U.S.C. § 100502(4). The Boundary Study/EA does not mention that either of these statutory requirements has been met.

As grounds for this modification of the JTNP [Joshua Tree National Park] boundary, the NPS cites to a JTNP Foundation Document (2015) as the plan calling for and guiding this boundary expansion. There is no mention in the EA if the required JTNP "general management plan" or "Secretarial list of lands" address this proposed boundary expansion. The "JTNP Backcountry and Wilderness Management Plan, An Amendment to the 1995 General Management Plan Record of Decision" (January, 2000) does not include a recommendation to modify the JTNP's boundary. The Final EA and Record of Decision should include a discussion of how the proposed action complies with these statutory requirements of the LWCF Act. (Business Correspondence)

Response: The Land and Water Conservation Fund Act statutory provisions related to the maintenance of a list (54 U.S.C. § 100507) and requirement to indicate boundary modifications in a general management plan (54 U.S.C. § 100502(4) are not specifically relevant to the Eagle Mountain Boundary Study.

The NPS evaluates the need and opportunity for adjustment of park boundaries as part of its ongoing planning processes for each national park unit. The NPS can propose boundary adjustments to meet various park purposes, and can also use the boundary study process to explore other conservation and management options. The *Joshua Tree National Park General Management Plan* (1995), with subsequent amendments in 2000 to address lands added through the California Desert Protection Act, does not include a boundary adjustment evaluation of the Eagle Mountain area. At the time the plan was being completed, the area was under consideration for a proposed landfill. The general management plan is not the only mechanism for evaluating a boundary adjustment. The NPS may complete a separate boundary study to evaluate a potential park boundary change. The FONSI for the Boundary Study/EA will serve as the NPS decision document regarding a potential boundary adjustment in the Eagle Mountain area.

Concern 7: The NPS should consult with Kaiser Eagle Mountain, LLC (KEM) regarding the inclusion of lands it owns and controls within the proposed boundary change of Joshua Tree National Park as required by 54 U.S. Code § 100506. This statute, which addresses boundary changes for national parks, requires consultation with affected landowners.

> *KEM has commented and attended public hearings but that is not the same as a consultation. (Business Correspondence).*

Response: The NPS received comments on the Boundary Study/EA from Kaiser Eagle Mountain, LLC. Following public review, the NPS consulted directly with Kaiser Eagle Mountain, LLC (KEM) regarding private lands that KEM owns in the study area.

Concern 8: All of the alternatives presented in the study, with the exception of the No Action Alternative would improperly seek to circumvent the 1994 California Desert Protection Act (CDPA), Public Law 103-433, Title IV, section 402, 108 Stat. 4488, 16 U.S.C. 410aaa (October 31, 1994) as a result of establishing protected buffer zones.

> *While there was an expansion of the boundaries of the Monument and the Monument became a national park, the CDPA itself clearly states that there are to be no protective perimeters or buffer zones to the new JTNP. Indeed, Senator Dianne Feinstein, the author and chief sponsor of the CDPA stated in a February 1, 1995, letter which stated: The [Desert Protection] Act does not prohibit the development of private property adjacent to the newly designated national parks and wilderness areas. In fact, section 103(d) of the Act specifically states 'The Congress does not intend for the designation of wilderness areas in section I02 of this title to lead to the creation of protective perimeters or buffer zones around any such wilderness area. The fact that non-wilderness activities or users can be seen or heard from areas within a wilderness area shall not, of itself, preclude such activities or uses up to the boundary of the wilderness. (Business Correspondence)*
>
> *It is clear from an objective reading of the Boundary Study that the real purpose of the Boundary Study and of the NPS' recommended Alternative C is to create a protective perimeter or buffer zone which directly contradicts the DPCA's express language and intent. The CDPA recognizes that private development can occur up to the borders of JTNP, which would include mining and Eagle Crest's project, and this is true even if such uses could be seen or heard from areas within the wilderness area of JTNP. (Business Correspondence)*

If one follows the reasoning of the NPS to its logical conclusion, then a new cycle of wanting to protect the new boundaries of JTNP will eventually be necessary, perhaps to obtain the lands originally sought for the Monument in the 1930's (see e.g., Park History Chapter Two: A Monument at Any Price), and this process of seeking to expand the boundaries could essentially repeat itself again and again.(Business Correspondence)

Response: The California Desert Protection Act did not limit NPS's independent authority to consider boundary expansions for Joshua Tree National Park in accordance with applicable laws. The Boundary Study has been conducted pursuant to NPS's authority under the 54 U.S.C. Section 100506.

Moreover, the Selected Alternative specifically excludes the majority of private lands in the study area, including lands proposed for the pumped storage hydroelectric project and most of the lands associated with the Eagle Mountain Mine. These lands are currently not feasible additions to the national park. The private lands recommended for addition to the park in the Selected Alternative include lands that the Eagle Crest Energy Company has stated that it would be willing to donate to the National Park Service at a later time.

Concern 9: The NPS should include additional historical context on the legislative history of Joshua Tree National Monument to provide the reader a clearer picture of why lands in the Eagle Mountain area were removed from the park in 1950. A careful review of this history demonstrates that the Eagle Mountain area does not contain resources related to the purpose of Joshua Tree National Park.

When considering the feasibility of inclusion of these lands, NPS should review more carefully the reasons for the 1950 legislation reducing the size of the 1936 Monument. First, the proposed 1936 Monument designation faced internal Park Service opposition because a third of the land was private or state-owned and had already been impacted by development. See Dilsaver 2015... Second, the 1936 Proclamation was "subject to existing rights and prior withdrawals," which included existing mines, patented fee lands and mining claims. The exercise of those rights led to the changes in the suitability of these lands for the Monument in 1950 as discussed in the legislative history we provided in our scoping comments. Those congressional documents reveal that, at that time, the Secretary and the NPS Superintendent supported the congressional action to reduce the Monument because the "monument-quality" values were no longer present. Those physical facts have not changed, indeed since the time of the legislation in 1950 more mining, development and infrastructure has occupied the lands withdrawn from the monument. (Business Correspondence)

Response: The National Park Service may evaluate an area previously omitted from a park boundary where the conditions that led to the omission have changed. The comment focuses only on the legislative history of the park boundary as it relates to the removal of lands in 1950. The legislative history of the park is very complex and was examined in its entirety. This includes the history of the establishment of monument boundaries in 1936, as well as the subsequent expansion of the monument and designation of Joshua Tree as a national park in 1994 as a result of the California Desert Protection Act. Full scale mining operations in the study area ceased over 30 years ago and since that time various other uses of the area of have been proposed.

The California Desert Protection Act found that "the monument boundaries as modified in 1950 and 1961 exclude and thereby expose to incompatible development and inconsistent management, contiguous Federal lands of essential and superlative natural, ecological, archeological, and paleontological, cultural, historical and wilderness values." It is evident from the legislative history (House Committee on Natural Resources Report House Committee on Natural Resources Report 103-498, at 3606, at 3606) that lands in the Eagle Mountain area were not added back into the park at that time mainly due to the planned development of a large solid waste landfill in the area. This condition changed with the withdrawal of the landfill proposal in 2013.

Through the Boundary Study process, the NPS evaluated lands in the study area to determine their suitability for inclusion in an expanded park boundary. As explained in the Boundary Study, many lands in the study area contain resources and values related to the purpose of Joshua Tree National Park and are feasible to include in an expanded park boundary.

Concern 10: There is no language in either the legislation or the legislative history of the Boundary Revision Law that the lands removed in 1950 should ever again become a part of Monument.

> *Thus, those that maintain that the land removed from the Monument should revert back to JTNP, as is vigorously asserted by such groups as the "Take It Back Campaign," are incorrect…*
> *The BLM has conferred with the Solicitor's Office and has confirmed that there is no language in any of the above-mentioned authorities that requires the reversion of title to any land patented to Kaiser in the vicinity of the Eagle Mountain to the United States for any reason, including but not limited to the cessation of mining. (Business Correspondence)*

Response: Comment noted. The study recognizes that the reversionary interest in lands within the Eagle Mountain area specifically applies to the Eagle Mountain Townsite and other rights-of-way as authorized by Private Law 790 (July 8, 1952).

Boundary Adjustment Criteria Analysis

Concern 11: The NPS has overstated the potential for increased access and public enjoyment that will be available to the public and to NPS staff. The only access on the east is through private lands, in areas where private landowners have denied public access due to liability, public health and safety issues, and for protection of resources and property.

> *"The improved access touted by the Boundary Study would not occur since access would require traversing private land and across mining claims. The two major private landowners in the Study Area, Metropolitan Water District of Southern California and Kaiser Eagle Mountain, LLC, would not likely encourage or grant public access through their respective lands due to security and safety concerns. Encouraging and permitting such access would actually conflict with the currently federally approved mine reclamation plan for the Eagle Mountain Mine which mandates that access be blocked and restricted. (Boundary Study p. 150.) Accordingly, the main entrance to the Eagle Mountain Mine is fenced and gated; access roads are blocked with boulders, berms and other impediments; and security patrols are regularly undertaken at the Eagle Mountain Mine. The Boundary Study fails to discuss what is required to amend the currently approved reclamation plan to allow public access and the costs associated with assuring safety and security. Eagle Crest Energy, as specified in its available public documents, would certainly restrict public access to the property it occupies for its project. [Eagle Mountain Mining and Railroad], as a lessee under the Mining Lease, is unlikely to permit public access through the lands it leases due to operational, safety and security concerns." (Business Correspondence)*

Response: The comment primarily applies to access as it relates to the Eagle Mountain Mine and Townsite within the study area. The boundary adjustment criteria evaluation on pages 44 and 45 of the Boundary Study/EA discusses public enjoyment opportunities as it relates to the resources of the study area as a whole and the potential educational and interpretive opportunities. The study discusses potential public access given the proximity of the area to Interstate 10 and access via existing developed roads, while clearly acknowledging in the determination of feasibility that many of the privately-owned land parcels are not currently accessible to the public and therefore would not be a feasible addition to the park at this time.

The feasibility analysis states (Boundary Study/EA at 67), “The boundary configuration would not include private lands that have previously withdrawn under the Federal Power Act, or other private lands currently used for commercial mining activities (approximately 2,320 acres). These lands would not be available for public use. At such time that the private lands are no longer needed for these uses, those lands could be considered for inclusion in the park boundary.” The NPS would also like to note that while through access to existing park lands through Black Eagle Mine Road from the east would not be possible at this time, there could still be opportunities to provide interpretive information about the former Eagle Mountain Mine outside of the private lands in the eastern portions of the study area, in areas near the private lands. From portions of roads such as the Eagle Mountain Road and Phone Line Road the public has visual access to many to many former features of the Eagle Mountain Mine including the massive tailing piles and remaining Townsite structures. Opportunities to include waysides, a short interpretive trail, or other types of interpretation near such roads could be explored through implementation planning in cooperation with other agencies and landowners. Due consideration would be given to respect adjacent private operations and the needs of the Metropolitan Water District of Southern California’s facilities and lands.

Concern 12: The boundary adjustment analysis is incorrect in its discussion of the desert tortoise and the importance of the area as a linkage zone, migration or habitat corridor.

> *Based on the best available information from the USFWS Biological Opinions for the landfill and Project, the number of tortoise present in the [Eagle Mountain Pumped Storage Hydroelectric] Project area is likely low, due to the highly disturbed nature of, the Project site and poor connectivity among patches of potentially suitable habitat. The mined lands in the central Project are not desert tortoise habitat, and the surrounding areas contain very limited habitat value. This area, therefore, is not "some of the region's most important desert tortoise habitat" as claimed in the Boundary Study/EA. (Business Correspondence)*
>
> *At the outset, there is no scientific support for the implication in the Boundary Study that the desert tortoise migrates in a corridor in this area…The Boundary Study relies upon the Nussear report (2009) as support for its statement and conclusion regarding "the importance of the study area lands for broader landscape connectivity." Boundary Study, p. 33. However, the focus of the Nussear report is a model that determined only the statistical probability of areas of potential areas of desert tortoise habitat. This report cautions, however: "That the map of desert tortoise habitat presented does not account for anthropogenic effects, such as urban development, habitat destruction, or fragmentation, or natural disturbances such as fire, which might have rendered potential habitat with much lower potential in recent years." (Business Correspondence)*

Response: The comments are largely based on USFWS biological opinions and desert tortoise surveys from 1992 (associated with the formerly proposed landfill project) and 2011 (Eagle Mountain Pumped Storage Hydroelectric Project) and do not appear to consider the growing body of scientific literature on the importance of habitat connectivity of the broader area for the survival of desert tortoise as documented in the USFWS *Biological Opinion for the Desert Sunlight Solar Farm Project* (2011) and the BLM’s recent, land use plan amendment to the California Desert Conservation Area Plan completed as the first phase of the *Desert Renewable Energy Conservation Plan Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan* (DRECP LUPA, BLM 2016). The USFWS opinion cited in the study takes into consideration the importance of the broader area for habitat connectivity, as well as the cumulative effects of existing and proposed energy projects in the Chuckwalla Valley region. The USFWS states: “Quantifying the degree to which a landscape promotes or hinders movements among patches of habitat for a given species, hereafter referred to as “habitat connectivity” (Fischer and

Lindenmayer 2007), has become increasingly important relative to desert tortoise recovery (page 57, USFWS 2011b)."

The 2011 *Biological Opinion for the Desert Sunlight Solar Farm Project* specifically emphasizes the importance of the area as a habitat linkage for desert tortoise in the context of recently approved development projects in the Eagle Mountains and Chuckwalla Valley. Within the biological opinion the USFWS finds on page 57, " . . . the project-by-project and cumulative effects of the renewable energy program within the range of the Mojave population of the desert tortoise have the potential to reduce the amount of available, occupied and/or suitable habitat by hundreds of thousands of acres. The effects from utility-scale projects and impacts to habitat and population (i.e., genetic) connectivity have recently come to the forefront as a significant threat to the desert tortoise. The magnitude and duration of habitat loss that would result from construction and operation of the approved and proposed renewable energy projects along the I-10 corridor have the potential to constrict the remaining habitat linkages and limit gene flow between the Mojave and Colorado deserts."

On page 97 of the Biological Opinion the USFWS states "Within this connectivity area, the higher predicted desert tortoise habitats occur to the west within the upper bajadas of the Eagle Mountains and to the northeast in the upper bajadas of the Coxcomb Mountains (Nussear et al. 2009), and pre-project surveys documented higher densities of desert tortoises in the western portion of the project site compared to the eastern portion of the site (though surveys were not conducted east of Pinto Wash within the high predicted habitats along the bajadas of the Coxcomb Mountains). "

On page 108 of the Biological Opinion, USFWS states "As described in the "Status", "Environmental Baseline," and "Effects" sections, maintenance of established lifetime home ranges and viable desert tortoise populations in the Upper Chuckwalla Valley and contiguous habitats within the Upper Pinto Wash is needed to perpetuate habitat and population connectivity between the Mojave and Colorado/Sonoran portions of the species' range."

The BLM has also acknowledged the importance of the area to desert tortoise in the DRECP LUPA which extends the Chuckwalla Area of Critical Environmental Concern to include portions of the study area. The BLM ascribes the values to this area in Appendix B of the DRECP LUPA.

"The extension of the Chuckwalla unit is in an area of higher value desert tortoise habitat (2009 USGS Desert Tortoise Habitat model). It would provide critical desert tortoise habitat connectivity between the two major desert tortoise populations identified in the Colorado Desert (i.e., the Chuckwalla and Chemehuevi populations) through Joshua Tree National Park. The area is also the designated desert tortoise translocation site from surrounding solar projects."

It should also be noted that the NPS analysis discussion for the boundary adjustment criteria (page 33-34) does not state that the area is a "migration" corridor for desert tortoise, but rather emphasizes the importance of the area for broader habitat connectivity. In the affected environment section the NPS specifically states on page 141 of the Boundary Study/EA that , "Although desert tortoises don't migrate per se, continuous large areas of occupied habitat link populations together genetically, allowing for the movement of genes and ensures genetic diversity (Edwards 2004)." The NPS does note the incorrect terminology regarding "migration corridors" as it relates to a photo caption on page 31 which has been corrected. However, the photo caption is not part of the NPS substantive analysis related to the boundary adjustment criteria evaluation and environmental assessment.

Finally, the NPS would like to note that the study does not state that the Eagle Mountain Mine has high quality desert tortoise habitat. Given the terrain of much of the mine, much of the area would not be suitable habitat. It

is noted that a recent desert tortoise survey completed for the Eagle Mountain Pumped Storage Hydroelectric Project subsequent to publication of the Boundary Study/EA stated that desert tortoises are likely present in the western part of the central project area and good habitat exists in the combined brine pond/transmission line survey area inside the railroad berm (Karl 2016).

Concern 13: The inclusion of the lands in the park boundary will not benefit the operational and management issues stated in the boundary study but will actually hinder operational and management issues for Joshua Tree National Park as it currently exists.

> *First, a close analysis of the Preferred Alternative C, which provides that it would include "contiguous" federal lands, reveals that it would actually do the opposite by fragmenting and isolating lands. It would appear that as a result of the adoption of Alternative C that at least 20 (and perhaps more) areas or parcels would be surrounded by private land or by land located within the Eagle Crest project. A map that accurately depicts these newly created isolated parcels needs to be included in a revised or supplemental Boundary Study. Additionally, the NPS would not have access to these parcels and as a result would not have the ability to actually manage these lands. Management and operational issues for the NPS would actually increase with these numerous "stranded" parcels. At a minimum, these lands would be very difficult to manage and would exacerbate JTNP management and operational issues…In addition, the Boundary Study fails to discuss and analyze the fact and ramifications that the BLM would continue to administer its right-of-way for the Eagle Crest project although it would be located in the expanded JTNP. (Business Correspondence)*
>
> *The Alternative C boundary would result in the BLM lands being fragmented into 21 small, unmanageable parcels, isolated by private lands and NPS-managed lands. (Business Correspondence)*

Response: All of the alternatives evaluated in the boundary study include lands that are contiguous to the existing park boundary. The fragmentation effect mentioned in the comments is largely a result of the configuration of the proposed pumped storage hydroelectric project footprint which would create isolated parcels of BLM-managed land regardless of whether such lands are transferred to the NPS. Eagle Crest Energy Company has applied for a right-of-way application to facilitate development of its water lines and transmission corridors. As stated in Alternative C, the NPS understands that the footprint was preliminary and that this boundary may need to change as the project moves forward to avoid conflict of interest. The NPS Selected Alternative excludes the right-of-way for the hydroelectric project. The proposed boundary adjustment thus excludes all of the isolated parcels.

Concern 14: The NPS fails to justify why the Eagle Mountain Mine would be suitable for inclusion in the national park. The suitability of all of these lands for inclusion in Joshua Tree National Park, particularly with regard to scenery and public enjoyment/interpretation is not supported by the facts given the previous disturbance of the area as a result of past mining and the potential for resumption of large scale mining.

> *Understanding that a significant portion of the land that would be included in an expanded JTNP is really not suitable for inclusion into a national park, the Boundary Study seeks to justify the inclusion of such lands in several ways. For example, the Boundary Study asserts that such lands "may provide opportunities to expand the mining history currently interpreted in Joshua Tree National Park." (Boundary Study, p. 14.) Yet, the Boundary Study acknowledges that access to the open pits may not be permitted due to safety concerns. (Boundary Study, pp. 150, 153.) With currently no significant mining equipment at Eagle Mountain, no material mining facilities remaining, and no access to the mine pits, there is little, if anything, to be seen or interpreted with regard to mining history. (Business Correspondence)*

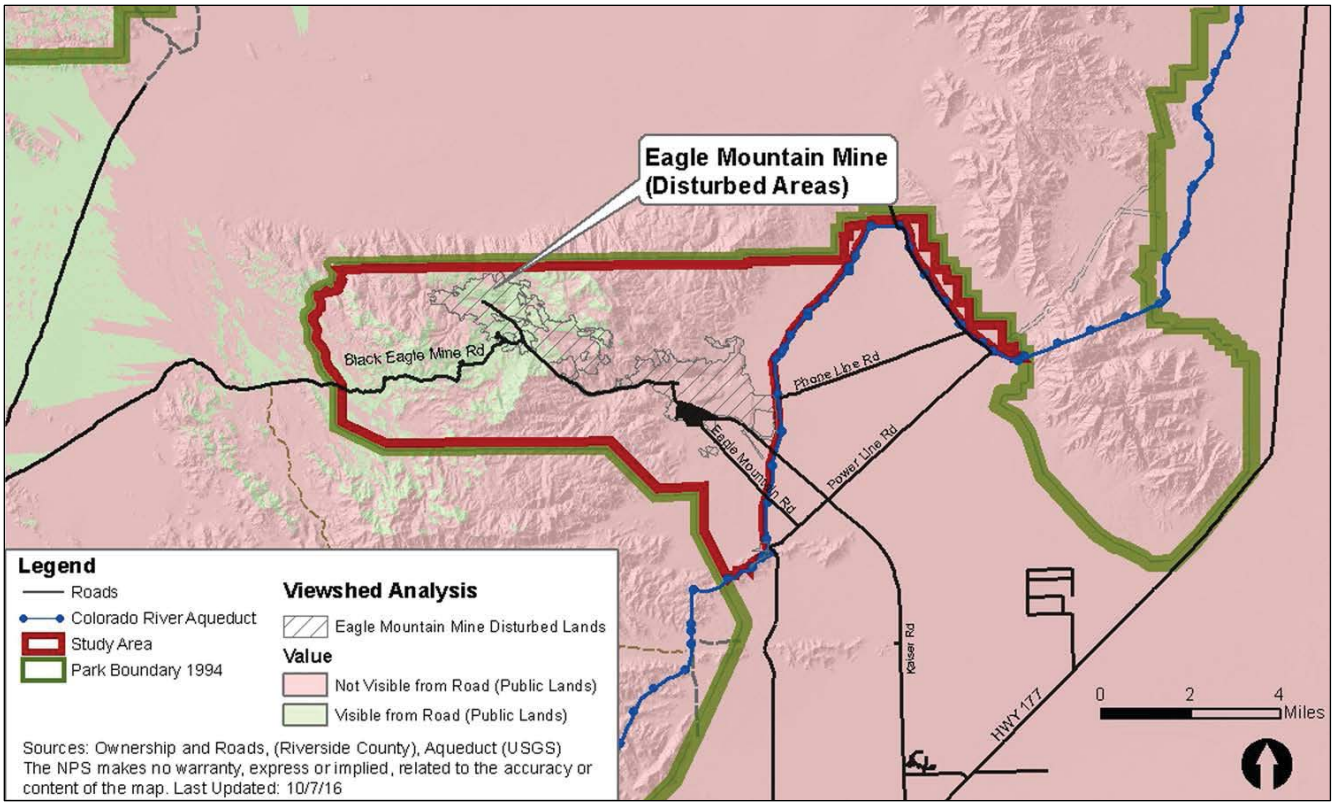
The Boundary Study does not adequately evaluate and discuss the impacts of the past mining and does not discuss the impacts of possible large-scale future mining on the suitability of including the already disturbed lands into JTNP. For example, the Boundary Study fails to evaluate and discuss how the disturbed lands could be viewed from the undisturbed lands that are sought to be included into JTNP. A viewshed study is required. (Business Correspondence)

The NPS fails to fully appreciate and disclose in the EA the condition of the previously mined lands. NPS appears to have an unrealistic view of what reclamation can accomplish on a site that has seen close to 100 years of mining and fifty years of industrialization. (Business Correspondence)

Response: The majority of federal lands under study have not been affected by mine operations; page 151 of the Boundary Study/EA states the majority of the study area lands (roughly 80%) are undisturbed desert landscape. The scenery in the western end of the study area from Black Eagle Mine Road is largely natural. The eastern end of the study area has been altered by the Eagle Mountain Mine and the Colorado River Aqueduct. However, these features have value for cultural interpretation. As stated in the park's foundation document, "Joshua Tree National Park protects and interprets resources related to the history of mining and human use of the desert over time."

Although the NPS was not permitted access to the private lands within the study area, the study team was able to access the area along Black Eagle Mine Road from the west. The NPS also spent time in the study area to the east and was able to observe many cultural features associated with the mine and Townsite, as well as undeveloped landscapes from publicly accessible roads. Much of the viewshed from the western portions of the road did not include disturbed lands. The NPS also generated a viewshed map that indicates visible areas from the publicly accessible portions of Black Eagle Mine Road. Note that most of the visible areas (shown in green) are park landscapes or undeveloped areas of the Eagle Mountains. The below viewshed analysis *(Map 4)* corresponds to the site observations made by the study team.

Map 4: Viewshed Analysis -Public Lands (Publicly Accessible areas of Black Eagle Mine Road)



The NPS would also like to note that while the cultural values of the Eagle Mountain Mine and Townsite make the area suitable for inclusion in Joshua Tree National Park (meeting the first set of boundary adjustment criteria), the NPS clearly indicates that the majority of areas associated with the mine and Townsite would not be feasible additions to the park at this time (therefore not meeting the second set of boundary adjustment criteria). The overall conclusion of the NPS denotes the impracticality of including some of the lands in the park at this time. Although NPS considers inclusion of these areas in a broader boundary adjustment in Alternative D, language in the alternatives states that this would be a long-term vision to be considered only when existing and planned uses cease, and upon further study of feasibility which would examine costs for restoration and management.

It is further noted that although there would be considerable issues with these areas in terms of stabilization, reclamation, restoration, and security, it is not without precedence that the NPS acquires lands or sites that require restoration. Examples include the restoration of the Elwha Dam at Olympic National Park and the restoration of 39,000 acres of previously logged forests at Redwoods State and National Parks. The NPS response to Concern #36 addresses consideration of future large scale mining in the area.

Concern 15: The NPS underestimates the costs associated with managing and operating an expanded Joshua Tree National Park.

> *"Joshua Tree National Park needs twice the money it get[s] now, it score 4th worse on the conservation association's air pollution report card, and "F" for climate change impacts which are threaten to wipe out the park's iconic trees." (Individual Correspondence)*

"The Boundary Study fails to explain how the NPS in 2014 can express concern over the inclusion of the Eagle Mountain Mine that would necessitate "a huge increase in both budget and personnel" (Park History, p. 292) from its current minimal projected increases in costs and staffing needs. (See e.g. Boundary Study, pp. 98, 103-104, 107-108, and 113-114.) . . . National Parks have a long to do list but can't cover the repair costs. (http:/ /www .npr.org/ 2016/03/08/466461595 /national-parks-have-a-long- to-do-list-but-cant-cover -the-repair-costs). An expanded JTNP would greatly exacerbate JTNP's money woes." (Business Correspondence).

Response: Because most of the former mine area and the Townsite are not feasible at this time, an extensive analysis of the cost for management of these areas was not undertaken. As is stated in the feasibility analysis, if those lands became available additional analysis would be necessary.

Concern 16: The NPS should provide more discussion on the funding sources for the resources that would be necessary if Joshua Tree National Park is expanded as proposed.

Taking inflation into consideration, appropriations over the last ten years for the NPS are essentially flat or declining and must be distributed over an increased number of Park units. According to Table 3.1, an additional 5 full-time equivalent {FTE) positions and $8-10,000 per year for maintenance would be needed, in addition to one-time costs for road repairs and other improvements. Sustainable funding is necessary to ensure the additional conservation measures will be durable. (Business Correspondence)

Response: Evaluation of costs is outlined in the feasibility analysis on pp. 86-89 of the Boundary Study/EA. More detailed analysis of costs would be provided during implementation planning.

Concern 17: The NPS should conduct an assessment to determine status of the Eagle Mountain Mine on the list of Superfund Sites.

Do you not know that the "Kaiser" Eagle Mountain is an [Environmental Protection Agency] EPA Superfund site? Or do you know, and decided to suppress that fact? Yes, it is currently on the EPA archived list, but that does not mean that the hazards that got it on the list in the first place, have been abated. Further, to the best of my knowledge, there has not been any follow up assessments done in many years. Leave it where it is. Have a follow-up EPA assessment done (relating to its Superfund status) before ANY changes are considered. (Individual Correspondence)

Response: The Department of the Interior discourages acquisition of property contaminated with hazardous substances. Further, this policy states that contaminated lands should not be acquired unless otherwise directed by Congress, court order, or as determined by the Secretary of the Interior. Any property under consideration for NPS acquisition would therefore be assessed for environmental contaminants. If contamination exists, further evaluation would take place to determine the feasibility of managing the land given the potential transfer of liability and costs for remediation and/or restoration. The NPS is currently in the process of conducting its own Environmental Site Assessment for the federal lands considered for transfer to the NPS for management in the Eagle Mountain area.

Previous evaluation of the Eagle Mountain Mine by the Environmental Protection Agency and the California Department of Toxic Substances Control during environmental compliance for the proposed landfill for the Eagle Mountain area did not identify evidence indicating a significant potential for inappropriate or unauthorized disposal of hazardous substances or hazardous wastes resulting from historic mining operations. An underground storage tank with low-level contamination that was identified in the mine was noted as having been removed from the site (BLM and Riverside County 1996).

Concern 18: The NPS should state whether access to existing private land holdings in the study area would be affected by the boundary proposals and whether any restrictions would be placed on private lands.

> *Our property is remote and we do not disturb anyone with our use. We request that you respect our property rights and in no way infringe on our ability to use our property as allowed under current conditions. (Individual Correspondence)*

Response: Valid existing mineral and private property rights would be respected. Inclusion of a privately owned parcel in the park boundary would not affect existing legal access to the private property. Most National Park Service policies and regulations apply to federal land directly managed by the National Park Service. If the owner were to decide to commence mining or other commercial activities on such lands, then a plan of operations or special use permit may be required for access across NPS lands in compliance with the Mining in the Parks Act and NPS regulations regarding commercial use. Similar requirements may also apply under current BLM management.

Concern 19: The boundary study fails to acknowledge that the Eagle Mountain Mine has a vested mining permit and existing plan of operations with the Bureau of Land Management for its mining claims.

> *In addition to a current approved plan of operations, which allows for mining on the federal lands on which KEM holds mining claims, valid existing rights that would remain after any transfer of the federal lands to the NPS; the Eagle Mountain has vested mining rights allowing for mining on its fee owned land. The Boundary Study fails to disclose and discuss the vested mining rights of the Eagle Mountain Mine and how they may impact the lands within the Study Area. (Business Correspondence)*

Response: The boundary study does reflect the active status of the Eagle Mountain Mine in its evaluation of current uses and existing rights in the feasibility analysis of the private land parcel group.
While the Boundary Study/EA did not use the term "vested mining interest," the intent of the text conveyed that above ground mining currently occurs. Page 129 of the Boundary Study/EA states "extraction, processing and transport off-site of aggregate from stockpiles and related support activities do still occur. These activities are allowable surface mining operations as defined by Surface Mining and Reclamation Act (SMARA), Section 2735." To address this concern, the NPS has noted the KEM's existing plan of operations with the BLM and the private vested mineral interests in the final Boundary Study/EA.

The Selected Alternative would not affect mining on private lands. The private lands proposed for addition are those that Eagle Crest Energy Company has indicated intent to donate to the NPS, when the current deed of trust on the lands has been terminated. Inclusion of these lands in the park boundary would not necessarily prohibit Eagle Mountain Mining and Railroad from extracting aggregate from these parcels. Such activities could continue to occur in compliance with NPS regulations.

Concern 20: The Boundary Study is in error in some of its discussion regarding the Riverside County specific plan applicable to the Eagle Mountain Mine.

> *In fairness to NPS, the zoning/specific plan maps available to the public are in error…the Boundary Study needs to contain an accurate discussion of the Riverside County general plan and zoning ordinances and Specific Plan 305. Regardless, the Eagle Mountain Mine's vested mining right allows for mining under the jurisdiction of Riverside County (Business Correspondence).*

Response: Thank you for the updated information. The NPS has corrected the boundary study to reflect that the area is zoned for mineral resources. The boundary study does reflect the active status of the Eagle Mountain Mine in its evaluation of current uses and existing rights in the feasibility analysis of the private land parcel group.

Concern 21: The proposed boundary expansion would further restrict the potential development of the fee-owned State School Lands and reserved mineral interest to generate revenue. Therefore, it would make it difficult to use these mineral interests that Congress had intended for California State Lands Commission to benefit from State school lands that were originally granted to the State. Such lands would only become available for a land exchange if surrounding mineral rights were relinquished to the NPS.

> *To insure efficient long term management of these lands and to help the California State Lands Commission (CSLC) achieve its goals as trustee of the School Land Bank Fund, the CSLC desires to retain these fee owned lands for potential future mineral exploration and development. However, in the event that Eagle Crest Energy Company divests the interest of the lands in Section 36 comprising the Iron Chief Gold Mine to Joshua Tree National Park, the CSLC may consider an exchange of these fee owned lands for lands of comparable value. (State Government Correspondence)*

Response: The feasibility analysis in the Boundary Study/EA for the State School Lands has been updated to reflect this information. The Selected Alternative also notes the specific conditions under which the California State Lands Commission would be willing to support a land exchange.

Concern 22: The Eagle Crest Energy Company still maintains that it would like to donate lands not needed for the hydroelectric project. However, due to the provisions of the first deed of trust on the Eagle Mountain Mine and related assets, there essentially can be no transfer of any assets of KEM or any interest in such assets, including land and mining claims, by KEM until the deed of trust is terminated. Other restrictions and covenants are imposed upon KEM under the terms of the Mining Lease and Agreement and related agreements between KEM and Eagle Mountain Mining & Railroad Company, LLC.

> *Eagle Crest has affirmed several times (August 2015 Boundary Study scoping comments, in a series of meetings with NPS staff in 2015-16 and in several public meetings, one as recently as May 18, 2016), that Eagle Crest generally supports the expansion of Joshua Tree National Park and will consider, once it can practically and legally do so, the donation of fee lands not needed for the Project to JTNP. Understandably at this stage, our first priority is to construct the Project (Business Correspondence)*

> *While the resumption of large-scale iron ore mining is currently within the control of Kaiser Eagle Mountain, LLC, it is possible that CIL&D could reacquire Kaiser Eagle Mountain, LLC and the Eagle Mountain Mine if there should ever be a default in the note or other security instruments given to CIL&D as a part of the sale of Kaiser Eagle Mountain, LLC. Furthermore, depending upon the price of iron ore, Kaiser Eagle Mountain, LLC could decide that it would undertake extractive iron ore mining. Iron ore mining could commence in the lands in the two pits not utilized in Eagle Crest's project and could be phased so that mining could take place in and around the central and east pits if the Eagle Crest project should ever be decommissioned .(Business Correspondence)*

Response: The feasibility analysis for these parcels has been updated to reflect this information.

Concern 23: The study omitted valuable benchmark information that would inform the feasibility of a boundary expansion by not documenting the acreage of patented landholdings in 1952.

The study and environmental assessment should have provided a map that depicts patented holdings in the Eagle Mountain area on July 8, 1952 when PL 790 was passed. This map would represent an upper level benchmark for which lands and parcels could be considered for inclusion under the boundary study. It appears that a significant number of parcels were eliminated from consideration merely as a matter of convenience and perhaps due to outside influence and actions from other federal agencies (FERC) and private entities. (Individual Correspondence)

Response: The study evaluates all of the parcels that would have been included in the 1936 monument boundary. However, the criteria for which the NPS may consider parcels for inclusion in a park boundary as established in the Land and Water Conservation Fund Act of 1965 determines which parcels would eligible for inclusion at this point in time. Some parcels that have existing proposed uses are not considered feasible for addition to the national park at this time based on current use and management. This includes parcels associated with the Eagle Mountain Pumped Storage Hydroelectric Project, parcels associated with Colorado River Aqueduct, and private parcels with ongoing commercial mining activities.

Concern 24: The Preferred Alternative C boundary does not appear to appreciably enhance opportunities for public enjoyment or the protection of resources over current BLM management. The boundary adjustment analysis fails to recognize the current conservation by the BLM and the proposed BLM land use designations proposed in the DRECP.

I frequent the area and I could tell you there are lots of Big Horn Sheep, Desert Tortoises, Coyotes and Foxes thriving in the area without the protection of the Park Service. I know I'm not a biologist but I feel wildlife has more interaction with humans within Park boundaries then in the Eagle Mountain Area which I feel should be noted. (Recreational Group Correspondence)

The BLM lands identified for acquisition by NPS have evidently enjoyed a level of protection under BLM's stewardship that has maintained resource values. EA at 9 and 35 ("a majority of the federal lands are undisturbed…BLM is taking a significant step to enhance conservation of this area by finalizing the DRECP which will in large part prohibit future renewable energy development of over half the federal lands in the Study Area. The DRECP has identified most of the western Chuckwalla Valley as an ACEC. BLM lands in the western portion of the Study Area are proposed to become National Conservation Lands ("NCLS"). Renewable energy projects will not be allowed on lands in a NCLS or ACEC. Moreover, the balance of the BLM lands in the Study Area that are not included in a DRECP ACEC or NCLS designation (unallocated lands) do not have public access and therefore, there is little to no possibility that renewable energy will be developed in the Study Area at any time in the foreseeable future-which is a primary rationale for the NPS boundary proposal. (Business Correspondence).

Response: In considering the third criterion required for evaluation of a potential boundary adjustment, the NPS evaluates whether existing management alternatives would adequately protect the resources or public enjoyment opportunities. The NPS agrees that the BLM land use plan amendments established through the DRECP LUPA would result in greater protection of the resources in the DRECP Plan area. However, because these land use designations do not apply to the majority of lands in the Eagle Mountains area, there remains the potential for their conversion to other land uses allowable under BLM multiple-use classes assigned to the area. Such uses could negatively impact the visitor experience as well as other natural resource values. Previously, the BLM approved a land exchange for a landfill in the area, which was allowable under the multiple-use classes assigned to the area. This proposal never went forward, largely as a result of litigation.

While the BLM has responsibility under current policies to conserve and protect cultural and historical resources on its land within the study area, the BLM currently does not provide active interpretation of cultural resources

within the study area. Nor does any current BLM management plan call for interpretation or education of cultural resources in the Eagle Mountains. Interpretation of the World War II Desert Training Center history takes place at other sites. There is no existing interpretation of the area's prehistory, Native American history, or mining history, nor is this proposed in any current management plan.

Alternatives

Concern 25: The NPS not discuss what other alternatives may be available for resource protection and to otherwise achieve operational goals (e.g. consultation and collaboration, conservation easements by local conservation groups).

> *For example, the NPS is active in providing comments to environmental impact statements for federal actions in the California desert. As a result of the NPS's comments and its collaboration and consultation with other agencies and with project proponents, the NPS has the opportunity to achieve many of the goals it articulates in the Boundary Study. Furthermore, the Boundary Study should discuss the alternatives of obtaining conservation easements or the purchase of lands by environmentally conscious groups that would control or donate such private property to JTNP as has occurred in the past. These alternatives, as well as others, would certainly be less burdensome on the budget and resources of the NPS at JTNP which is apparently already strained and inadequate to address a "maintenance backlog."5 The Boundary Study analysis of costs is deficient and fails to adequately inform the public. Boundary Study pp. 98, 103-104, 107-107 and 113-114. (Business Correspondence)*

Response: Consultation with other agencies and organizations would not ensure long-term protection of resources related to park values. As described in the feasibility analysis cost section, the NPS often works with local conservation groups to acquire and conserve land. The Boundary Study allows for the possibility that land conservation groups could purchase private lands in the study area and later donate them to the NPS for future inclusion an expanded national park boundary. The NPS does not acquire conservation easements over property that is outside a park's authorized boundary. As a result, NPS would not use this tool in place of a boundary adjustment.

Concern 26: The NPS should consider an alternative that would retain BLM management and permit existing recreational users to maintain certain sections of area, such as through a special land use designation.

> *Instead of putting it in the JTNP, make this area a Special Management Area within the BLM. Congress is increasingly considering "special management areas" in which land is managed for a specific use as mandated by Congress. The term "special management area" is used to describe all types of alternative categories to National Park, wilderness designation or multiple use management under the Multiple-Use Sustained-Yield Act, 16 U.S.C. §§ 528-531 (1982). The alternatives can be improved by including one which designates all BLM lands BLM within the Eagle Mountains east of the current north/south line along GrubStake Rd, and between the north and south boundaries of the Park within this proposed area as they are as of this date, 26 May, 2016, and east to the boundary of the Eagle Crest lands. The special use will allow casual use mining, vehicles on existing trails and roads plus access to mining claims across country, off-road vehicle use on existing trails and roads, plus access to mining claims across country, recreational shooting of personal weapons, hiking, and unleashed pets. (Individual Correspondence)*

> *While I am willing to propose that large scale mining, wind, solar, landfill, and any other large scale, land destroying proposals be prevented, I also propose that the land be retained in the BLM but designated special*

use, allowing current activities to continue but protecting the land from corporate, for profit use. (Individual Correspondence)

Response: Through the Desert Renewable Energy Conservation Plan Land Use Plan Amendment process that concluded in September 2016 (DRECP LUPA), the BLM identified areas appropriate for special management and areas appropriate for renewable energy projects. The DRECP LUPA has established a national conservation area and an area of critical environmental concern for portions of the study area which may prevent certain high intensity land uses in the future and could also affect potential use of the area for mining pending implementation decisions. However, these BLM conservation designations would not provide comprehensive protection of the area to preserve the resources and values related to the purpose of Joshua Tree National Park.

Concern 27: The NPS should consider designating a recreational mining area, allowing limited uses such as off road vehicles and "non-mechanized prospecting."

No provisions were made for the few hundred acres of casual use mining claims on the western side of the area. It seems to me that if the NPS could have taken into account the idea of a special management, a couple thousand acres, left open for the casual use mining. I know it is done in other parks. I believe we have demonstrated we are good stewards of the land and should not shut out due to restrictive policies. (Recreational Groups Correspondence)

Response: The Mining in the Parks Act does not allow NPS to create a recreational mining area that would allow for casual use mining like that which is conducted on BLM-managed land. Prospecting would be allowed to continue on valid mining claims. The NPS may also be able to authorize temporary mining activities pending the completion of the validity process for unpatented claims. Implementation planning for the affected area, should it be included in the park boundary, would further explore opportunities for appropriate recreational use of the area. For example, the NPS could consider designating routes for off road vehicles.

Concern 28: If Alternative B is implemented the NPS should grandfather in access to owners of mineral rights patented or unpatented mining claims.

If Alternative B is implemented I would suggest that owners of mineral rights patented or unpatented be grandfathered in and be able to keep their claims and should be allowed road access. Solar plants are the worst destruction to wildlife and plant life in the Mojave Desert and should be limited in my opinion. (Recreational Group Correspondence)

Response: Under Alternative B, the existing unpatented mining claims would continue to be managed by the BLM. Claim holders would still be allowed access to their claims. Claimants could receive a permit for access by submitting a plan of operations (related to access) that would need to be approved by the Joshua Tree National Park superintendent.

Concern 29: The NPS should consider a modified Alternative B that excludes all valid existing rights including, unpatented mining, and the right-of-way and existing withdrawal for the Eagle Mountain Pumped Storage Hydroelectric Project. This alternative should be released in a new or supplemental boundary study and environmental assessment.

KEM supports a modified version of Alternative B whereby all the identified federal lands are transferred to the jurisdiction of the NPS, except for those federal lands on which are located: (i) mining and mill site claims; (ii) rights-of-ways; (iii) the Federal Power Act ("FPA") withdrawn lands for the Eagle Crest Energy Company ("Eagle

Crest") Eagle Mountain hydroelectric pumped storage project licensed by the Federal Energy Regulatory Commission ("FERC") as described in the Eagle Crest right-of-way SF-299 application (as amended) pending with the Bureau of Land Management ("BLM"); and (iv) other similar items that would be identified in a new or NPS supplemental boundary study for JTNP. (Business Correspondence)

As a backup, Alternative B would be acceptable with minor amendments. Private lands and state, county lands AND ACTIVELY MINED UNPATENTED CLAIMS would not be included in the boundary and would continue to be used for existing purposes. Approximately 380 acres of lands ... UN-PATENTED MINING CLAIMS will remain under BLM jurisdiction. (Recreational Group Correspondence)

Response: Exclusion of all valid existing rights, including unpatented mining and millsite claims, from the boundary adjustment would greatly reduce the size of the boundary adjustment resulting in a boundary configuration that is less effective in protecting national park values such as habitat for desert wildlife and would create new management challenges for the BLM and the NPS. The Selected Alternative excludes lands that are identified in Eagle Crest Energy Company's amended right of way application. The exclusion of these areas reduces the acreage of federal land containing mining and millsite claims that is proposed for transfer to the NPS.

Concern 30: If Alternative C is implemented, the NPS should find a reasonable way to accommodate the rights of those who hold interest in unpatented mining claims in the area.

I think we need to use this land as a limited use area and allow ATV and OHV use on limited trails to truly make this land accessible to all. I don't own a 4 X 4 or a horse. I think we should also allow non mechanized prospecting. (Individual Correspondence)

Mojave Desert Land Trust is concerned that the vocal and focused objections of those who hold interest in unpatented mining claims in the area would be left without financially feasible recourse on their interest in the Eagle Mountain Area under Alternative C. Reverberations from past conservation efforts still echo in present day conversations from those who were pushed out of areas protected in the past. We hope that the Park Service will find a reasonable way to accommodate those interests. (Conservation/Preservation Correspondence)

Response: The NPS is committed to working with members of the Eagle Mountain Mining District and other active claimholders to evaluate the extent to which existing uses could continue under NPS laws and policies. Mining on NPS land is subject to the Mining in the Parks Act and the regulations found in 36 CFR Part 9, Subpart A. The NPS would work with owners of unpatented mining claims to understand the validity process and how their claims might be affected. The NPS could allow operations to continue temporarily during the validity examination process. Some visitor uses, such as OHV use, could be allowed on NPS land. If the park boundary is expanded, the NPS would engage the public in a planning effort to determine the type and extent of visitor uses that are appropriate in these areas.

Concern 31: The NPS should revise the boundaries proposed in Alternative C to reflect the most current BLM SF-299 right of way application for the Eagle Mountain Pumped Storage Hydroelectric Project pending before BLM. This configuration would better comply with NPS boundary criteria and create a more manageable boundary for both the NPS and BLM. The current configuration in Alternative C would create islands, fragmenting management boundaries for the Bureau of Land Management and National Park Service.

Rather than pursue an unmanageable boundary alternative, Eagle Crest recommends a modest, but important revision to Alternative C ("Modified Alternative C" as illustrated in Figure 7) to consolidate contiguous federal and certain fee lands under NPS management to avoid fragmentation of federal land management and interference with the Project. (Business Correspondence)

Eagle Crest submits these comments to underscore the recognition by NPS that the Eagle Crest Project is a separately permitted and authorized activity on lands "withdrawn" for power project development under Section 24 of the Federal Power Act ("FPA"). "The proposed addition would not include ELM-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." EA at 106. No boundary expansion decision that results from the Study or any related administrative transfer of public lands managed by the Bureau of Land Management ("BLM") to JTNP may interfere with the power project development purposes for the FPA- withdrawn lands. 43 CFR §§ 2300 and 2320. The lands necessary for these power purposes have been withdrawn and set aside to fulfill the purposes of the FPA. 43 U.S.C. § 1714. Federal lands included in an application are "from the date of filing of application . . . reserved from entry, location, or other disposal under the laws of the United States until otherwise directed by [FERC] or by Congress." 16 U.S.C. § 818. (Business Correspondence)

Response: Eagle Crest's amended right of way application was not available to NPS when alternatives were being formulated for the Boundary Study environmental assessment. As stated in Alternative C in the Boundary Study/EA (page 106), the NPS recognizes that the boundaries surrounding the proposed project footprint for the Eagle Mountain Pumped Storage Hydroelectric Project are preliminary. The Selected Alternative does not identify lands included in Eagle Crest's amended right-of-way application as feasible for transfer to the NPS in the near term. However, the Selected Alternative recognizes that lands within the right of way application may become available for transfer to NPS if they are not needed for right of way purposes in the future.

Concern 32: The NPS should specify the necessary increases in rangers, resources, and administrative staff and maintenance personnel, as well as needed infrastructure required for a boundary adjustment.

I would like to see these lands incorporated within Joshua Tree National Park, but with mandated increase in ranger, resources and administrative staff and maintenance personnel, as well as needed infrastructure. In other words, I think that new lands should come with the means to care for them!!!! (Individual Correspondence)

Response: Comment noted. The Selected Alternative provides an estimate of the staffing that would be required to manage the proposed additions to the park. A more detailed discussion of costs is included in the feasibility analysis in Chapter 2 of the Boundary Study/EA.

Concern 33: The NPS should consider a broader range of alternatives including at least one alternative that calls for full reversion to NPS management of all lands affected by Private Law 790, specifically including all of the lands patented to Kaiser after July 8, 1952 for development of the Eagle Mountain Mine and Townsite.

Excluding even one acre of these lands to allow the permitting and development of the Eagle Mountain Pumped Storage Hydroelectric Project appears, on its face, to be in violation of the PL 790's reversion language as well as the 1978 Redwoods Act. All of the 289,000 acres removed from the National Monument in 1950 should be examined for their potential for restoration back to NPS

management either as part of Joshua Tree National Park, or as part of a national preserve connected to Joshua Tree, or lastly under a joint management structure such as that used at Parashant National Monument. Reasons for doing this are to correct the past error in removing such a large amount of land from the original national monument, only a portion of which was used for mining. Joshua Tree is under threat today from many large-scale alternative energy projects, and expansion of the park back to its original boundary configurations will help protect core park ecosystem values including air quality, night skies, groundwater, wildlife, and wilderness values. Additional lands will also help the park flora and fauna adjust as climate change forces widespread changes in the ranges of many species. (Individual Correspondence)

The final court order resolving the landfill litigation provides that the continuous seven-year period of non-use related to Private Law 790's reversionary interest does not apply to the period between 1999 (the date of the land exchange) and 2014 (the end of the lawsuit.) (Conservation/Preservation Group Correspondence)

As noted above, Kaiser ceased mining [in] 1983. The mine was inactive, and Kaiser relinquished all mining rights, for the dump. 15 years expired from 1983-1998, which triggers the reversionary clause. The reversionary clause was never before the Court, as it was omitted in our opening brief, and the Court rejected a later inclusion attempt. So, no matter if the reversionary interest does not apply from 1999-2014, IT DOES APPLY FROM 1983-1999. (Conservation/Preservation Group Correspondence)

Response: There are some factual inaccuracies in these comments. The reversionary interest under Private Law 790 (1952) only applies to the Eagle Mountain Townsite area (approx. 465 acres) and to the railroad rights of way that the federal government issued to Kaiser Steel Corporation to facilitate the development of the Eagle Mountain mine. The reversionary interest in the Townsite has not been triggered. The court order that resolved the litigation over the landfill determined that the seven year period of non-use under Private Law 790 did not apply between 1999 and 2014, which generally corresponds to the time period that the land exchange was in effect. In addition, many of the private lands that comprise the Eagle Mountain mine site were held in private ownership prior to the original establishment of Joshua Tree National Monument. The NPS never exercised management control over lands that were patented prior to the Monument's creation in 1936.

The NPS has evaluated a full range of alternatives for lands that that were included in the original national monument in 1936. Alternative D, which was not selected for implementation, proposed to include the Eagle Mountain Townsite area in an expanded park boundary. The Boundary Study noted that these lands would not be available for NPS ownership or direct management unless the reversionary clause was triggered (which it has not been) and a subsequent determination was made by the Department to transfer the Townsite lands from BLM to NPS.

Minerals and Mining

Concern 34: The NPS should correct its estimates of the amount of available rock/aggregate present in the Eagle Mountains.

It is estimated that over 165 million tons of stockpiled rock is located on half of the fee-owned Eagle Mountain property; known as the West End Property which is approximately the western half of the

Eagle Mountain Mine. The Boundary Study on page 129 states that: "It is estimated that there are over 165 million tons of stockpiled rock located in and around the Eagle Mountain Mine." Additionally, it is estimated that there is over 1 billion tons of rock in-place on the West End Property. The rock and aggregate resources stockpiled in the eastern half of the Eagle Mountain Mine have not been estimated but it is clearly millions of tons of rock. U.S. Geological Service has estimated that there may be up to 550 million tons of iron ore at Eagle Mountain.
In addition, the 44 million cubic yards of coarse tailings can also be sold as aggregate for various purposes. Thus, the Boundary Study vastly underestimates the amount of available rock and aggregate resources at the Eagle Mountain Mine. (Business Correspondence)

Response: The NPS has included the information provided by the commenter about quantities of above and in-ground mineral resources available in the Eagle Mountain Mine in the Boundary Study/EA. However, it is noted that this information has not been independently verified.

Concern 35: The NPS analysis does not address the market, market value and potential uses of rock that could be mined. The NPS should clarify that, as proposed, existing commercial activities as currently permitted would not be affected by inclusion in the park.

There are opportunities for large-scale shipments of rock. For example, as a part of the evaluation of a Salton Sea restoration plan, the State of California through one of its consultants, requested a bid for up to 20,000,000 tons of rock from Eagle Mountain. (Attachment 9) Implementation of a restoration plan for the Salton Sea is probable and the implementation of any restoration plan would require millions of tons of rock. (Business Correspondence)

Response: The Boundary Study/EA did not address the market or the market value of the available aggregate because neither was pertinent to the environmental analysis of the alternatives. For clarification, the NPS has included language in the Boundary Study/EA to acknowledge that private parties with a legal interest in the aggregate resources on lands within the study area believe that viable markets for the aggregate exist

Concern 36: The NPS fails to address the impacts on the potential resumption of large-scale mining and whether such mining would impact any decision to include the lands into the park. The Boundary Study/EA dismisses the resumption of large-scale mining and its beneficial effects on the economy through increased jobs and property taxes.

The NPS fails to address the impacts on the potential resumption of large-scale mining and whether such mining would impact any decision to include the lands into the park…KEM holds 460 active mining claims with an approved plan of operations. They continue to be occupied and used in in support of mining operations by the Mining Law. Mining could potentially resume on the federal mining claims particularly since there are substantial mineral resources in the mining claims. (Business Correspondence)

While the resumption of large-scale iron ore mining is currently within the control of Kaiser Eagle Mountain, LLC, it is possible that CIL&D could reacquire Kaiser Eagle Mountain, LLC and the Eagle Mountain Mine if there should ever be a default in the note or other security instruments given to CIL&D as a part of the sale of Kaiser Eagle Mountain, LLC. Furthermore, depending upon the price of iron ore, Kaiser Eagle Mountain, LLC could decide that it would undertake extractive iron ore mining. Iron ore mining could commence in the lands in the two pits not utilized in Eagle Crest's project and could be phased so that mining could take place in and around the central and east pits if the Eagle Crest project should ever be decommissioned. (Business Correspondence)

Resumption of large scale extractive iron ore mining could resume under any number of circumstances, including, for example, the reacquisition of KEM and/or the KEM assets by CIL&D or the market price of iron ore rising to the level that would be sufficient to resume mining at the two open pits and their respective surrounding property that are not used in the ECEC project. Instead, as noted above, the Boundary Study impermissibly dismisses the resumption of large-scale mining and the benefits derived from such mining such as increased jobs, increased property taxes, etc. with no analysis. To categorically fail to the study the impacts of mining as the Boundary Study has done makes the Boundary Study flawed—it is a significant socio-economic and resource impact that must be analyzed. (Business Correspondence)

Response:
The potential resumption of large scale mining is mentioned in several sections of the Boundary Study/EA. The Boundary Study/EA (pages 86 and 129) states "Eagle Mountain Mining and Railroad (EMMR), a Kaiser subsidiary, is planning to increase the sale and shipment of material off-site by 2018 and asserts the possibility that large-scale mining activities could also resume (Kaiser Eagle Mountain, LLC 2013)." As explained below, the Boundary Study assumed that large scale mining was not likely to occur in the foreseeable future. Nevertheless, the NPS has included language in the Boundary Study/EA to acknowledge that large scale mining, if resumed, when combined with socioeconomic benefits from a boundary adjustment, would be beneficial to the local economy by increasing jobs and property taxes.

The Boundary Study/EA (page 86) assumes that the likelihood of the resumption of large scale mining on the KEM unpatented claims is low for several reasons. The future use of the mining pits and the central mine area for the pumped storage hydroelectric project is not compatible with the resumption of large scale mining. The FERC FEIS (page 64) also presumes that future large scale mining is unlikely: "given that the mining equipment once used to extract and process iron ore at the mine has since been removed, the extraction, processing, and shipment of any recoverable mineral resources from the mine is not currently feasible without significant investment to replace the mining equipment." Further, the EMMR Mining Lease does not currently authorize EMMR to conduct any new extractive mining as such rights are reserved to and owned by KEM.

One of the comments on this topic suggested that large scale mining could resume if Eagle Crest defaults on its payments to CIL&D which could then enable CIL&D to regain possession of the property and resume mining. Eagle Crest has made its initial payments to CIL&D and is proceeding with project planning and implementation. Additional payments are due many years in the future. The NPS is not aware of any information indicating that Eagle Crest might default on its payments. NEPA does not require the NPS to address speculative outcomes.

Concern 37: The Boundary Study/EA discussion of mining and minerals is insufficient and missing information particularly because a geologic survey, assessment, and mineral report have not been completed. This information needs to be made available to the public before finalization of the boundary study.

Much of the study area contains vast mineral resources. In fact one of the reasons for the revision of the Monument's boundaries in 1950 was due to the mineral resources contained within the area being removed from the Monument. The Boundary Study's analysis of the mineral resources and mining is inadequate and needs to be revised to be made more complete. (Business Correspondence)

Under the terms of its Mining Lease with Kaiser Eagle Mountain, LLC, EMMR has the right to mine stockpiled rock, iron ore pellets, and the coarse and fine tailings. While the Boundary Study does discuss mining and mining related issues, its discussion is insufficient and is missing important information. For example, the Boundary Study concedes that a geologic survey and assessment has not been completed. (Boundary Study, p. 127.) This critical information needs to be provided and be made available for public review before finalization

of the Boundary Study and the adoption of any alternative other than the no action alternative (Business Correspondence).

We are a mineral rich nation, and many of these minerals are located within the Eagle Mountain Boundary Study area. (Recreational Group Correspondence)

Response: The Boundary Study/EA relied on previous studies and research, consistent with CEQ and NPS policies. Prior mineral reports completed for the study area provided a reliable baseline for minerals present in the study area for purposes of the analysis. However, prior to the implementation of a withdrawal from entry, a mineral potential report, as required by 43 CFR 2310.3-2(b)(3)(iii), will be completed. The BLM will consider the mineral potential report before completing its environmental compliance documentation required for a public land transfer. Further, mineral potential reports typically compile existing research in an area and do not include new geologic surveys. The findings of the mineral potential report would have no effect on valid existing rights or a claimant's ability to prove validity of claims.

Concern 38: The NPS is in error in its statement about mining claim validity examinations and the implication that the cost would be borne solely by the claimholders. The NPS should include the potential cost of the validity examination to the NPS or the Department of the Interior.

The law is that a mining claim is considered valid until determined otherwise. The Boundary Study is deficient in that it does not estimate the costs and time that NPS or the Department of the Interior may incur in undertaking the validity examinations of the mining claims in the Study Area. Nor has the NPS analyzed the costs that may be incurred by the government in the defense of any adverse validity determination that is made. (Business Correspondence)

Response: The NPS was incorrect in its statement that the cost of validity examinations would be borne by the claimholders. Validity examinations are conducted by mineral examiners who are certified by the BLM in accordance with BLM Manual 3895. Because BLM cost-recovery regulations do not authorize the recovery of costs associated with validity examinations on NPS lands, the cost of the validity exams would probably be borne by the National Park Service should lands be transferred for management as part of Joshua Tree National Park. Associated text regarding the validity examination process and its effects to claim holders has been corrected in the Environmental Consequences section of the Boundary Study/EA. Information on the potential costs of the validity examination has been added to the cost of the Alternatives, as well as in the costs analysis in the Feasibility section of the document.

Concern 39: The Eagle Mountain area is rich in minerals, including rare earth minerals, that should remain available for extraction, particularly for "modern green technology and in the interest of the National Defense."

We are a mineral rich nation, and many of these minerals are located within the Eagle Mountain Boundary Study area. (Individual Correspondence)

Much of the study area contains vast mineral resources. In fact one of the reasons for the revision of the Monument's boundaries in 1950 was due to the mineral resources contained within the area being removed from the Monument. The Boundary Study's analysis of the mineral resources and mining is inadequate and needs to be revised to be made more complete. (Business Correspondence)

Response: The Boundary Study/EA adequately discloses the minerals that could be present in the study area. Prior mineral studies completed for the study area provided a reliable baseline for minerals present in the study area. Boundary Study/EA (page 176) states that the existence of rare earth minerals (which have been used for green technology or military equipment) are expected to be extremely limited in the study area. The DRECP LUPA states that rare earth elements are found principally in just one small area near Mountain Pass, which is not within the study area (BLM 2016).

Concern 40: The Boundary Study/EA says that there are other areas available for mining to offset the loss of Eagle Mountain, but this is becoming untrue. Many public lands have been withdrawn from mining over time.

Response: Comment noted. The NPS recognizes that individuals and mining clubs would be adversely affected by the prohibition on new mining; that impact is disclosed in the Boundary Study/ EA.

Land Ownership and Management

Concern 41: The NPS incorrectly states that lands in the study area are owned by the BLM. BLM does not hold title to the land and this should be corrected in the Boundary Study/EA.

> *These lands rightfully belong to the people of the United States of America and title should be held in trust for that purpose. The "NO ACTION" outcome guarantees that these lands and all the wealth they contain remain the property of the people of the United States. You have deceived the public by stating publicly, and in print that these lands are owned by the BLM. This is patently false and willfully misleading. The BLM does not hold title to these lands, and we demand that you retract and correct this for the public record. (Recreational Group Correspondence)*

Response: The study does not state that BLM directly owns the lands; it correctly states that the study area contains federally owned lands managed or administered by the Bureau of Land Management. The Boundary Study/EA (page 9) states that the federally owned land in the study is managed by the Bureau of Land Management (BLM). Table 2-1 states that lands in the Federal Lands Parcel Group "Includes federal lands under BLM management." In some cases the study refers such lands as "BLM lands." In these cases the NPS intends to convey that these are BLM-managed lands (see pages 35, 49, 86, 93, 97, 98, 101, Table 3-1, 152, 155, 156, 158, 170, 171-172, 176, 177, 181, 186, 187, 190, 194-196, 199, 201, and Table 3-1).

Concern 42: The transfer of management from the Bureau of Land Management to the National Park Service violates existing rights under the Mining Law of 1872, Multiple Use Surface Act, the National Minerals and Mining Policy, and the Federal Land Management Policy Act.

> *It is our belief that by the Federal Government confiscating our land that you will be violating our rights under the mining law of 1872 (30 USC 22-54), Multiple Surface use Act (30 USC 612B), National Minerals and Mining Policy (30 USC 621A), Federal Land Management Policy Act. (Multiple Individual Correspondences).*

Response: A proposed withdrawal and federal land transfer is permitted under the Federal Land Management Policy Act and is not prohibited by the other laws cited in the comment.

Concern 43: The NPS should correct the description of ownership and interests in private lands with regards to the Eagle Crest Energy Company, Kaiser Eagle Mountain, LLC, and CIL&D.

KEM [Kaiser Eagle Mountain] owns the Eagle Mountain Mine located in Riverside County, California. KEM's land, mining claims and other assets are within the Boundary Study area (the ""Study Area"") and, in whole or in part, are included and impacted by all the alternatives discussed in Boundary Study, except for Alternative A: Continue Current Management (No Action). KEM, or its predecessor in interest in the Eagle Mountain Mine, Kaiser Steel Corporation (""Kaiser Steel""), has owned or controlled the land and mining claims constituting the mine (including the Eagle Mountain Townsite) since 1944. Until the sale of KEM in June, 2015, KEM was owned by CIL&D, LLC (previously known as Kaiser Ventures LLC). CIL&D, LLC is the reorganized successor to a portion of the assets of the former Kaiser Steel. KEM was sold in 2015 to Eagle Mountain Acquisition LLC. The Boundary Study incorrectly refers to KEM as being owned by Eagle Crest, the FERC license-holder. Boundary Study p. 9 and p. 62. KEM was acquired by Eagle Mountain Acquisition LLC which is not a subsidiary of Eagle Crest although there is substantial indirect common ownership of Eagle Mountain Acquisition LLC and Eagle Crest and there are certain common officers between the two companies. EMMR [Eagle Mountain Mining and Railroad], a wholly-owned subsidiary of CIL&D, LLC, has a Mining Lease and Agreement and various implementing agreements with Kaiser Eagle Mountain, LLC each dated June 29, 2015, (collectively the "Mining Lease") that covers a significant portion of the Eagle Mountain Mine. The Mining Lease is for an initial term of 40 years but the term can be extended in 20 year increments up to a total of 100 years as provided in the Mining Lease. The Mining Lease provides that EMMR may mine the stock piled rock, iron ore pellets, coarse and fine tailings. The Mining Lease does not currently include new extractive mining as such rights are reserved to and owned by Kaiser Eagle Mountain, LLC. The Mining Lease (as well as the first deed of trust) imposes certain conditions and covenants on Kaiser Eagle Mountain, LLC with regard to mining and the mining and mill site claims owned by Kaiser Eagle Mountain. CIL&D, LLC is the reorganized successor to a portion of the assets of the former Kaiser Steel Corporation ("KSC"). CIL&D, directly or indirectly through a wholly-owned subsidiary, owned the Eagle Mountain Mine located in Riverside County, California from approximately 1944 until the sale of Kaiser Eagle Mountain, LLC in June 2015. Kaiser Eagle Mountain, LLC was sold to Eagle Mountain Acquisition LLC. (Business Correspondence)

Response: The NPS has corrected the ownership information.

Concern 44: The California State Lands Commission request that the NPS corrects acreage for the State School Lands.

According to reports, the Iron Chief Gold Mine produced approximately $150,000 in gold, at a time when the price of gold was approximately $19 per ounce. The mine contained a mill and a 50-ton cyanide plant. We believe this mine is the Iron Chief Gold Mine composed of patented mining claims near the center of Section 36, Township 3 South, Range 13 East, San Bernardino Baseline and Meridian. Excluding a small amount of BLM lands, the CSLC obtained title to 335.76 acres within section 36, upon federal survey if 1963 (see enclosure). (State Government Correspondence)

Response: Corrections have been made throughout the Boundary Study/EA.

Concern 45: Southern California Edison (SCE) requests the NPS Eagle Mountain Study team include provisions in the Boundary Study/EA to protect, preserve, and make available land use authorizations for electrical and telecommunications infrastructure. SCE is willing to assist the NPS Eagle Mountain Study team in developing those provisions.

Response: The Selected Alternative proposed boundary adjustment appears to exclude areas with existing SCE electrical and telecommunications infrastructure. The NPS appreciates the assistance offered by SCE and will continue to engage SCE in any implementation planning should a boundary adjustment be implemented. The Selected Alternative also contains language that recognizes the need for utilities to continue operation,

maintenance, and potential upgrades, as necessary, of existing and planned electrical and telecommunications infrastructure.

Cultural Resources

Concern 46: The NPS should include information about the historical significance of the Romero-Estudillo party as it relates to the study area in the cultural resources affected environment, as well as the history surrounding Minerva Hoyt and the conservation efforts to protect California Desert ecosystems in the 1920s and 1930s.

> *The cultural resources section omits any mention of the Romero-Estudillo party that became lost in the desert somewhere north of Desert Center while trying to locate a route of travel from Mission San Gabriel to the Colorado River in 1823. It's possible their route of travel took them into the lower Pinto Basin or along the eastern flank of the Coxcomb Mountains. These may have been the first people of European descent to enter the modern boundaries of Joshua Tree National Park. They abandoned considerable equipment and animals in their wanderings…Astonishingly missing from the cultural section is any mention of the long and persistent effort by Minerva Hamilton Hoyt and other conservation minded people during the late 1920s and throughout the 1930s to establish parks and protected areas within the California Desert. This effort grew out of a project by the State of California to establish a system of state parks. Mrs. Hoyt's tireless efforts to educate the public about the value of desert ecosystems and work for their protection stands as a significant counterbalance to the comment on p.148 that ""many people opposed the idea of an environmental preserve in California's deserts, particularly from mining interests." (Individual Correspondence)*

Response: Comment noted. The NPS acknowledges that there may be aspects of history related to Joshua Tree National Park, the study area and region that were not included in the Boundary Study/EA and the NPS appreciates the additional information. The Cultural Resources Affected Environment section was not intended to give a comprehensive history; instead, the goal was to highlight some important aspects of the area to show its cultural significance.

Concern 47: There is a one minor error in the section on Cultural Resources: the so-called Pinto Culture is one of the earliest cultures to be described in this region and spans a time frame from 8000-4000 years before the present. It is likely a continuation of the original migrations and was present after the more environmentally optimal late Pleistocene, but when there was still regional water within drainages, especially at low elevations.

Response: Statements in the Boundary Study/EA are correct; the text on page 145 has been changed for clarification to read "The descendants of Pleistocene and Archaic people (such as the Pinto Culture), learned to adapt and thrive in harsh environment by making careful use of local plants and living in oases and along water courses."

Wildlife Resources

Concern 48: The Boundary Study/EA Affected Environment discussion regarding desert bighorn sheep distribution is incorrect and misrepresented. The literature cited by NPS does not support a conclusion that bighorn utilize the pits either as habitat or as a migration corridor.

> *The literature cited by NPS does not support a conclusion that bighorn utilize the pits either as habitat or as a migration corridor…The "maps of bighorn locations in the Divine and Douglas (1996) report (Figure 9) do not*

support the conclusion that bighorn sheep use the mining pits to any significant extent. Over a 2-year period, bighorn sheep were recorded in mountainous areas around the Project site, but not in the east pit (Project lower reservoir), and rarely in the central pit (Project upper reservoir). This makes biological sense as there is no food supply for bighorn sheep in the pits and the sheep would be at risk from predators in the pits. Bighorn sheep do use the area between the two pits and the mountains to the north and the south. While it is correct that Bleich et al. found that bighorn sheep avoid areas near roads, they concluded that fire history had the largest influence on distribution and that the best characteristic of sheep habitat is the presence of escape terrain. The report by Creech et al. (2014) does not contain information about the location of bighorn sheep migration corridors in the Study Area. Neither of the two Epps papers cited (2007 and 2010) discuss bighorn sheep migration through the area "where the reservoirs will be located," as stated by the NPS. The research documents habitat preferences which include steep slopes and open terrain so the sheep can see approaching danger and escape. (Business Correspondence)

Based upon the observations of personnel that work at the Eagle Mountain Mine in the past and currently, the bighorn sheep are very seldom seen within mine pits. Most sightings of the bighorn sheep as well as the observation of bighorn sheep scat occur on the far western end of the Eagle Mountain Mine. There are bighorn sheep trails that traverse the western end of the Eagle Mountain Mine. The likely reason that this is the case is because Kaiser Eagle Mountain, LLC, has is the past (and is believed to continue to this day) voluntarily keeps a guzzler filled with water for the benefit of the bighorn sheep. Most observations of the bighorn sheep, their scat and trails are in the area of this guzzler. This is not to say that the bighorn sheep have not been observed in other locations at the Eagle Mountain Mine but the bighorn sheep have predominantly been seen and are at the far west end of the Eagle Mountain property where there is available water. The pits do not contain water or suitable grazing habitat for the big horn sheep. (Business Correspondence)

In addition, based upon the observation of individuals that worked at the Eagle Mountain Mine during the height of mining and mining related activities, the bighorn sheep were observed in large numbers at that time. The bighorn sheep did not appear to be stressed by all the mining and related activities at the Eagle Mountain Mine. It is believed that the bighorn sheep flourished at that time because more water sources were available as a result of the large-scale mining. It is also important to understand that mining activity has continued after 1982 when large-scale extractive iron ore mining was suspended. While the most recent mining activities are reduced in scope, there has been no evidence of any impact to the bighorn sheep population or their travel patterns due to the current mining activities. (Business Correspondence)

Response: The Boundary Study/EA did not specifically state that the desert bighorn sheep utilize the pits. The Boundary Study/EA (page 184), stated "Connectivity based on the least resistance models of Epps et al. (2007) and telemetry data (Divine and Douglas 1996; Divine 1998) show that the primary route of movement between these areas is located through the areas where the reservoirs would be located for the pumped storage project." To eliminate confusion, this sentence has been deleted from the Boundary Study/EA. However, other conclusions in Boundary Study/EA are true and unrefuted and are even supported by the commenters. For example desert bighorn sheep do indeed traverse through the Eagle Mountain Mine area, in between the pits. Maps in both Creech 2014 and Epps 2007 indicate the importance of the connection between the Eagle Mountain and Coxcomb Mountain herds through this vicinity.

Concern 49: The NPS analysis of potential impacts of the Eagle Mountain Pumped Storage Project on desert bighorn sheep is incorrect and overstated, scientific papers are incorrectly cited, and the conclusions in the Boundary Study/EA regarding sheep response to human activity are exaggerated.

The "environmental analysis in the Boundary Study with regard to the bighorn sheep is unsupported. The resumption of large-scale mining and the construction and operation of the Eagle Crest project would have little actual adverse impact, if any, on the bighorn sheep population." "The Boundary Study needs to be revised

to have a more complete and accurate discussion on the bighorn sheep, more accurately state what the research demonstrates about bighorn sheep and unsupported statements about alleged impacts to sheep should be deleted." Eagle Crest dispute is the claim that the Project reservoirs "would be located within the Bighorn Sheep migration corridor between the Eagle and Coxcomb mountains "and that "[a]ny construction, ongoing energy operation or mining through the study area has the potential to create serious impacts to this iconic species. (Business Correspondence)

The 1996 Divine and Douglas study of the bighorn sheep at Eagle Mountain tracked the sheep using telemetry. Such study conclude that the operation of the landfill at its fully permitted capacity of 20,000 tons per day would not hinder the movement of the bighorn sheep or impact any lambing that may occur at the Eagle Mountain Mine. This level of disturbance is greater by many magnitudes than what is anticipated for the Project. Once the Project is constructed, surface activity will be minimal, with all energy generation and pumping activities occurring deep underground, with changes in reservoir levels occurring quietly over periods of hours, virtually undetectable to wildlife. If a project like the landfill would not interfere with sheep migration, it is a misuse of this scientific literature to say that the Eagle Crest Project will have such an effect. Bleich detected a ""slight effect"" of human disturbance on bighorn sheep distribution. Bleich also concluded that sheep will habituate to perceived sources of disturbance, when in predictable locations and consistent and that mining can alter terrain features to promote occupancy by bighorn sheep. Bleich drew no conclusions about bighorn sheep in the Study Area, as stated in the EA, because the research was conducted in San Bernardino County, not in the Study Area (161). While it is correct that Bleich et al. found that bighorn sheep avoid areas near roads, they concluded that fire history had the largest influence on distribution and that the best characteristic of sheep habitat is the presence of escape terrain. (Business Correspondence)

In the Project EIS prepared by FERC (2012), FERC addressed impacts on bighorn sheep and concluded that the ""effects of project construction activities would not create a migratory barrier,"" and effects of Project construction would be ""minor and temporary."" The literature demonstrates that sheep adapt easily to consistent and minimal disturbances, and that even loud explosive operations at mining sites would not be a deterrent for sheep. New above-ground structures built for the operation of the Project would be minimal with the majority of Project infrastructure located deep underground. The only difference between current conditions and conditions during Project operation would be that the mining pits will be alternatingly filled with water and fenced to keep animals out. Bighorn sheep would still be able to move between the two fenced reservoirs. There would be very few employees on site during Project operation and noise would be minimal. (Business Correspondence)

Response: The NPS disagrees that references to scientific papers are incorrectly cited. Scientific research was appropriately used to support NPS' assertion that disturbances and cumulative stress to bighorn sheep could have negative effects on individuals or sheep populations (Wiedmann and Bleich 2014). Telemetry data also showed the Eagle Mountain study area as an active movement corridor between the Eagle and Coxcomb Mountains (Epps 2007).

Disruption of habitat connectivity can be a serious issue for bighorn sheep (Wiedmann and Bleich 2014). Research shows that bighorn sheep may be able to acclimate and/or avoid disturbances if they have alternate sites to occupy, but this is not always the case (Longshore et al. 2013). Sometimes they avoid roads or other barriers; other times bighorn sheep are unaffected. The Boundary Study/EA discloses that bighorn have adapted to limited noise and activity at the Eagle Mountain mine (the Boundary Study/EA has been corrected with the current activity level). Inclusion of study area lands into the boundaries of Joshua Tree National Park would benefit bighorn sheep and help preserve landscape scale connectivity.

As noted in the comment, the FEIS for the Eagle Mountain Pumped Storage Hydroelectric Project concluded that "effects of project construction activities would not create a migratory barrier" and the effects of construction

would be minor and temporary" because the mountains would be untouched and equipment would be underground. The Boundary Study/EA looks at the entire study area, not just the footprint of the pumped storage project. Under current BLM management, other industrial developments could be allowed on the unallocated BLM-managed land (referred to now as “general public lands” in the DRECP LUPA) resulting in additional adverse effects to bighorn sheep. Cumulative disturbances to bighorn sheep have the potential for long term impacts. The Boundary Study/EA has been corrected to include the above information.

Concern 50: Bighorn sheep counts referenced in the Boundary Study/EA are misleading.

> *The EA states that a Project 2010 wildlife survey identified 51 bighorn sheep in six locations. EA at 34. However, this wildlife survey covered a much larger area than the NPS Study Area. Significantly, only 3 of the 51 bighorn sheep were noted as in the Eagle Mountains, the balance of the sheep surveyed were found in other mountain ranges miles from the Project location. (Business Correspondence)*

Response: The Boundary Study/EA has been revised to disclose the corrected information about the 2010 wildlife survey.

Concern 51: The Affected Environment chapter is missing information about the potential presence of certain wildlife species, including an important stop for migratory bird species, potential habitat for the elf owl, and lacks a discussion of the area’s importance to invertebrates.

> *The section on affected wildlife is not complete and omits at least one California state endangered species, the elf owl (Micrathene whitneyi) that has been recently documented from the park and which could reasonably be expected to occur within the project area. Based well-documented records from nearby Desert Center and Chiriaco Summit, the Eagle Mountain town site probably serves as a significant migratory stop for many bird species, including some federal and state listed species, that move through the eastern region of Joshua Tree National Park. Adequate surveys and monitoring would likely turn up some significant records indicating a richer avifauna for the area than what is currently known…The Wildlife section beginning on p. 140 has no discussion of invertebrates that occur or are likely to be affected by the Boundary Study or by activity of the proposed pump storage project. Limited data on Lepidoptera in the area shows that the eastern region of Joshua Tree has populations of insects that differ in significant ways from those found in the higher, areas of the Mojave Desert section of the park to the west of the Eagle and Coxcomb Mountains. There are likely numerous species occurring in the area whose range is highly limited in Joshua Tree National Park. The lack of discussion of invertebrate populations and how the alternatives presented here will affect them is a significant weakness of the EA. (Individual Correspondence)*

Response: The NPS appreciates the additional information on wildlife species. Invertebrate populations are briefly mentioned in the Boundary Study/EA on page 140. A complete list of invertebrate species is not necessary because that information is inconsequential to the environmental analysis regarding a boundary expansion. Further, the Council of Environmental Regulations (CEQ), Sec. 1500.4 state that environmental documents should discuss only briefly issues other than the most important ones. Impacts to invertebrates and birds are not critical to the decision-making process of whether or not to move the park boundary. Invertebrates and birds are grouped with wildlife, which would generally benefit from a boundary expansion. If the study area is included in the NPS boundary, future site-specific planning will consider effects to species potentially affected by specific projects. The elf owl was not considered due to the lack of known evidence of presence in the study area. However, the NPS agrees that the owl could be present exist if ideal habitat conditions existed. Additional planning would occur before action is taken that could affect protected species. Potential effects to the elf owl are similar to other species described in the Boundary Study/EA and therefore a detailed analysis was not needed.

Water Resources

Concern 52: The NPS claim that the issue of groundwater recharge is complicated and controversial, and that agencies do not agree on the extent of recharge to groundwater aquifers (Boundary Study/EA at 135) is unsupported and contradicted by evidence.

> *"The science of hydrogeology in California is well developed, and groundwater recharge is reasonably well understood. For the Chuckwalla Basin, in particular, well data exists that extends across the Basin and over a period of decades, including a period of heavy water use for irrigated agriculture in the 1970s and early 1980s during which Basin water table levels declined. After much of the agricultural use ceased in the mid-1980s, groundwater levels subsequently recovered, providing a good basis for estimating long-term average recharge conditions within the Chuckwalla Basin. (25) The EA should also address the available data that shows groundwater pumping effects are localized . . . The Chuckwalla Basin also has been extensively studied in recent years by some of the top hydrogeologists in the state of California as they conducted investigations of proposed solar projects located across the Basin, and for the Project. Each of those investigations was subject to consultation and review with water experts in state and federal agencies, and the Project consultation included water experts and the leading hydrogeologist with [the Metropolitan Water District of Southern California] (Business Correspondence)*

Response: The issue of groundwater recharge is debated among federal and state agencies and the statements in the Boundary Study/EA reflect this fact. . However, the referenced text on page 135 has been removed from the Boundary Study/EA in response to the public comment. The Boundary Study/EA does not dispute the State Water Resources Control Board's (SWRCB) final findings on groundwater recharge (Boundary Study/EA, page 181). Details on groundwater pumping data is not included in the Boundary Study/EA because the analysis is intended to be broad, since a boundary adjustment is a policy change with no immediate physical impact on resources. The Boundary Study/EA (page 181) refers readers to the Eagle Mountain Pumped Storage Hydroelectric Project FEIS and final FERC license requirements (2014) for more information on the effects of the pumped storage project on groundwater and associated mitigation. The Boundary Study/EA ultimately restates the SWRCB finding that the "Chuckwalla aquifer was not at risk" (Boundary Study/EA, page 181).

Concern 53: The NPS overstates the cumulative effect on water supply as a result of the Eagle Mountain Pumped Storage Hydroelectric Project and future renewable energy projects.

> *"There could be a negative effect on groundwater supply with the No Action alternative. If BLM were to continue as the land management agency, renewable energy projects that require water could be approved for the study area under current land management classifications. These projects could require water from the Chuckwalla Valley aquifer." EA at 180. This statement is a hypothetical that is unsupported. The EA acknowledges that the DRECP will limit the Study Area for renewable energy development through NLCS and ACEC designations and we have noted that the unallocated DRECP lands have no access that would permit their use for renewable energy. Furthermore, solar power plants consume very little water (other than panel washing) since BLM requires the use of air- cooling and not water-cooling in the desert. Wind power projects do not require a water supply…"FERC and the California State Water Resources Control Board both analyzed the impact of the Project and considered cumulative impacts and the only potential cumulative effect identified was a contribution to a temporary overdraft of the aquifer, with recovery over a period of about 17 years following Project decommissioning. The predicted worst-case overdraft conditions were far less than occurred during the 1970s-1980s agricultural expansion which resulted in no adverse effects to surrounding basins. We also note that this cumulative assessment (completed in about 2012) is very conservative because it included*

water use for the landfill project, over ten solar projects and nearly 2,000 acres of irrigated agricultural use. The landfill project is cancelled, only three solar projects have been developed, and irrigated agriculture has declined in the Chuckwalla Valley, so that even these potential cumulative effects have significantly decreased." (Business Correspondence)

Response: The NPS disagrees that the cumulative effect determination is overstated. The Boundary Study/EA does not dispute or misrepresent the impact of potential future energy projects on groundwater supply. Although the Boundary Study/EA did not explicitly disclose the water needs of solar versus wind projects, it did generally state that the extent of impact would depend on the water needs of a particular project. The Boundary Study/EA did not solely assign cumulative impacts to the Eagle Mountain Pumped Storage Hydroelectric Project, which according to the FEIS for that project, would be the largest water user in the Chuckwalla Valley. The Boundary Study/EA stated that the pumped storage hydroelectric project, when combined with other renewable energy projects (either in on BLM unallocated land or within the nearby Riverside East Solar Energy Zone (SEZ)) may affect groundwater (Boundary Study/EA, page 180). Even if the water needs of other potential nearby renewable energy projects are small, there could still be some effect when combined with a temporary overdraft of the aquifer from the pumped storage hydroelectric project. There is a possibility that renewable energy projects in the desert may have incremental water needs and contribute to cumulative groundwater impacts. For example, the Final Environmental Impact Statement for the Desert Sunlight Solar Farm (BLM 2011) authorized up to 1,400 acre feet (AF) of groundwater during the 26-month construction period, and 6 AF (total) at 0.2 acre-feet per year (AFY) (annual average) for the 30-year operation and maintenance period. Subsequent to that decision, the project required more water than analyzed in the FEIS. Use of an additional 100 AF of groundwater was approved for a total solar plant site construction allowance of up to 1,500 AF, which was still insufficient. The BLM completed additional environmental assessment for a water variance request for a 50 AF increase in groundwater use to: (1) provide a sufficient buffer in the event of unanticipated construction water needs; and (2) support site remediation required to respond to damage to onsite water retention and other facilities caused by future storm events (BLM 2014).

The statement that lands proposed as general public lands in the DRECP would be open to renewable energy development is neither hypothetical nor unsupported. The area had one pending permit (currently inactive) for a wind farm and there is the potential that others could be proposed if the land remained under BLM management, particularly considering the mandate for BLM to prioritize renewable energy production (Secretarial Order No. 3285). Even if a renewable energy project on BLM general public lands became infeasible due to access, projects within the SEZ (which is in the same aquifer), could still occur. The Boundary Study/EA does state that the DRECP ACEC designation would limit development on the unallocated lands (renamed the "general public lands" in the BLM ROD). It could restrict access as well.

Concern 54: The NPS has misquoted the FERC Project FEIS regarding the source of water for the Project.

"The water supply for the Project is from three private wells drawing from the Chuckwalla Aquifer. Figure 1. The Project FEIS only includes a discussion of the use of water from the Colorado River Aqueduct in the ""Alternatives Considered But Eliminated From Further Analysis"" (FERC FEIS, page 40).(26) In sum, the Colorado River Aqueduct as a source of Project water was considered, but rejected for practical and environmental reasons including the fact that MWD would not allow this use." The "Project would be the largest single water user in the Chuckwalla Valley, its annual make-up water use would be about 25-30o/o of total water use in the Valley. To put that into context, annual Project make-up water is estimated to be 1,800 acre-feet, roughly equivalent to water consumed by two golf courses in the nearby Coachella Valley, or about 300 acres of citrus trees on the nearby Palo Verde Mesa." (Business Correspondence)

Response: Comment noted. This information has been corrected in the Boundary Study/EA.

Concern 55: The NPS statement about acid mine drainage (Boundary Study/EA, page 181) leaves this impression that the Federal Energy Regulatory Commission would allow this to occur and does not acknowledge that the FERC license, as opposed to the FEIS, includes mandatory requirements related to acid-mine drainage (Articles 402 and 405).

> *The EA states, "Use of the Eagle Mountain Mine for the Eagle Mountain Pumped Storage Hydroelectric Project has the potential to have adverse effects associated with acid mine drainage, resulting in impacts to water quality, particularly if the reservoirs are not lined. The potential for acid mine drainage at the Pumped Storage Hydroelectric Project has not yet been determined and lining of the reservoirs is not a requirement of the FERC license. (EA at 181)." Articles 401, 402 and 405. FERC has required very careful analysis of the issue of acid mine drainage in several license provisions [Articles 401, 402, and 405]. (Business Correspondence)*

Response: The NPS has included additional language in the Boundary Study/EA to reflect the 2014 FERC license requirements. The FERC license, Section B, Groundwater Quality and Seepage Management (#75-80) provides conditions to mitigate impacts to groundwater. It states "Article 405 of the license requires Eagle Crest to use reservoir liners to control seepage and for Eagle Crest to conduct aquifer testing" and 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." This seepage management plan must be submitted to FERC at least six months prior to initial reservoir fill. 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 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.

Visitor Opportunities

Concern 56: The NPS fails to discuss the impacts from additional visitors on the existing or expanded Joshua Tree National Park.

> *Transferring the land will result in more development, more people, and more infrastructures being built to accommodate more visitors. As it is, the Park itself has a significant amount of visitors each year who often do NOT take care of the environment. As a local resident, I often hear on the radio and read in the newspaper (as well as see the damage myself) about the vandalism, trash, and overall disturbance of the flora and fauna. I believe there is a better way to protect the environment yet allow passage of people who truly love and care for this beautiful desert area (Individual Correspondence).*
>
> *The Boundary Study also fails to adequately discuss the negative impacts that are likely to arrive from an expansion of JTNP. It must be remembered that access to most of the lands covered by Alternative C is currently restricted access. See, e.g., Boundary Study pp. 61, 81, 75-76 and 150. In the Boundary Study the NPS is proposing to open the door to additional visitors but fails to discuss the impacts of these additional visitors on the expanded JTNP or on the existing JTNP. The Boundary Study environmental analysis fails to analyze and discuss traffic, air emission, trash, sewage disposal impacts, and the impacts on the wilderness experience from increased visitation to an expanded JTNP. (Business Correspondence)*
>
> *The study contradicts itself. At one point it talks about protection of the wild animals in the area, their corridors, etc. Then at another point it talks about opening it to more recreational opportunities to tourists,*

new campgrounds, etc. More people mean less protection. The Park Service cannot have it both ways. (Individual Correspondence)

Response: Balancing resource protection with visitor use is an inherent aspect of the NPS mission which states "The National Park Service preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations." The protection of park resources and values (such as natural/cultural resources, wilderness, soundscape, viewshed, etc.) is always a primary consideration with regard to allowable visitor use opportunities and access.

The action alternatives propose only different sizes for a boundary expansion, and do not specify exactly how visitors use would be expanded, how visitors would access the site, or other activities and amenities. If the study area is included in an expanded park boundary, additional planning would occur to decide on the best uses for the area that are compatible with protection of park resources. Additional environmental compliance would be completed as well and would consider impacts such as traffic, sewage treatment, water, etc.

Concern 57: Mining clubs do not impact wildlife or resources and therefore this activity should be allowed to continue. NPS management will prohibit long-standing traditional uses such as use mining/camping by mining clubs. These uses will be eliminated for future generations.

The NPS will slowly close down and take away any rights that they say will exist in the same manner they did in the East Mojave. They said they were going to allow small scale mining to continue. They actually spent money on geologist to prove mineral content was too low for a prudent person to make a living mining their claims. Closed roads to limit access to other claims and were reopened after the claims lapsed. Very few if any of the over 400 claims still in existence and none of the small placer claims (Individual Correspondence).

Miners are not the problem they are mostly the solution. We are always cleaning up our claim areas and maintaining the lands for future us. Sure there are people who miss us the land but if you just let the clubs that us the lands like the off road clubs, the equestrian clubs, mountain bike clubs, mining clubs, and hiking clubs etc. the burdens of the BLM would be extinguished. All recreational clubs would love to have the privilege to maintain sections in the desert or wherever they hold events. Simply letting club and recreational outfitters have the opportunity to maintain sections greatly reduce the burden of maintenance for BLM offices (Individual Correspondence)

Your preferred Alt C requires us claim owners to use a Validation system that does not take into account Small Scale Miners. I understand the need for it in large scale commercial mining where Notices of Intent and Plans of Operations are required under BLM regulations. But Small Scale Miners' only validation requirement is that we self-validate the first flake or nugget of gold found on the claim, nothing more. For the National Park to impose a very expensive validation process on claims that produce very little placer gold, in the eyes of commercial mining, will basically shut us down. We cannot afford the validation process that has been discussed at the last Public Meeting in Joshua Tree. To expect Small Scale Miners, where we can only use hands tools to dig with by definition of Small Scale Miner, to come up with $100,000 or more for the validation when we are lucky to pull an ounce a year, many times less, is just not realistic. We prospect and mine because we enjoy mining, the thrill of the hunt, and the remote, however slight, chance that we might hit it big. We call it Gold Fever. (Recreational Group Correspondence)

Response: The Boundary Study/EA does not state that existing recreation, such as use by mining clubs, created the need for the boundary expansion, nor does it state that casual use mining affected wildlife or other park resources. The NPS has concerns about the cumulative and synergistic effect of changes in land use to the region as a result of energy development, urbanization, and the as well as the potential effects of climate change on

park biodiversity. Landscape scale conservation efforts such as protection of contiguous habitat can help mitigate these effects. Land use authorities that allow for the smaller scale mining also allow for more industrial uses of the land. The prohibitions on new mining claims and validation process for owners of unpatented mining claims are requirements of the Mining in the Parks Act, and not a requirement proposed for any specific user group; the same regulations apply to any holder of pre-existing claims.

The Mining in the Parks Act requires unpatented mining claims to undergo a validity determination before mining activities can occur under an NPS approved plan of operations. The Boundary Study/EA (page 178) stated that "This process might deter, or be too onerous or financially infeasible, for miners." The Boundary Study/EA was incorrect in stating that claimholders would be required to pay for the validity exam. The cost is borne by the National Park Service and could take a number of years. Unpatented claim holders could submit an interim plan of operations for park approval to continue mining until such time that a validity exam could be undertaken.

It is true that the action alternatives would result in a prohibition on some existing uses; the Boundary Study/EA (page 193) disclosed those adverse impacts. The extent of allowable recreational opportunities would be determined in future NPS implementation planning. The NPS is committed to working with the public to plan for future management of the area in a way that both protects resources and meets the visitors' needs to the greatest extent possible.

Concern 58: Many commenters oppose the loss of recreational opportunities that currently permitted on BLM-managed land. They are concerned about a lack access to the area, particularly for those who cannot access the area by foot, payment of entrance fees, and the inability to carry on long-standing family traditions such as mining and camping.

> *The action alternatives would create adverse impacts to disabled by restricting off road access and financially disadvantaged by charging entrance fees where there are none now. (Individual Correspondence).*
>
> *The more land transferred to the Park, the less is actually available to the public. I am a disabled senior citizen, and the loss of public access has already affected me. I cannot walk unassisted for long distances, which makes it impossible for me to do any more than park on the highway and look south. The elected BLM officials who want to close off the area to the public have never ever personally explored the area, but want to take it away from us anyway (Individual Correspondence)*
>
> *Yes I have great concern for administrative transfer of BLM Land to the National Park Service because public lands continue to shrink and access to them are diminishing. Just the case where the military took over some OHV/BLM acreage to expand the 29 Palms marine base. These lands are shrinking and are getting smaller. I would like to note The Mojave National Preserve is another large 1.6 million acres of preservation. There is a lot more restrictions when it comes to the National Park Land that BLM administered lands also. Restrictions like mineral access, off-highway excess and camping which is very important to the public to have open for recreation and education for our future use. (Recreational Group Correspondence)*
>
> *They will not allow camping, campfires and dogs. This is a remote area that has been used recreationally that way for the last 100 years. Please do not take away this land from public use. (Individual Correspondence)*

Response: Incorporating lands into the Joshua Tree National Park would prohibit certain existing uses, as noted in the Boundary Study/EA (pages 192-193). These restrictions stem from law and NPS *Management Policies*

2006. Future implementation planning would determine the nature and location of appropriate recreational activities and the public will be invited to participate in that planning process.

However, the park superintendent does have discretion over allowance of certain activities, such as camping, and where to permit off-highway vehicles (OHV). OHVs would be allowed on street legal roads. On-leash pets would be permitted in designated areas. Unpatented mining claims would subject to a validity determination, and mining would cease if the claims were found to be not valid. However, claimants could receive temporary approval from the NPS to continue developing the minerals on their claims during the validity examination, a process that could take several years to complete.

Joshua Tree National Park does charge entrance fees and the Eagle Mountain area could be subject to those fees. However, most visitors currently access the area via Black Eagle Mine Road, which is accessed in Joshua Tree National Park and already pay an entrance fee. Entrance fees are $20 entrance fee per vehicle for a 7-day permit or $80 for an annual pass (or $10 pass for seniors; passes are free for military and disabled U.S. residents).

Dark Night Skies

Concern 59: The NPS should evaluate the impact that industrial or large scale recreational activity would have on night skies.

Response: The Boundary Study/EA does evaluate this issue. On page 196, the Boundary Study/EA states that renewable energy projects in the Riverside East Solar Energy Zone or DRECP LUPA Development Focus Area could contribute cumulative adverse effects to the dark night sky due to the addition of night lighting, or reduction of visibility. The FERC license for the Eagle Crest Energy project requires a lighting Plan to protect wilderness values, existing ambient light conditions and to meet International Dark Skies guidelines. The Boundary Study/EA also states that the preservation of additional land (with any of the action alternatives), would restrict new development in the park, resulting in benefits to scenic viewshed and the night sky. Any new park facility would be constructed with dark sky compliant lighting.

NEPA Process

Concern 60: The Boundary Study/EA does not explain that there was no access to much of the Study Area and, as a result, much of the Boundary Study/EA's discussion on environmental consequences is based upon the review of prior available literature and documents or is based upon the reasoned speculation of the NPS. The inability to provide on-the-ground information makes the Boundary Study/EA and its discussion of the environmental consequences deficient.

Response: The NPS was able to access federal lands from Joshua Tree National Park. The private lands, identified as potentially feasible in the Boundary Study/EA, were inaccessible but some areas could be viewed from publicly accessible roads. Although the Boundary Study/EA does not specifically state that no on-site surveys were completed for the boundary study, it does state that the "Analysis of the environmental consequences is based on literature reviews, information provided by experts in the NPS, as well as outside organizations, and the professional judgement of the study team members." This is acceptable according to National Environmental Policy Act (NEPA) regulations. Council on Environmental Quality regulations and the National Park Service Director's Order 12 Handbook state that "Many different types of material may be incorporated by reference, including written material of all kinds, conversations, taped public meetings or workshops, etc. Specific examples of materials that might be incorporated by reference into a NEPA document include other NEPA documents, species lists relevant to the project area, scientific studies, monitoring data, and environmental reviews prepared by state and local governments."

For material to be incorporated by reference, the analysis and assumptions used in the incorporated document must be appropriate for the analysis at hand (46.135(a)). In addition, the incorporated material must be "reasonably available for inspection by potentially interested persons within the time allowed for comment" on the NEPA document (1502.21). Incorporation of previously completed studies was appropriate for this boundary study, especially considering it is a broad policy-level proposal. If lands are included in the boundary, additional site-specific planning and research would occur prior to any changes on the ground.

Concern 61: The conclusions are flawed because they are based on petitions signed by people who don't live in the area. People who live here should have more of a say. There should be balanced input.

Response: Study findings and conclusions are a result of NPS analysis which is based on the best available science and information. The Council of Environmental Quality regulations require agencies to involve the public in decision-making. One important factor for civic engagement is to include as much of the interested public as possible. The majority of individual responses for scoping and the public review of the Boundary Study/EA were primarily from San Bernardino and Riverside county respondents. Further, the NPS weighs all public comments equally during the decision-making process.

Concern 62: Desert Center meeting was not well publicized.

Response: Comment noted. The NPS followed up with additional information for Desert Center residents. The meeting information was also available on the project website.

Concern 63: Comment analysis should be completed by an unbiased non-NPS entity.

Response: Thank you for your comment. The National Environmental Policy Act of 1970 requires that federal agencies conduct an unbiased analysis of direct, indirect, and cumulative environmental impacts and National Park Service employees maintain high standards of integrity during the decision-making process. NPS staff was objective in analyzing all public comments on the boundary study.

References

Bureau of Land Management
2016 *Desert Renewable Energy Conservation Plan Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan*. BLM/CA/PL-2016/03+1793+8321, September 2016.

2014 *Desert Sunlight Solar Farm Variance Request Finding of No Significant Impact – Decision Record, Environmental Assessment.* DOI-BLM-EA-06000-15-08, Palm Springs South Coast Field Office, December 2014

Creech, T.G., C.W. Epps, R. Monello, and J.D. Wehausen
2014 "Using Network Theory to Prioritize Management in a Desert Bighorn Sheep Metapopulation". *Landscape Ecology*: 29:605-619.

Dilsaver, Lary M.
2015 *Joshua Tree National Park: A History of Preserving the Desert. Administrative History.* Prepared for the National Park Service. Joshua Tree National Park. Twentynine Palms, California.

Divine, D. D., Ebert, D. W., and Douglas, C. L.
1996 The effect of scale on defining topographically suitable desert bighorn sheep habitat: Desert Bighorn Council Transactions, v. 40, p. 13-18.

Divine, D.d.
1998 *Habitat patch dynamics of desert bighorn sheep Ovis canadensis nelsoni in the eastern Mojave Desert.* Ph.D. Thesis, University of Nevada-Las Vegas

[FERC] Federal Energy Regulatory Commission
2012 *Final Environmental Impact Statement for Hydropower License–Eagle Mountain Pumped Storage Hydroelectric Project—FERC Project No. 13123-002, California, FERC/FEIS-F-0238*. Washington, D.C.

Edwards, T., Schwalbe, C. R., Swann, D. E., & Goldberg, C. S.
2004 "Implications of anthropogenic landscape change on inter-population movements of the desert tortoise (Gopherus agassizii)." *Conservation Genetics*, 5(4), 485-499.

Epps, Clinton W., John D. Wehausen, Vernon C. Bleich, Steven G. Torres, and Justin S. Brashares
2007 "Optimizing dispersal and corridor models using landscape genetics." *Journal of Applied Ecology*. 44.4 (2007): 714-724

Fischer, J. and Lindenmayer, D. B.
2007 Landscape modification and habitat fragmentation: a synthesis. *Global Ecology and Biogeography.*16: 265–280. doi:10.1111/j.1466-8238.2007.00287.x

Nussear, K. E., Todd C. Esque, Richard D. Inman, Leila Gass, Kathryn A. Thomas, Cynthia S. A. Wallace, Joan B. Blainey, David M. Miller, and Robert H. Webb.
2009 "Modeling habitat of the desert tortoise (Gopherus agassizii) in the Mojave and parts of the Sonoran deserts of California, Nevada, Utah, and Arizona." *US Geological Survey Open-file Report 1102*.

Kaiser Eagle Mountain, LLC
2013 *Interim Management Plan, Kaiser Eagle Mountain Mine (CA Mine ID #91-33-0600).* Prepared by Sespe Consulting, Inc. Ventura, California.

Alice E. Karl, Ph.D.
2016 *Eagle Mountain Pumped Storage Project, 2016 Desert Tortoise Survey*. Davis, CA. August 2016

Longshore, K., C. Lowery, and D. B. Thompson
2013. "Detecting short-term responses to weekend recreation activity: desert bighorn sheep avoidance of hiking trails." *Wildlife Society Bulletin,* 37:698–706.

[NPS] United States Department of the Interior, National Park Service
1995 *Joshua Tree National Park General Management Plan, Development Concept Plans and Environmental Impact Statement.* Denver, CO: National Park Service, Denver Service Center.

Riverside County and [BLM] Bureau of Land Management
1996 *Draft Environmental Impact Statement/Environmental Impact Report for the Eagle Mountain Landfill and Recycling Project.* Prepared by CH2MHILL. State Clearinghouse No. 95052023

1997 *Final Environmental Impact Statement/Environmental Impact Report for the Eagle Mountain Landfill and Recycling Project.* Prepared by CH2MHILL. State Clearinghouse No. 95052023

Sonoran Institute
2015 *The California Desert Conservation and Recreation Act of 2015: Impacts on Mining and the Regional Economy.* Available on the Internet at: https://sonoraninstitute.org/resource/california-mining-report-10-27-15/

Wiedmann, B. P. and Bleich, V. C.
2014 Demographic responses of bighorn sheep to recreational activities: A trial of a trail. *Wildl. Soc. Bull.*, 38: 773–782. doi:10.1002/wsb.463

[USFWS] United States Fish and Wildlife Service
2011b "Biological Opinion on the Desert Sunlight Solar Farm Project." Riverside County, California." Carlsbad Fish and Wildlife Office. Carlsbad, California.

REFERENCES

Anicic, John Charles, Jr.
2006 *Kaiser Steel Fontana*. Arcadia Publishing: Charleston, South Carolina; Chicago, Illinois; Portsmouth, New Hampshire; San Francisco, California.

ASCE (American Society of Civil Engineers)
2015 *Colorado River Aqueduct web page*. Available at: http://www.asce.org/project/colorado-river-aqueduct/, accessed April 21, 2015. American Society of Civil Engineers.

Arroyo, M., Marticorena, C., Matthei, O. & Cavieres, L.
2000 "Plant Invasions in Chile: Present Patterns and Future Predictions." In H. A. Mooney & R. J. Hobbs (Eds.), *Invasive Species in a Changing World*. (pp. 385-421). Washington, DC: Island Press.

ASM Affiliates
2011a *Final Historic Properties Management Plan California Eagle Mountain Pumped Storage Project FERC Project Number 13123-002*. Prepared for Eagle Crest Energy Company. Carlsbad, California.

2011b *Addendum to a class III field inventory for the proposed Eagle Mountain Pumped Storage Project, Riverside County, California*. Prepared for Eagle Crest Energy Company, Palm Desert, CA. Prepared by ASM Affiliates, Inc., Carlsbad, CA.

2009a *A Class I cultural resources investigation for the proposed Eagle Mountain Pumped Storage Project, Riverside County, California*. Prepared for Eagle Crest Energy Company, Palm Desert, CA. Prepared by ASM Affiliates, Inc., Carlsbad, CA.

2009b *A Class III field inventory for the proposed Eagle Mountain Pumped Storage Project, Riverside County, California*. Prepared for Eagle Crest Energy Company, Palm Desert, CA. Prepared by ASM Affiliates, Inc., Carlsbad, CA.

Barrows, C.
2009 *Niche modeling and implications of climate change on desert tortoises and other selected reptiles within Joshua Tree National Park*. (Unpublished report). University of California Riverside, Riverside, California.

Barrows, C., & Murphy-Mariscal, M. L.
2012 "Modeling impacts of climate change on Joshua trees at their southern boundary: How scale impacts predictions." *Biological Conservation*, 152, 29-36.

Bischoff, M.
2009 *The Desert Training Center/California-Arizona Maneuver Area, 1942-1944, Volume 1: Historical and Archaeological Contexts for the California Desert, Technical Series 75*. Prepared under contract with the U.S. Army Corps of Engineers. Los Angeles District. Los Angeles, California.

Bischoff, M., R. Allen, and R. S. Baxter.
2012 *Documentation for Multiple Property National Register Nomination: Desert Training Center, California-Arizona Maneuver Area*. Prepared by Environmental Science Associates, Sacramento, for the Bureau of Land Management and the California Energy Commission.

Bleich, V.C. J.H. Davis, J.P. Marshal, S.G. Torres, and B.J. Gonzales.
2009 Mining activity and habitat use by mountain sheep (Ovis canadensis). European Journal of Wildlife Research 55:183-193

Boarman, William I.
2003 "Managing a subsidized predator population: reducing common raven predation on desert tortoises." *Environmental Management* 32.2 (2003): 205-217.

Boarman, W. I., et al.
2006 "Ecology of a population of subsidized predators: Common ravens in the central Mojave Desert, California." Journal of Arid Environments 67 (2006): 248-261

Boarman, William I. and Sazaki, Marc
2006 "A highway's road-effect zone for desert tortoises (Gopherus agassizii)." *Journal of Arid Environments*, 65: 94 – 101

Brooks M.L., Lair B.
2005 "Ecological effects of vehicular routes in a desert ecosystem." *The Mojave Desert: Ecosystem Processes and Sustainability*. R. H Webb, L Fenstermaker, J Heaton, D Hughson, editors. The University of Nevada Press, Reno, NV.

Brooks, M. L., & Pyke, D. A.
2001 "Invasive plants and fire in the deserts of North America." In K. E. Galley, & T. P. Wilson (Eds.), *Proceedings of the invasive species workshop: The role of fire in the control and spread of invasive species. Fire Conference 2000: The first national congress on fire ecology, prevention, and management*. Tallahassee, FL: Tall Timbers Research Station.

[BLM] U.S. Department of the Interior, Bureau of Land Management
2016 *Desert Renewable Energy Conservation Plan Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan.* BLM/CA/PL-2016/03+1793+8321, September 2016.

2015a *Desert Renewable Energy Conservation Plan Proposed Land Use Plan Amendment and Final Environmental Impact Statement.* BLM/CA/PL-2016/03+1793+8321

2015b *Land and Mineral Legacy Rehost 2000 System (LR 2000), Mining Claim Geographic Report*. Available at http://blm.gov/lr2000/. Accessed October 17, 2015 and updated February 26, 2016.

2015c Authorized and First-In Line Pending Solar ROW Applications on BLM-Administered Lands of April 1, 2015. Available at: http://blmsolar.anl.gov/program/pending/. Accessed December 10, 2015.

2015d *Renewable Energy Frequently Asked Questions*. Available at: http://www.blm.gov/ca/st/en/prog/energy/frequently_asked_questions.print.html, accessed November 2015

2015e *World War II Desert Training Center, California-Arizona Maneuver Area*. Available at: http://www.blm.gov/ca/st/en/fo/needles/patton.html. Accessed November 24, 2015.

2012 *Assessment of the Mineral Potential of Public Lands Located within Proposed Solar Energy Zones in California*. Terri Patton, Geologist.

2011 *Desert Sunlight Solar Farm Project California Desert Conservation Area Plan Amendment and Final Environmental Impact Statement.* South Coast Field Office, Palm Springs, California. CACA #48649.

1999 *California Desert Conservation Area Plan, 1980 as amended*. Desert District, Riverside, California.

1996 Correspondence between BLM California District Office and the California State Historic Preservation Officer regarding the Eagle Mountain Landfill Project, BLM910826B,

1993 *Mineral Report, Amendment to Mineral Potential Report*, P.K. Morton for the Exchange of Public and Private lands, Eagle Mountain Landfill Project.

1991 *California Statewide Wilderness Study Report: Record of Decision.* Washington, D.C.

1990 *California Statewide Wilderness Study Report: Part 4, Volume 6.* Washington, D.C.

1985 *Desert Training Center: California-Arizona Maneuver Area: Interpretive Plan*. California Desert District, Riverside, California.

1979 California Desert Conservation Area Wilderness Inventory, Final Descriptove Narratives, March 31, 1979

BLM and [DOE] U.S. Department of Energy

2012 *Final Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Final Programmatic EIS)*. Available at: http://solareis.anl.gov/documents/fpeis/index.cfm. DOE/EIS–0403

BLM and [CDFG] California Department of Fish and Game

2002 *Northern and Eastern Colorado Desert Coordinated Management Plan and Final Environmental Impact Statement*. Available at: http://www.blm.gov/ca/st/en/fo/cdd/neco.html. U.S.Bureau of Land Management, California Desert District, and California Department of Fish and Game, Inland, Desert and Eastern Sierra Region. July 2002.

Burghardt, J. E., E. S. Norby, and H. S. Pranger, II

2014 *Abandoned mineral lands in the National Park System—comprehensive inventory and assessment.* Natural Resource Technical Report NPS/NRSS/GRD/NRTR—2014/906. National Park Service, Fort Collins, Colorado.

California, State of

2014a 2012-2022 Projection Highlights (Riverside and San Bernardino Counties) Employment Development Department, Labor Market Information Division.

2014 b 2012-2022 Fastest Growing Occupations (Riverside and San Bernardino Counties) Employment Development Department, Labor Market Information Division.

2014c 2012-2022 Industry Employment Projects (Riverside and San Bernardino Counties) Employment Development Department, Labor Market Information Division.

[CA DOT] California Department of Transportation
2015 Long-Term Socio-Economic Forecasts by County. Accessed January 22, 2016 at: http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html

[CDFW] California Department of Fish and Wildlife
2015a Threatened and Endangered Mammals List, accessed on 3/18/2015 from www.dfg.ca.gov

2015b California Natural Diversity Database (CNDDB), State and Federally Listed Endangered, Threatened, and Rare Plants of California, Updated January 2015.

2015c Threatened and Endangered Reptiles, accessed on 3/18/2015 from www.dfg.ca.gov

[CDWR] California Department of Water Resources

2004 Chuckwalla Valley Groundwater Basin, California's Groundwater Bulletin 118

1979 Sources of power plant cooling water in the desert area of Southern California – Reconnaissance Study. Bulletin 91–24.

1975 California's groundwater: Bulletin 118. Available at: http://www.water.ca.gov/pubs/groundwater/bulletin_118/california's_ground_water__bulletin_118-75_/b118-1975.pdf, accessed May 19, 2011. California Department of Water Resources, Sacramento, CA.

[CEQ] Council on Environmental Quality
2014 Draft Guidance on Climate Change, available at: https://www.whitehouse.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance.pdf

1997 Environmental Justice, Guidance under the National Environmental Quality Act. Accessible at: http://www3.epa.gov/environmentaljustice/resources/policy/ej_guidance_nepa_ceq1297.pdf

[CSLC] California State Land Commission
2015 *Annual Staff Report on the Management of State School Lands Fiscal Year 2014-15*. Available on the Internet at: http://www.slc.ca.gov/Info/Reports/School_Lands/FY2014-15.pdf. Access December 6, 2015.

Cole, K. L., Ironside, K., Eischeid, J., Garfin, G., Duffy, P. B., & Toney, C.
2011 "Past and ongoing shifts in Joshua tree distribution support future modeled range contraction." Ecological Applications, 21, 137-149.

Cox, James B.
1996 *An Assessment of the Potential National Register Eligibility of the Eagle Mountain Mine, Appendix K, Draft Environmental Impact Statement/Environmental Impact Report for the Eagle Mountain Landfill and Recycling Project*. Prepared by CH2MHILL. State Clearinghouse No. 95052023

Creech, T.G., C.W. Epps, R. Monello, and J.D. Wehausen
2014 "Using Network Theory to Prioritize Management in a Desert Bighorn Sheep Metapopulation". Landscape Ecology: 29:605-619.

Cullinane Thomas, C., C. Huber, and L. Koontz.
2015 *2014 National Park visitor spending effects: Economic contributions to local communities, states, and the Nation*. Natural Resource Report NPS/NRSS/EQD/NRR—2015/947. National Park Service, Fort Collins, Colorado. Available on the Internet at: https://www.nature.nps.gov/socialscience/docs/VSE2014_Final.pdf

Dean Runyan Associates
2015 *California Travel Impacts 1992-2014*. Prepared for Visit California and the Governor's Office of Business Development. Available on the Internet at http://industry.visitcalifornia.com/media/uploads/files/editor/California_Travel_Impacts_April_2015.pdf

DeFries, Ruth, et al.
2007 "Land use change around protected areas: management to balance human needs and ecological function." *Ecological Applications*, 17.4 (2007): 1031-1038.

Dias, Ric Anthony
1995 *Together we build: the rise and fall of the Kaiser Steel Corporation in the New Deal West*. Ph. D. Dissertation. University of California, Riverside.

Dilsaver, Lary M.
2015 *Joshua Tree National Park: A History of Preserving the Desert. Administrative History*. Prepared for the National Park Service. Joshua Tree National Park. Twentynine Palms, California.

Divine, D. D., Ebert, D. W., and Douglas, C. L.
1996 The effect of scale on defining topographically suitable desert bighorn sheep habitat: Desert Bighorn Council Transactions, v. 40, p. 13-18.

Divine, D.d.
1998 *Habitat patch dynamics of desert bighorn sheep Ovis canadensis nelsoni in the eastern Mojave Desert*. Ph.D. Thesis, University of Nevada-Las Vegas

DMJM Design/AECOM
2007 County of Riverside Department of Facilities Management, Eagle Mountain Community Correctional Facility Adaptive Reuse Review & Assessment. DMJM Design/AECOM. July 24, 2007.

[DOE] Department of Energy
2011 *Critical Materials Strategy*. Published December 2011. Available at: http://energy.gov/sites/prod/files/DOE_CMS2011_FINAL_Full.pdf

Eagle Crest Energy Company
2015 *Eagle Mountain Pumped Storage Project No. 13123, Exhibit A Project Description*. Submitted to: Federal Energy Regulatory Commission, December 2015. Santa Monica, California

Edwards, T., Schwalbe, C. R., Swann, D. E., & Goldberg, C. S.
2004 "Implications of anthropogenic landscape change on inter-population movements of the desert tortoise (*Gopherus agassizii*)." Conservation Genetics, 5(4), 485-499.

Ennon, J. R., Lovich, J. E., Meyer, K., Bjurlin, C., & Arundel, T. R.
2012 "Nesting ecology of a population of Gopherus agassizii at a utility-scale wind energy facility in Southern California." *Copeia*, 2, 222-228.

[EPA] Environmental Protection Agency
1998 *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses*. Available on the Internet at: http://www3.epa.gov/environmentaljustice/resources/policy/ej_guidance_nepa_epa0498.pdf

Epps, Clinton W., John D. Wehausen, Per J. Palsbøll, and Dale R. McCullough
2010 "Using Genetic Tools to Track Desert Bighorn Sheep Colonizations." Journal of Wildlife Management. 74 (3), 522-531.

Epps, Clinton W., John D. Wehausen, Vernon C. Bleich, Steven G. Torres, and Justin S. Brashares
2007 "Optimizing dispersal and corridor models using landscape genetics." *Journal of Applied Ecology*. 44.4 (2007): 714-724.

Epps, Clinton W., J. Palsbøll, John D. Wehausen, George K. Roderick, Rob R. Ramey II, and Dale R. McCullough
2005 "Highways block gene flow and cause a rapid decline in genetic diversity of desert bighorn sheep." *Ecology Letters*, (2005) 8: 1029–1038

Epps, Clinton W., Dale R. Mccullough, John D. Wehausen, Vernon C. Bleich, and Jennifer L. Rechel
2004 "Effects of Climate Change on Population Persistence of Desert Dwelling Mountain Sheep in California." *Conservation Biology*. 18.1 (2004): 102-113.

Evans, R. D., A. Koyama, D. L. Sonderegger, T. N. Charlet,B. A. Newingham, L. F. Fenstermaker, B. Harlow, V. L. Jin, K. Ogle, S. D. Smith & R. S. Nowak
2014 "Greater ecosystem carbon in the Mojave Desert after ten years exposure to elevated CO2." *Nature Climate Change*:4, 394–397 (2014). Published online 06 April 2014

Farka, Mira and Adrian Fleissig
2015 *County of Riverside Economic Outlook and Forecasts 2015*. California State University, Fullerton: Woods Center for Economic Analysis and Forecasts. Available on the Internet at <http://www.countyofriverside.us/Portals/0/Government/Budget%20Information/2013-2014%20Recommended%20Docs/2014_Q3_Report_2014-04-30-FINAL_for_printingN.pdf>

[FERC] Federal Energy Regulatory Commission
2014 Order No. 13123-002, Issuing Original License: Eagle Crest Energy Company Project, 47 FERC 61,220 (June 19, 2014).

2012 Final Environmental Impact Statement for Hydropower License Eagle Mountain Pumped Storage Hydroelectric Project—FERC Project No. 13123-002, California, FERC/FEIS-F-0238. Washington, D.C.

Force, Eric R.
2001 *Eagle Mountain mine—Geology of the former Kaiser Steel operation in Riverside County, California*. U.S. Geological Survey Open-File Report 01-237, Tucson, AZ.

Gervais, J, Rosenberg, D., Comrack, L
2008 Studies of Western Birds 1:218–226, 2008, BURROWING OWL (*Athene cunicularia*).

Gilford, Steve.
2006 "The Rediscovery of Contractors General Hospital – Birthplace of Kaiser Permanente." *The Permanente Journal*. Summer 2006, Vol. 10, No. 2.

Goin, Peter and C. Elizabeth Raymond
2004 *Changing Mines in America*. Santa Fe, NM: The Center for American Places, University of Chicago Press.

Gonzalez, P.
2012 *Climate change trends and ecological vulnerabilities for planning at Joshua Tree National Park*. (Unpublished report). National Park Service, Denver, CO.

Groom, M.J., G.K. Meffe, and C.R. Carroll
2006 Principles of conservation biology. Sinauer, Sunderland, Massachusetts, USA.

Gruen, Philip J.
1998 *Colorado River Aqueduct, California*. CAL. I- HAER. No. CA-226. Historic American Engineering Record (HAER). Washington, DC 20240

2007 "Ecological mechanisms linking protected areas to surrounding lands." *Ecological Applications* 17.4 (2007): 974-988.

Hansen, Andrew J., and Ruth DeFries.
2007 "Ecological mechanisms linking protected areas to surrounding lands." Ecological Applications 17.4 (2007): 974-988.

Hansen, A. J., Davis, C., Piekielek, N. B., Gross, J. E., Theobald, D. M., Goetz, S. J and Ruth DeFries
2011 "Delineating the ecosystems containing protected areas for monitoring and management." *Bioscience*, 61, 263-273.

Hansen, Andrew J., Nathan B. Piekielek, Cory Davis, Jessica R. Haas, David M. Theobald, John E. Gross, William B. Monahan, Tom Olliff, and Steven W. Running
2014 "Exposure of US National Parks to Land Use and Climate Change." 1900-2100. *Ecological Applications 2014* 24:3, 484-502.

Harder, Cecil Harder
1912 *Iron-Ore Deposits Of The Eagle Mountains, California. Bulletin 503*. Department of the Interior United States Geological Survey. Government Printing Office, Washington, DC.

Hardesty, Donald and Jessica Smith
2009 *New Lands, Old Lands: A History of the Lands Added to Joshua Tree National Park, California*. Report prepared for the National Park Service, Joshua Tree National Park, Twentynine Palms, California.

Hendricks, Rickey Lynn.
1993 *A Model for National Health Care: The History of Kaiser Permanente*. New Brunswick, N.J.: Rutgers University Press.

Hughson, Debra L. and Darby, Neal
2013 *Desert tortoise mortality in Mojave National Preserve, California*. California Fish and Game 99(4) pg. 222-232

Hundley, Norris, Jr.
1992 *The Great Thirst: Californians and Water, 1770s-1990s*. Berkeley: University of California Press.

[IPCC] Intergovernmental Panel on Climate Change
2013 *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.

Johnson, Francis, J. and Patricia H. Johnson
1957 "An Indian Trail Complex of the Central Colorado Desert: A Preliminary Survey." University of California Archaeological Survey Reports 37:22-34.

Kaiser Eagle Mountain, LLC
2013 Interim Management Plan, Kaiser Eagle Mountain Mine (CA Mine ID # 91-33-0600). Prepared by Sespe Consulting, Inc. Ventura, California.

Kaiser Steel Corporation
1978 *Surface mining reclamation plan, Eagle Mountain mine*. Kaiser Steel Corporation, Riverside, California.

Kunkel, K. E., Stevens L. E., Stevens, S. E., Sun, L., Janssen, E., Wuebbles, D., Redmond K. T., & Dobson, J. G.
2013 *Regional Climate Trends and Scenarios for the U.S. National Climate Assessment*. Asheville, NC: National Ocean and Atmospheric Administration.

The Kyser Center for Economic Research
2015 *Economic Forecast and Industry Outlook 2015-201*. Prepared for Los Angeles Economic Development Corporation. Available on the Internet at <http://laedc.org/wp-content/uploads/2015/02/LAEDC-February-2015-Forecast-Report.pdf>

La Doux, T., C. Lea, E. Babich
2013 *A Summary of the Joshua Tree National Park Vegetation Mapping Project NPS Vegetation Inventory Program*. Natural Resource Technical Report NPS/JOTR/NRTR—2013/723

Langenheim V.E. et. al.
2007 "Isostatic gravity map of Joshua Tree National Park and Vicinity in Southern California". 2007. Open file report 2007-1218.

Longcore, T. and C. Rich
2004 "Ecological light pollution." *Front Ecol Environ* 2004; 2(4): 191–198

Lovich, J. E., & Ennen, J. R
2011 "Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States." *BioScience*, 61(12), 982-992.

Lovich, J.E., C.B. Yackulic, J. Freilich, M. Agha, M. Meulblok, K.P. Meyer, T.R. Arundel, J. Hansen, M.S. Vamstad and S.A. Root.
2014 "Climatic variation and tortoise survival: has a desert species met its match?" Biological Conservation 169:214-224.

Lynch, John S., John W. Kennedy, and Robert L. Wooley
1982. Patton's Desert Training Center. Council on America's Military Past, Post Office Box 1151, Fort Meyer, Virginia.

Mathany, T.M., Wright, M.T., Beuttel, B.S., and Belitz, Kenneth
2012 Groundwater-quality data in the Borrego Valley, Central Desert, and Low-Use Basins of the Mojave and Sonoran Deserts study unit, 2008-2010: Results from the California GAMA Program: U.S. Geological Survey Data Series 659, 100 p.

Miller, D.H., D.R. Bedford, D.L. Hughson, E.V. McDonald, S.E. Robinson, and K.M. Schmidt
2009 "Mapping Mojave Desert Ecosystem Properties with Surficial Geology." In The Mojave Desert, Ecosystem Processes and Sustainability, eds. Webb, R.H., L.F., Fenstermaker, J.S. Heaton, D.L. Hughson, E.V. McDonald, and D.H. Miller. 225-251. University of Nevada Press, Reno & Las Vegas, NV.

Monahan, W. B., Gross, J. E., Svancara, L. K., & Philippi, T.
2012 *A guide to interpreting NPScape data and analyses (Natural Resource Technical Report NPS/NRSS/NRTR—2012/578).* Fort Collins, CO: National Park Service.

[MWD] Metropolitan Water District of Southern California
2014 *The Metropolitan Water District of Southern California Annual Report for The Fiscal Year July 1, 2013 to June 30, 2014.* Available at: http://www.mwdh2o.com/PDF_Who_We_Are/1.5.1_annual_report_2014.pdf, access December 7, 2015.

[NPCA] National Parks Conservation Association
2015 *Polluted Parks: How Dirty Air is Harming America's National Parks.* August 2015. Available at: https://www.npca.org/resources/3137-polluted-parks-how-dirty-air-is-harming-america-s-national-parks

[NPS] United States Department of the Interior, National Park Service
2015a *Joshua Tree National Park Foundation Document.* U.S. Department of the Interior, National Park Service

2015b *NPS Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making.* Available at http://www.nps.gov/refdesk/DOrders/DOrder12.html.

2014 *Resource Stewardship Strategy.* Joshua Tree National Park, California: National Park Service, Pacific West Region.

2012 *Director's Order 25, Land Protection, Land Protection, Reference Manual 25, Draft.*

2010a *National Park Service Climate Change Response Strategy.* National Park Service Climate Change Response Program, Fort Collins, Colorado

2010b *Joshua Tree National Park Climate Action.* Accessible at: http://www.nps.gov/subjects/climatechange/upload/JOTR_Climate-Action-Plan_Final.pdf

2006 *NPS Management Policies 2006.* Washington, DC: U.S. Government Printing Office.

2003 *Director's Order #77-2: Floodplain Management.*

2000 *Joshua Tree National Park and Wilderness Area, Backcountry and Wilderness Plan, Amendment to the 1995 General Management Plan*, Record of Decision, January 2000. U.S. Department of the Interior, National Park Service, Joshua Tree National Park.

1998 *NPS Director's Order 28: Cultural Resources Management Guideline*. Available at http://www.nps.gov/policy/DOrders/DOrder28.html.

1995 *General Management Plan, Development Concept Plans and Environmental Impact Statement.* Denver, CO: National Park Service, Denver Service Center.

1992 The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, & Reconstructing Historic Buildings. Available at http://www.nps.gov/history/hps/tps/standguide/.

Nussear, K. E., Todd C. Esque, Richard D. Inman, Leila Gass, Kathryn A. Thomas, Cynthia S. A. Wallace, Joan B. Blainey, David M. Miller, and Robert H. Webb.
2009 "Modeling habitat of the desert tortoise (*Gopherus agassizii*) in the Mojave and parts of the Sonoran deserts of California, Nevada, Utah, and Arizona." US Geological Survey open-file report 1102.

Ouren, D. S., Hass, C., Melcher, C. P., Stewart, S. C., Ponds, P. D., Sexton, N. R and Zachary H. Bowen
2007 *Environmental effects of off-highway vehicles on Bureau of Land Management Lands*. Fort Collins, CO: U.S. Geological Survey, Fort Collins Science Center.

Overpeck, J., G. Garfin, A. Jardine, D. E. Busch, D. Cayan, M. Dettinger, E. Fleish-man, A. Gershunov, G. MacDonald, K. T. Redmond, W. R. Travis, and B. Udall
2013 "Summary for Decision Makers." In *Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment*, edited by G. Garfin, A. Jardine, R. Merideth, M. Black, and S. LeRoy, 1–20. A report by the Southwest Climate Alliance. Washington, DC: Island Press.

Penrod, K., C. Cabañero, P. Beier, C. Luke, W. Spencer, E. Rubin, and C. Paulman
2008 *A Linkage Design for the Joshua Tree-Twentynine Palms Connection.* South Coast Wildlands, Fair Oaks, California. www.scwildlands.org

Powell, R.E., Matti, J.C., Cossette, P.M.
2015 *Geology of the Joshua Tree National Park geodatabase: U.S. Geological Survey Open-File Report 2015–1175*, GIS database, http://dx.doi.org/10.3133/ofr20151175.

Powell, R. E., Whittington, C. L., Grauch, V. J. S., and McColly, R. A.
1984 *Mineral Resource Potential of the Eagle Mountains Wilderness Study Area (CDCA-334), Riverside County, California.* Open File Report: 84-631. Riverside County, California.

Regional Environmental Consultants (RECON)
1991 *Cultural Resources Survey of the Eagle Mountain Mine and the Kaiser Mountain Mine and the Kaiser Industrial Railroad.* Prepared by Charles S. Bull, Sue A. Wade, and McMillen Davis. Cultural Resource Permit #881916, prepared for Mine Reclamation Corporation

Riverside County
2015a Riverside County GIS. http://gis.rivcoit.org/GISData.aspx. Accessed on 10/29/2015.

2015b Riverside County Zoning Ordinance (Ordinance 348), Amended through Ordinance No. 348.4802, Effective 06/18/15. Internet Web site: http://planning.rctlma.org/Portals/0/zoning/ordnance/Ord_348_clean_version.pdf?ver=2015-09-22-111042-933. Accessed December 8, 2015.

2003 County of Riverside General Plan and Desert Center Area Plan, October 2003, as amended. GPA01120. Effective 12/9/14.Available on the internet at: http://planning.rctlma.org/Portals/0/genplan/general_plan_2013/3%20Area%20Plan%20Volume%202/DCAP_clean_112414.pdf. Accessed on November 3 2015.

1997a *Specific Plan 305—Eagle Mountain Landfill Approved Land Use Map, adopted September 8, 1997*. Available at: http://planning.rctlma.org/SpecificPlans/ApprovedSpecificPlansDocuments.aspx.html, accessed May 18, 2010. Riverside County Planning Department, Riverside, California.

1997b *Specific P*lan 306—Eagle Mountain Townsite Approved Land Use Map, adopted September 8, 1997. Available at: http://planning.rctlma.org/SpecificPlans/ApprovedSpecificPlansDocuments.aspx.html, accessed May 18, 2010. Riverside County Planning Department, Riverside, California.

Riverside County and [BLM] Bureau of Land Management

1996 *Draft Environmental Impact Statement/Environmental Impact Report for the Eagle Mountain Landfill and Recycling Project*. Prepared by CH2MHILL. State Clearinghouse No. 95052023

Rudnick, D. A., Ryan, S. J., Beier, P., Cushman, S. A., Dieffenbach, F., Epps, C. . .Trombulak, S.C.

2012 "The role of landscape connectivity in planning and implementing conservation and restoration priorities." *Issues in Ecology, Report Number 16*. Retrieved from http://www.esa.org/science_resources/issues/FileEnglish/issuesinecology16.pdf

San Bernardino County Economic Development Agency

2015 *City Profiles*. Available on the Internet at <http://www.sbcountyadvantage.com/Data-Center/Cities-Unincorporated.aspx>

Schmidt, James J.

1996 *Cultural Resource Investigation: Eagle Mountain Townsite (1995). Appendix K, Draft Environmental Impact Statement/Environmental Impact Report for the Eagle Mountain Landfill and Recycling Project.* Prepared by Greenwood and Associates for CH2MHILL. State Clearinghouse No. 95052023

Sonoran Institute

2015 *The California Desert Conservation and Recreation Act of 2015: Impacts on Mining and the Regional Economy*. Available on the Internet at: http://www.sonoraninstitute.org/images/stories/Mining_Report_Final_10-22-2015.pdf

Southern California Association of Governments

2015a *Profile of Riverside County* LOCAL PROFILES REPORT 2015

2015b *Profile of the Unincorporated Area of Riverside County* LOCAL PROFILES REPORT 2015

2012 *Regional Transportation Plan 2012-2035*. Sustainable Communities Strategy Towards a Sustainable Future. Available on the Internet at <http://rtpscs.scag.ca.gov/Documents/2012/pfinal/SR/2012pfRTP_GrowthForecast.pdf>

[SWQCB] State Water Resources Control Board
2013 *Final Water Quality Certification, issued July 15, 2013*. Federal Energy Regulatory Commission (FERC) Project No. 13123. Project Name: Eagle Mountain Pumped Storage Project (Eagle Mountain Project). Available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/eaglemtn13123_certification071513.shtml

Steinemann, A.
1989 "Nonpotable Ground Water in the Desert Area of Southeast California for Powerplant Cooling." U.S. Geological Survey Water Supply Paper no. 2343, 1989.

Stromberg, J.C.
1993 "Fremont cottonwood-Goodding willow riparian forest: a review of their ecology, threats, and recovery potential." *Journal of the Arizona-Nevada Academy of Scien*ce: 27:97–110.

Stonestrom, D. A., J. Constantz, T.P.A. Ferre & S.A. Leake (Eds.)
2007 *Groundwater Recharge in the Arid and Semiarid Southwestern United States*. U.S. Geological Survey Professional Paper 1703.

Tracy, C.R., R. Averill-Murray, W.I. Boarman, D. Delehanty, J. Heaton, E. McCoy, D. Morafka, K. Nussear, B. Hagerty, and P. Medica
2004 *Desert Tortoise Recovery Plan Assessment*. Report to the U.S. Fish and Wildlife Service, Reno, Nevada

Trent, D. D.
1998 "Mines in Joshua Tree National Monument, San Bernardino and Riverside Counties." *California Geology*: September/October 1998, p. 17.

[U.S. Census Bureau]United States Census Bureau
2015 Income and Poverty in the United States: 2014. Current Population Reports, DeNavas-Walt, Carmen and Proctor. Bernadette D.

2014 2010-2014 American Community Survey 5-year estimates. Desert Center, California CDP. US Census Bureau

2010a Demographic and Housing Estimates, American Community, Survey 3-Year Estimates

2010b Demographic and Housing Estimates, American Community Survey 5-Year Estimates

2010c Poverty Status in The Past 12 Months, American Community Survey 5-Year Estimates

2010d Economic Characteristics, American Community Survey 5-Year Estimates

[USDI - OIG] United States Department of the Interior, Office of the Inspector General
2008 *Abandoned Mine Lands in the Department of the Interior*. United States Department of the Interior. Washington, D.C.(C-IN-MOA-0004-2007)

[USFWS] United States Fish and Wildlife Service
2015 IPaC Trust Resource Report for Riverside County, Generated February 2015.

2011a "Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*)." Region 8, Pacific Southwest Region, U.S. Fish and Wildlife Service. Sacramento, California.

2011b "Biological Opinion on the Desert Sunlight SolarRiverside County, California." Carlsbad Fish and Wildlife Office. Carlsbad, California.

2000 "Desert Tortoise." 63 Federal Register 13136; USFWS 2000.

[USGS] United States Geological Survey
2013 Chuckwalla Valley Multiple-well Monitoring Site, Chuckwalla Valley, Riverside County, California, Open-File Report 2013–122. October 2013. Accessed October 2015.

2011 Mineral Resource Data System: Conterminous U.S., Mineral Resources On-Line Spatial Data. Available at http://mrdata.usgs.gov/mineral-resources/ mrds-us.html. Accessed October 14, 2015.

Wehausen, J.D.
2006 "Nelson Bighorn Sheep." West Mojave Plan Species Accounts. U.S. Department of the Interior, Bureau of Land Management. January 2006. Accessed April 2, 2015. http://www.blm.gov/ca/forms/wildlife/details.php?detaillabelc=Desert%20Bighorn%20Sheep&detaillabels=Ovis%20canadensis%20nelsoni&metode=serial_number&search=2555

Wildlife Research Institute, Inc.
2011 "Golden Eagle Survey Report for the Joshua Tree National Park in Riverside County, California." Report submitted to park.

2010 "Golden Eagle Aerial Surveys for Eagle Mountain Pumped Storage Project in the Mojave Desert Region, California." Prepared for Eagle Crest Energy Company. Romona, California.

Woodward, Clyde
1998 *"Phase I Technical Feasibility Report for Offstream Storage on the Colorado River Aqueduct."* prepared for Metropolitan Water District of Southern California.

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Joshua Tree National Park staff provided subject-matter expertise for study analysis and alternatives, coordinated public outreach efforts, and contributed data and other information.

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