CHAPTER 5
Cumulative Impacts

5.1 Introduction and Approach

5.1.1 CEQA Statutory Guidance

CEQA requires that an EIR assess the cumulative impacts of a project with respect to past, present, and probable future projects within the region. According to Section 15355 of the *CEQA Guidelines*:

> *"Cumulative impacts" refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.*
>
> *(a) The individual effects may be changes resulting from a single project or a number of separate projects.*
>
> *(b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

Pertinent guidance for cumulative impact analysis is given in Section 15130 of the *CEQA Guidelines*. The necessary components of an adequate cumulative effects analysis include (CEQA Guidelines §15130[b]):

- Either: (A) a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts; or (B) a summary of projections contained in an adopted general plan or related planning document that is designed to evaluate regional or area wide conditions.
- A summary of the expected environmental effects to be produced by those projects.
- Analysis of the cumulative impacts of the relevant projects in combination with the Project.
- Reasonable options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Consistent with CEQA Guidelines §15130(b), the discussion of cumulative impacts must reflect the severity of the impacts and the likelihood of their occurrence; however, the discussion need

not be as detailed as the discussion of environmental impacts attributable to the project alone. The discussion need not discuss impacts which do not result in part from the project. (CEQA Guidelines §15130[a][1].) Further, the discussion is guided by the standards of practicality and reasonableness. Accordingly, the discussion of cumulative impacts in this EIR focuses on significant and potentially significant cumulative impacts (CEQA Guidelines §15130[a]).

5.1.2 Approach

Significance Threshold

Would the proposed Project result in substantial adverse effects when viewed in connection with the effects of past projects, the effects of other concurrent projects, and the effects of probable future projects?

Impact Analysis

The following steps were followed for this cumulative effects analysis, pursuant to the CEQA statutory guidance summarized above: (1) the potential impacts of the proposed Project, which are identified in Chapter 4 of this EIR, were reviewed to determine (a) resource areas of no impact that could be screened from further evaluation and (b) resource areas that would be affected by Project activities that should be evaluated in this cumulative effects analysis; (2) other relevant past, present and reasonably foreseeable future projects, plans, and programs were identified for evaluation in this cumulative effects analysis; and (3) potential cumulative effects of the proposed Project were identified and, when it was determined that the Project could result in a cumulatively considerable contribution to a significant cumulative effect, mitigation measures were identified to minimize the proposed Project's contribution to the cumulative effect. This evaluation of cumulative effects considers both the Groundwater Conservation and Recovery Component and the Imported Water Storage Component of the Project. Additional project-level environmental review of the Storage Component of the Project will be completed when sufficient details have been developed and, as appropriate the cumulative effects analysis will be reviewed to determine if evaluation is required.

Project Impacts Considered in the Cumulative Effects Analysis

The potential environmental impacts associated with the proposed Project are summarized in the Executive Summary, Tables S-1 and S-2, and evaluated throughout Chapter 4 of this EIR. For those environmental resource areas on which the proposed Project would have no impact, the proposed Project would not contribute to cumulative effects in these areas.

No Impacts

The proposed Project would not contribute to cumulative effects in the following resource impact areas and therefore these areas are eliminated from further consideration in this analysis:

Aesthetics – Designated Scenic Highways: The Project area does not include any designated scenic highways. For this reason, no scenic highways would be adversely affected by Project activities.

Agriculture and Forestry Resources – Conversion of FMMP-Designated Agricultural Lands, Williamson Act Contracts; Forest Lands, Timberlands: Neither the Project site nor the surrounding areas have been designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance, and no such designated farmland would be converted. The Project site and vicinity are not under Williamson Act contracts, thus no cancellation of contracts would take place. The proposed Project is not located on forest land or timberland and no such designated lands are located in the Project vicinity. Because the proposed Project would not result in any impacts to forest land or timberland resources, this resource area is not discussed further in this cumulative effects analysis.

Cultural Resources – Indian Trust Assets – Neither Project construction nor operation would create any impacts on ITAs since none are located in the areas of the Project. Therefore, there would be no adverse cumulative impacts on ITAs.

Hazards and Hazardous Materials – Interference with Emergency Response or Evacuation Routes: The Project site is located more than ¼ mile away from any school. The Project would not interfere with adopted emergency response plans or evacuation routes defined by any local jurisdictions as there are none in the project area.

Hydrology and Water Quality – Flood, Seiche, Tsunami or Mudflow Hazard: The proposed Project does not include any construction of housing that would increase risk associated with flooding, seiche, tsunami or mudflow.

Land Use and Planning – Resource Plan Consistency and Dividing a Community: The Project area is not covered by any established Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs). No established communities are present within or immediately adjacent to the Project site.

Land Use and Planning – Environmental Justice: Neither the construction nor operation of the Project would disproportionately impact any disadvantaged populations. Therefore, no adverse cumulative impacts on environmental justice would arise as a result of the Project.

Land Use and Planning – Socioeconomics: Neither the construction nor operation of the Project would result in adverse economic or socioeconomic effects that would, in turn, result in adverse environmental effects. On the contrary, the Project would have a beneficial effect on regional economic and socioeconomic conditions as a result of the job opportunities created by Project construction, and to a lesser degree, operation. Therefore, no adverse cumulative impacts on socioeconomic conditions would arise as a result of the Project.

Recreation: The proposed Project does not include recreational facilities or require the construction of new or expansion of existing recreational facilities. The proposed Project has been designed to completely avoid adjacent BLM lands, including designated Wilderness Areas. Construction of the proposed Project would not conflict with recreational uses in the Project vicinity because access to BLM lands would be unimpeded throughout construction and operation. Because the proposed Project would not result in recreation impacts, this resource area is not discussed further in this cumulative effects analysis.

Transportation and Traffic – Transit, Pedestrian or Bike Routes: There are no bus stops, sidewalks, or bike routes located near the proposed Project. The closest community, Amboy, is approximately 15 miles northwest of the proposed wellfield. Due to the remote location of the proposed Project, no adverse impacts to public transit, bicycle or pedestrian facilities would occur.

Environmental Impacts

The majority of the environmental impacts associated with the proposed Project would result from construction of the proposed Project facilities. Facilities construction would result in impacts on aesthetic, biological, cultural and mineral resources; air quality and greenhouse gas emissions; soils; hazardous materials; hydrology, drainage, and water quality; noise; utilities; and traffic/transportation. Most of the construction-related impacts, such as increased levels of noise and traffic, would be temporary, short-term impacts that would cease at the end of construction; other temporary construction-related impacts, such as the digging of trenches for pipeline installation, would be repaired and/or restored to pre-construction conditions following construction.

A small number of Project effects would occur over the long-term and/or would be permanent, including the permanent loss of up to 250 acres of desert habitat due to the footprint of permanent aboveground facilities (well pads, roads, spreading basins, and pump stations); the permanent introduction of visible aboveground facilities, such as power poles (Project may employ overhead powerlines or underground powerline; to be determined during Project design), pump stations, and spreading basins; and the long-term (albeit minor, intermittent) disruption of wildlife habitat associated with wellfield operation and maintenance. There would be very few impacts associated with the proposed groundwater management program, including pumping and delivery of groundwater to participating agencies under the Groundwater Conservation and Recovery Component and the surface water import, groundwater recharge and storage, and return of surface water via groundwater banking under the Imported Surface Water Component. The potential impacts associated with Project operation for groundwater pumping and storage would be mitigated to less than significant by implementation of measures included in the GMMMP prepared for the project.

Appropriately, this cumulative effects analysis is focused on the areas where the Project would have environmental effects and where it could make a cumulatively considerable contribution to a significant cumulative impact.

Identification of Relevant Past, Present, and Reasonably Foreseeable Future Projects

This chapter considers the potential cumulative effects of the proposed Project in combination with other relevant development projects occurring in the Project area, vicinity, and/or region, depending upon the environmental resource area. For the purposes of this cumulative effects analysis, "relevant projects" are those that would affect the same footprint or defined geographic areas; those that would involve similar construction and/or operational features and/or would have similar types of environmental effects on the same environmental resource areas (for example, projects that would contribute similar groundwater effects within the same groundwater basin); and those that would occur over a similar timeframe.

Relevant projects, plans, and/or programs were identified using a combination of the "list" approach and the "plan/projection" approach described in the CEQA Guidelines. Because cumulative environmental impacts are most likely to arise when a relationship exists between a proposed activity and other projects expected to occur in a similar location, involving similar actions, and/or occurring over a similar time period, the following parameters were used to refine the list of projects to those that are relevant to this cumulative effects analysis:

- *Geographic Scope and Location* – a relevant project is one that would occur within the defined geographic scope for a particular environmental resource area.
- *Similar Environmental Impacts* – a relevant project would contribute to effects on environmental resource areas that would also be affected by the proposed Project.
- *Temporal Scope* – the timing and schedule for construction and implementation, or the ongoing operational effects associated with a relevant project would overlap in time with the proposed Project.

Geographic Scope

The geographic scope defines the geographic area within which projects may contribute to a specific cumulative impact, when considered in combination with the proposed Project. According to the *CEQA Guidelines* (CCR, Title 14, § 15130(b)(3)), a lead agency should provide a reasonable explanation of the geographic limitation used in the cumulative impacts analysis. This cumulative effects analysis generally covers the area bounded by the Old US 66 and I-40 corridor to the north; I-95 to the west; SR-62 to the south; and the Marine Corps Air Ground Combat Center, SR-247, and SR-62 through Yucca Valley to the east (see **Figure 5-1** on page 5-10). However, the geographic scope of cumulative impact analyses varies for each environmental resource area that is analyzed. **Table 5-1** defines the geographic scope of the analysis for each of the environmental resource areas analyzed for cumulative effects in Section 5.3, below. For example, the geographic scope of the analysis for cumulative aesthetics, noise, geology, soils, and vegetation impacts is localized and generally limited to the Project site and areas and proposed activities immediately adjacent to the Project site. Conversely, the geographic scope of the analysis for cumulative air quality and wildlife species impacts is more broad and, as a result, projects located within the air basin and/or that would occur within the range of a particular sensitive species would be considered. The general geographic limits and the geographic scopes associated with each environmental resource area (Table 5-1) were used to generate the list of past, present, and probable future projects, plans, and programs that are considered in this analysis.

This cumulative effect analysis assumes that projects located beyond these general geographic boundaries would be unlikely to result in cumulative impacts that would compound those associated with the proposed Project. For example, there are at least 29 proposed solar projects and nine proposed wind projects along the I-10 corridor between Palm Springs and Blythe, in the Coachella Valley, and numerous proposals for solar, wind, and geothermal development in the Imperial Valley of Imperial County. While collectively these other projects promote the same federal and state mandates for renewable energy development, they are considered to be outside the geographic scope of this analysis because they are located along different transportation and transmission corridors, in a slightly different climate and ecosystem (the Colorado Desert / "low

desert"), and are located at such distance from the proposed Project (the nearest is located about 25 miles to the south) that cumulative effects would be unlikely.

TABLE 5-1
SUMMARY OF ENVIRONMENTAL RESOURCE AREAS AND ASSOCIATED GEOGRAPHIC SCOPES FOR THE CUMULATIVE EFFECTS ANALYSIS

Environmental Resource Area / Project Impact	Geographic Scope	Resource Area Overview
Aesthetics	Local. Travel corridors in close proximity (SR-62 and 66), and higher elevation areas from which the Project site is visible.	The visual environment consists of an arid landscape with sparsely vegetated mountains, broad valleys with expansive bajadas, and scattered dry lakes. Land consists of open space and undeveloped natural areas, with scattered, isolated development.
Agriculture and Forestry	Regional. Eastern San Bernardino County (Desert Regions).	About 90 percent of the County's land area is desert. Agriculture accounts for 2.32 percent, or 41,793 acres, of the land and has decreased over time.
Air Quality	Regional. Mojave Desert Air Basin (MDAB).	Due to the proximity of coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north, air masses pushed onshore in southern California by differential heating are channeled through the MDAB. Wind comes from the west, west-southwest, and southwest.
Biological Resources	Local and Regional. The portion of the Mojave Desert bounded by I-40 and Old US 66 to the north, I-95 to the east, SR-62 to the west, and SR 247 to the west. Also, regional habitat range of the Desert Tortoise. Also Fenner Watershed for assessment of groundwater affects on biological resources.	The only formally-listed species with medium to high potential to occur in the Project area is the desert tortoise. However, the Groundwater Conservation and Recovery Component would not be within designated critical habitat or any DWMAs. Four native plant communities would be impacted by the proposed Project. Other special-status species with potential to occur in the Project area include 7 birds, 3 mammals, 1 reptile, and 3 plant species.
Cultural Resources	Local. Project footprint and views from the surrounding mountains.	The records search indicated that 50 cultural resources have been previously recorded within the study area. A total of 41 resources were documented along the proposed pipeline. No prehistoric resources or artifacts were observed during the survey and no isolated artifacts were recorded.
Geology and Soils	Site-specific. Project site and immediately adjacent areas.	Soils in the Project area are predominantly composed of sand and gravel grain sizes; very low to negligible amounts of clay material have been noted.

Environmental Resource Area / Project Impact	Geographic Scope	Resource Area Overview
Greenhouse Gas Emissions	Statewide. State of California. GHG emissions contribute to a global climate change but for purposes of this analysis, cumulative GHG emissions are evaluated in light of the State's GHG reduction goals.	Global warming may result in loss of snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.
Hazards and Hazardous Materials	Site-specific. Project area, including the construction zone and the area within a one-quarter-mile radius.	Current and historical uses in the Project area include agriculture, aviation, former military use, historical mining activities, and existing natural gas pipelines. There are no residences, industrial facilities or gasoline service stations in the Project area.
Hydrology and Water Quality	Local. Fenner, Bristol, Cadiz, and Orange Blossom Wash Watersheds. Because the Project is located in a closed surface and groundwater basin, activities in the broader region, outside the Watersheds, do not contribute to cumulative effects.	The total area of the combined Fenner (including Orange Blossom Wash), Bristol and Cadiz groundwater basin system is approximately 2,710 square miles. Groundwater ranges from approximately 270 feet bgs to the northeast, to 140 feet bgs in the southwest, becoming shallower with proximity to the Dry Lakes. Beneath the Dry Lakes groundwater is saline.
Land Use and Planning	Local and Regional. Communities within the southeast portion of the Desert region of San Bernardino County, generally bounded by the Morongo Valley to the east, I- 95 to the west, I-40 and Old US 66 to the north, and SR-62 to the south.	Land uses in Cadiz Valley include desert conservation, open space, recreation, agriculture, military facilities, mining, salt extraction, and numerous transportation and utility corridors. Cadiz is the largest private landowner in the area, with approximately 45,000 acres of landholdings in the Project vicinity, including approximately 34,000 contiguous acres. Of this total, 9,600 acres of land are zoned for agriculture. The Project area is located in the northeastern portion of the contiguous acreage. The proposed Project wellfield would occupy 115 acres.
Mineral Resources	Regional. Eastern San Bernardino County.	Playas in the area have produced and are currently producing evaporite minerals.
Noise	Local. Project site and immediately adjacent areas.	The noise environment is typical of open space and agricultural areas. The predominant sources of noise include railroad, roadway traffic, and equipment noise from existing agricultural operations. Military operations including explosions and low-flying aircraft also generate noise in the Valley.
Public Services and Utilities	Local. The area generally bounded by Twentynine Palms and Joshua Tree to the west, I-95 (Fort Mohave and Needles) to the east, I-40 and Old US 66 to the north, and SR-62 to the south.	Medical aid and ambulance services are provided from Twentynine Palms, Joshua Tree, and Needles. Numerous water and utility corridors traverse the Project area. The Twentynine Palms Landfill has the capacity to receive solid waste into the foreseeable future. SCE provides electrical service to Amboy, Cadiz and other communities near the proposed Project area. The proposed pipeline would cross numerous natural drainage systems.

Environmental Resource Area / Project Impact	Geographic Scope	Resource Area Overview
Transportation and Traffic	Local. I-40 and Old US 66 (also known as National Trails Highway) to the north; SR-247 and SR-62 to the west; SR-62 and I-10 to the south; and US 95 and SR-177 to the east.	All of the local and regional transportation corridors operate at an acceptable Level of Service (LOS), either A or B.

SOURCE: ESA, 2011.

Similar Environmental Impacts

The potential environmental impacts associated with the proposed Project were used to help identify relevant projects, plans, and programs for evaluation in this cumulative effects analysis. As described above, facilities construction would result in impacts to aesthetic, biological, cultural and mineral resources; air quality and greenhouse gas emissions; soils; hazardous materials; hydrology, drainage, and water quality; noise; utilities; and traffic/transportation. Most of the construction-related impacts would be temporary, short-term impacts, but a few Project effects would occur over the long-term and/or would be permanent, including loss of desert habitats and introduction of visible aboveground facilities. Operation and maintenance of Project facilities would result in the long-term periodic disruption of wildlife habitat. Projects, plans, and programs with the potential to result in similar environmental impacts were included in this cumulative effects analysis.

Temporal Scope

This cumulative impact analysis considers other projects that have recently been completed, are currently under construction, or are in the planning process. Both short-term and long-term cumulative impacts of the proposed Project, in conjunction with other cumulative projects in the area, are evaluated.

Schedule is particularly relevant to the consideration of cumulative impacts, since construction impacts tend to be relatively short-term. As described in Chapter 4 of this EIR, the majority of impacts associated with implementation of the proposed Project are short-term impacts associated with the construction phases, rather than with long-term Project operation. Therefore, the analysis of cumulative impacts pays particular attention to any cumulative projects with construction schedules that could overlap with the proposed construction schedule for this Project. The Groundwater Conservation and Recovery Component would have a two-year construction period that is estimated to take place between 2012 and 2014. The schedule for the Imported Water Storage Component has not yet been established. For purposes of analysis, construction of the Imported Water Storage Component facilities is projected to occur approximately 5 to 10 years after the Groundwater Conservation and Recovery Component, sometime between 2019 and 2024, on a mid-term horizon.

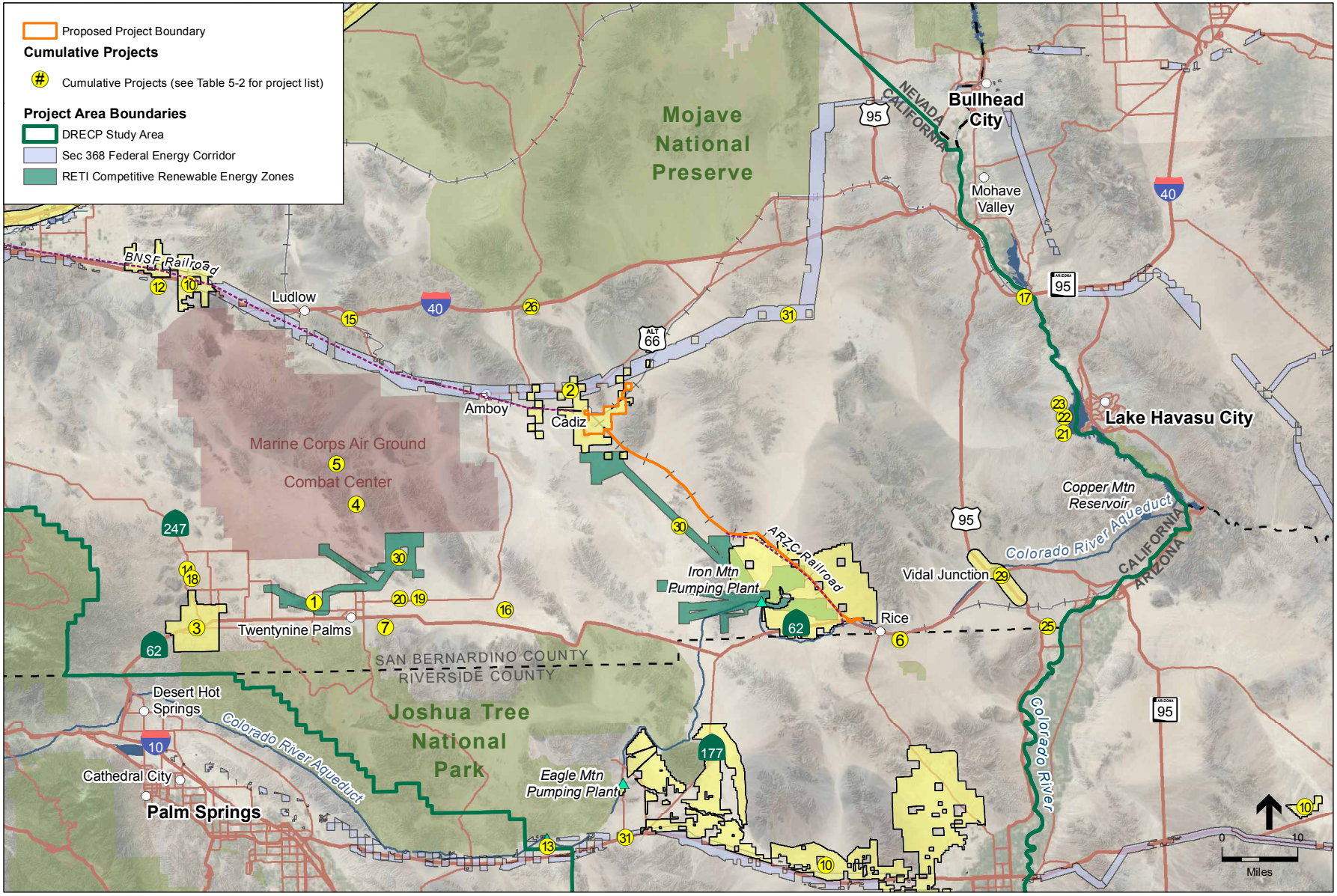
5.2 Projects, Plans, and Programs Relevant to the Project Region

Figure 5-1 shows the general location and **Table 5-2** on page 5-20 lists and briefly describes the past, present, and reasonably foreseeable future projects, plans, and programs (collectively referred to as "cumulative projects") that have the potential to contribute to cumulative impacts when considered together with the proposed Project. Figure 5-1 and Table 5-2 are located at the end of this subsection. The information in Table 5-2 was obtained from contact with San Bernardino and Riverside counties, review of City and County agency websites and available plans and environmental review documents, and correspondence with state and federal agencies and internet searches.

Six major land use and resource management plans associated with or affecting the Project region were reviewed for this cumulative effects analysis. These include the County of San Bernardino General Plan, four major renewable development energy plans or programs, and one open space / conservation plan. The four coordinated renewable energy development plans and programs have a federal and/or state mandate to identify or help identify suitable areas for renewable energy development and transmission corridors and/or streamline the review, approval, and permitting of renewable energy development projects in and around California's Mojave Desert region. They are included in this cumulative effects analysis because they cover the Project area and would, upon approval, limit, control, and/or direct renewable energy development in the Project vicinity. The open space / conservation plan, known as the CDPA of 2011, proposes to protect in perpetuity 1.6 million acres of federal lands. These plans and programs are described in detail in Section 5.2.1, Energy Plans and Programs, and Section 5.2.2, Open Space / Conservation Plans, below, and briefly summarized in Table 5-2.

Of the 21 entries in Table 5-2, two large (greater than 15 acres) land development projects (the Marine Corps Air Ground Combat Center Land Acquisition and Airspace Establishment Project (Marine Corps Base Expansion, Figure 5-1, Map #5) and the Rice Solar Energy Project (RSEP, Figure 5-1, Map #6)) and development associated with one of the large renewable energy programs (the Renewable Energy Transmission Initiative (RETI) (Figure 5-1, Map #30) have the greatest potential to result in environmental impacts that could compound or increase those associated with the proposed Project. About 524,000 acres of land within the geographic scope of this cumulative effects analysis could be affected by these four actions.

Table 5-2 includes several completed development projects, including the El Paso Line 1903 Pipeline Conversion Project (see Figure 5-1, Map #2) and the 29 Palms PV Project (Figure 5-1, Map #4). At least two other projects, Caltrans' SR-62/I-95 improvements project (Figure 5-1, Map #29) and the Twentynine Palms Mine Expansion (Figure 5-1, Map #7) will be completed well before the proposed Project begins construction. Operation and maintenance of these facilities are evaluated as part of this cumulative effects analysis. Other past, present, and ongoing future activities in the Project area, including periodic operation and maintenance of existing railroad facilities (BNSF and ARZC railroads) and utilities (electric transmission lines, natural



SOURCE: Bing Maps, 2011; ESRI, 2010; DeLorme, 2011; Cadiz Inc., 2011; and ESA, 2011

Cadiz Valley Water Conservation, Recovery, and Storage Project

Figure 5-1

Cumulative Projects

gas and oil pipelines, water conveyance facilities); agricultural and salt mining operations; limited community development; and open space/conservation, research, monitoring, and recreation activities on BLM lands, the Mojave National Preserve (approximately 30 miles north) and Joshua Tree National Park (approximately 30 miles south), are not listed in Table 5-2 but are discussed generally in this cumulative effects analysis, where applicable.

The other local land development, energy, infrastructure, and highway projects in Table 5-2 would have limited minor, resource-specific cumulative impact potential that would not be similar in magnitude to the proposed Project. These small- to moderate-sized projects are discussed in a consolidated manner, where applicable.

None of these projects would be located on Cadiz Property, although Cadiz Inc. has been approached by private renewable energy developers, conservation groups, and other entities interested in exploring the renewable energy development potential of the Cadiz Property. However, currently there are no other active development proposals, permit applications, or renewable energy projects proposed for the Cadiz Property.

5.2.1 Energy Plans and Programs

Nationally, interest in increasing energy efficiency, reducing dependence on fossil fuels, increasing domestic energy production, and curbing greenhouse gas emissions has led to a variety of federal mandates for renewable energy development, including the following:

- Executive Order (EO) 13212, Actions to Expedite Energy-Related Projects, in which the President ordered that executive departments and agencies "…take appropriate actions to expedite projects that will increase the production, transmission, or conservation of energy."
- Section 211, of the Energy Policy Act of 2005 (P.L. 109-58) which dictated that the Secretary of the Interior should, within 10 years of enactment of the Act, "…seek to have approved non-hydropower renewable energy projects located on the public lands with a generation capacity of at least 10,000 megawatts of electricity."
- The Energy Independence and Security Act of 2007 that required Department of Energy (DOE) to facilitate integration of utility-scale solar energy into regional electricity transmission system.
- EO 13514, which requires federal agencies to help advance local efforts for renewable energy development.
- Interior Secretary Ken Salazar's Secretarial Order No. 3285A1 (signed March 11, 2009 and amended in February 2010), which announced a policy goal of identifying and prioritizing specific locations on public lands that are best suited for large-scale production of solar energy and calls for establishing renewable energy zones and transmission infrastructure to facilitate renewable energy development.[1]

[1] California Energy Commission, *Desert Renewable Energy Conservation Plan Notice of Preparation*, July 2011.

- California's Renewable Portfolio Standards (RPS)[2] are among the most ambitious in the nation, and the State has long-established energy policies to promote renewable electricity generation. EO S-14-08 raised California's renewable energy goals to 33 percent by 2020.[3]

In response to EO S-14-08 and federal Secretarial Order 3285A1, the State of California and the DOI established the Renewable Energy Policy Group (REPG), consisting of members of the DOI, California Governor's office, and California Natural Resources Agency (with signatories including CDFG, CEC, BLM, and USFWS). The REPG is responsible for identifying areas most suitable for Renewable Energy Development Zones (REZs) and transmission corridors, as well as those most suitable for regional multispecies and habitat conservation and mitigation incentive options.[4] The Agencies are also initiating in-depth study of specific locations for production of solar energy.

To implement and track the progress of EO S-14-08, the CEC and the CDFG signed an MOU formalizing a Renewable Energy Action Team (REAT).[5] The REAT's primary mission is to streamline and accelerate the permitting processes for renewable energy projects, while contributing to the conservation of special-status species and natural communities at the ecosystem scale. Together, the CEC, CDFG, BLM, USFWS, and the National Fish and Wildlife Foundation established a financial account for monies paid in connection with mitigating impacts of renewable energy development projects, to be used for conservation, protection, enhancement, restoration, and adaptive management activities in the Mojave and Colorado Deserts of California.[6]

EO S-14-08 also mandated the development of the Desert Renewable Energy Conservation Plan (DRECP) for the Mojave and Colorado Desert regions, with the goal of reducing the time and uncertainty normally associated with licensing new renewable projects.[7] In response to hundreds of proposals[8] to develop renewable energy projects on BLM-administered lands in California, DOE, CEC, CDFG, USFWS, and BLM are devising an expedited application and permitting process for renewable energy development that will identify key renewable energy development areas, develop a BMP manual, and reduce the time and expense for developing renewable energy on federally-owned California lands by as much as half for projects sited in designated renewable energy development areas.[9] EO S-14-08 directs state agencies to minimize the environmental

2 A Renewable Portfolio Standard (RPS) is a regulation that requires the increased production of energy from renewable energy sources, such as wind, solar, biomass, and geothermal.
3 California Pulbic Utilities Commission, *California Renewables Portfolio Standard,* http://www.cpuc.ca.gov/PUC/energy/Renewables/index.htm, accessed August 2011.
4 MOU between the State of California and the Department of the Interior on Renewable Energy, October 12, 2009.
5 California Energy Commission, *Implementing the Renewable Energy Executive Order,* http://www.energy.ca.gov/33by2020/, accessed August 2011.
6 The Renewable Energy Action Team Mitigation Account Memorandum of Agreement between the Renewable Energy Action Team Agencies and the National Fish and Wildlife Foundation, May 2010.
7 California Energy Commission, *Implementing the Renwable Energy Executive Order,* http://www.energy.ca.gov/33by2020/, accessed August 2011.
8 National Public Radio, *California Desert Becomes Home for Renewable Energy,* http://www.npr.org/templates/story/story.php?storyId=102679730, accessed August 2011.
9 California Energy Commission, *Implementing the Renewable Energy Executive Order,* http://www.energy.ca.gov/33by2020/, accessed August 2011.

impacts of this development, and when complete, the DRECP will provide the regulatory framework necessary to support investment in renewable energy resources and related transmission, while ensuring effective protection and conservation of the State's wildlife, plants, and natural communities.

As part of the DRECP, the California Renewable Energy Permit Team (REPT) was established to facilitate coordination between agencies to develop guidelines for siting, developing, permitting, and constructing qualified RPS projects in the Mojave and Colorado Desert regions while enhancing and maximizing environmental protections. REPT goals and objectives are to cooperate in developing BLM's Solar Energy Development Program, develop a multispecies conservation strategy (the DRECP) to facilitate and streamline compliance with all applicable State and federal laws, develop BMPs and interim guidelines to assist in siting projects in suitable locations, and to minimize environmental impacts by guiding development and construction of qualified RPS projects pending completion of the DRECP. The REPG is also required to participate in the DRECP and to work with the Solar PEIS and RETI efforts.

This cumulative effects analysis addresses the potential for several significant, interrelated regional plans and programs addressing land use, energy development and open space / conservation to result in environmental effects that could compound or increase those associated with the proposed Project. Five regional plans and programs are evaluated: the West-Wide Energy Corridor Program (West-wide Program; #31), BLM's Solar Energy Development Program (Solar Program, #10), the Renewable Energy Transmission Initiative (RETI, #30), the California Desert Renewable Energy Conservation Plan (DRECP, #9), and the California Desert Protection Act of 2011 (CDPA, #11). Each of these plans and programs is described below and summarized in **Table 5-2**:

- **West-wide Energy Corridor Program – Section 368 Federal Energy Corridors** (Figure 5-1 and Table 5-2, #31)**.** Section 368 of the Energy Policy Act of 2005 (the Act), Public Law 109-58 (H.R. 6), enacted August 8, 2005, directs the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to designate under their respective authorities corridors on federal land in 11 Western States (Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming) for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities (energy corridors). In response, the Agencies conducted a detailed programmatic environmental analysis and prepared the West-wide Energy Corridor PEIS that examined the long-term needs of increased energy infrastructure in the West and evaluated potential impacts associated with the designation of these multi-modal energy corridors. The proposed designation of more than 6,000 miles of Section 368 energy corridors among the various Agency land use plans would not result in any direct impacts on the ground that may significantly affect the quality of the human environment. One 368 Federal Energy Corridor crosses the Project vicinity to the north, along Old US 66, and another is located about 30 miles south of the Project site, along the I-10 corridor.

- **Renewable Energy Transmission Initiative (RETI) / Competitive Renewable Energy Zones (CREZs)**[10] (Figure 5-1 and Table 5-2, #30). The State of California, through the California Energy Commission, is identifying key linkages throughout the State to tie the existing and potential new transmission lines to the most promising energy sites with the least environmental impacts. Phases 1 and 2 of the RETI resulted in the identification of CREZs, focusing on already-disturbed or less-sensitive lands close to existing or planned transmission systems, which are areas that hold the greatest potential for cost-effective and environmentally responsibly renewable development.[11] Land use, water use, and other environmental considerations, including the following factors, were considered during the CREZ identification process: proximity to existing infrastructure and highways; availability of wastewater resources for cooling and cleaning; previously disturbed sites; contaminated sites (agricultural or industrial); minimizing impacts to sensitive areas (Category 1 and Category 2 lands); efficiency of the production of electricity; output per acre; capability of accommodating more than one source of power; minimization of impacts on scenic resources; biological resources (species richness/diversity and number/type of onsite habitat types).
- Of the 32 RETI CREZs in California, two are located in the Project vicinity: the Twentynine Palms CREZ and the Iron Mountain CREZ. The Iron Mountain CREZ lies parallel to and overlaps slightly with the Project area along the ARZC ROW and near the CRA tie-in. The Iron Mountain CREZ has an estimated capacity of 4,800 MW solar thermal and 62 MW wind, for a total 4,862 MW, and it ranked 32 of 32 (last) in terms of affordability (average weighted cost per MW). The proposed Twentynine Palms CREZ is located about 25 miles west of the Project site and has an estimated capacity of 1,805 MW solar thermal. The Twentynine Palms CREZ ranked 17 of 32 (with 1 being best) in affordability. Currently, there are 6 solar projects or proposals in the Twentynine Palms CREZ (SEPV2, SEPV8, SEPV9, 29 Palms PV, Wonder Valley PV, and Cascade Solar).[12]
- **BLM's Solar Energy Development Program** (Figure 5-1 and Table 5-2, #10)**.**[13] The BLM is developing a new Solar Program in six western States (Arizona, California, Colorado, New Mexico, Nevada, and Utah). BLM prepared a Draft PEIS for the Solar Program that evaluates a no action alternative and two action alternatives—the Solar Energy Development Program Alternative and the Solar Energy Zone (SEZ) Program Alternative. Under the no action alternative, only BLM-administered lands currently prohibited from development by law, regulation, Presidential proclamation or Executive Order (e.g., lands in the National Landscape Conservation System) would be excluded from development. Under the Solar Energy Development Program Alternative, the preferred alternative, additional lands would be excluded, including lands that (1) have slopes greater than or equal to 5 percent, (2) have solar insolation levels below 6.5

10 California Energy Commission, *Renewable Energy Transmission Initiative Phase 2B Final Report*, May 2010.
11 Bureau of Land Management, *Energy Policy Act of 2005, Section 211*, August 2005.
12 California Energy Commission, *Renewable Energy Action Team Generation Tracking Projects, California Desert Protection Act of 2011 and Draft Proposed Competitive Renewable Energy Zones*, October 2011.
13 U.S. Department of Interior, Bureau of Land Management and U.S. Department of Energy, *Draft Environmental Impact State on Solar Energy Development in Six Southwestern States*, December 2010.

kWh/m2/day, and (3) have known resources, resource uses, or special designations identified in local land use plans that are incompatible with solar energy development. A subset of the lands that would be available for ROW application under the Solar Energy Development Program Alternative would be identified as SEZs (i.e., areas with few impediments to utility-scale production of solar energy where the BLM would prioritize solar energy and associated transmission infrastructure development). Under the Solar Energy Development Program Alternative, 22 million acres of BLM land would be opened to solar development.

The SEZ Program Alternative would focus solar development on 676,000 acres of SEZs; only the lands within the proposed SEZs would be available for ROW application. In California, approximately 11,067,366 acres of land would be available for ROW application under the no action alternative, and 1,766,543 acres of land would be available under the Solar Energy Development Program Alternative.

The SEZs would provide directed, landscape-scale planning for future solar projects and allow for a more efficient permitting and siting process. The BLM identified 24 SEZs based on criteria including quality of solar resources, suitable slope, proximity to roads and transmission, acreage, and the conservation value of the land. Four SEZs were identified in California: Imperial East (5,722 acres), Iron Mountain (106,522 acres), Pisgah (23,950 acres), and Riverside East (202,896 acres). The Iron Mountain SEZ was the one SEZ proposed within proximity to the Project. It was to be located on BLM-administered land in Ward Valley adjacent to and overlapping parts of the Project's proposed conveyance pipeline route and CRA tie-in facility. However, in October 2011, BLM issued a Supplement to the Draft Solar PEIR that revised the proposed plan, and modified the preferred alternative to reflect only 17 remaining solar energy zones totaling about 285,000 acres for development.[14] Zones that had development constraints or serious resource concerns were refined or removed. The Iron Mountain SEZ was one of the zones eliminated from further consideration. Thus, energy development in this particular zone, which might have occurred in proximity to the Project and potentially contribute to cumulative effects, is no longer proposed.

- **DRECP** (Figure 5-1 and Table 5-2, #9). As described above, ES S-14-08 mandated the development of the DRECP and established the REAT to oversee the implementation of the DRECP, consisting of the CEC, CDFG, BLM, and the USFWS. Other participating agencies include the CPUC, California Independent System Operator, NPS, USEPA, and the Department of Defense. The DRECP is intended to advance state and federal conservation goals while facilitating and streamlining the review, approval, and timely permitting of renewable energy projects within California's desert regions. Projects will include large-scale solar thermal, solar PV, wind, and other forms of renewable energy, and associated infrastructure such as electric transmission lines. The planning goals of the DRECP include the following:

[14] U.S. Department of Interior, Bureau of Land Management and U.S. Department of Energy, *Supplement to Draft Environmental Impact State on Solar Energy Development in Six Southwestern States*, October 2011.

a. Build on the Competitive Renewable Energy Zones identified by RETI;

b. Further identify the most appropriate locations within the DRECP Planning Area for the development of utility-scale renewable energy projects;

c. Provide a means to implement Covered Activities in a manner that complies with the Natural Communities Conservation Planning Act (NCCPA), FESA, CESA, NEPA, CEQA, and other relevant laws;

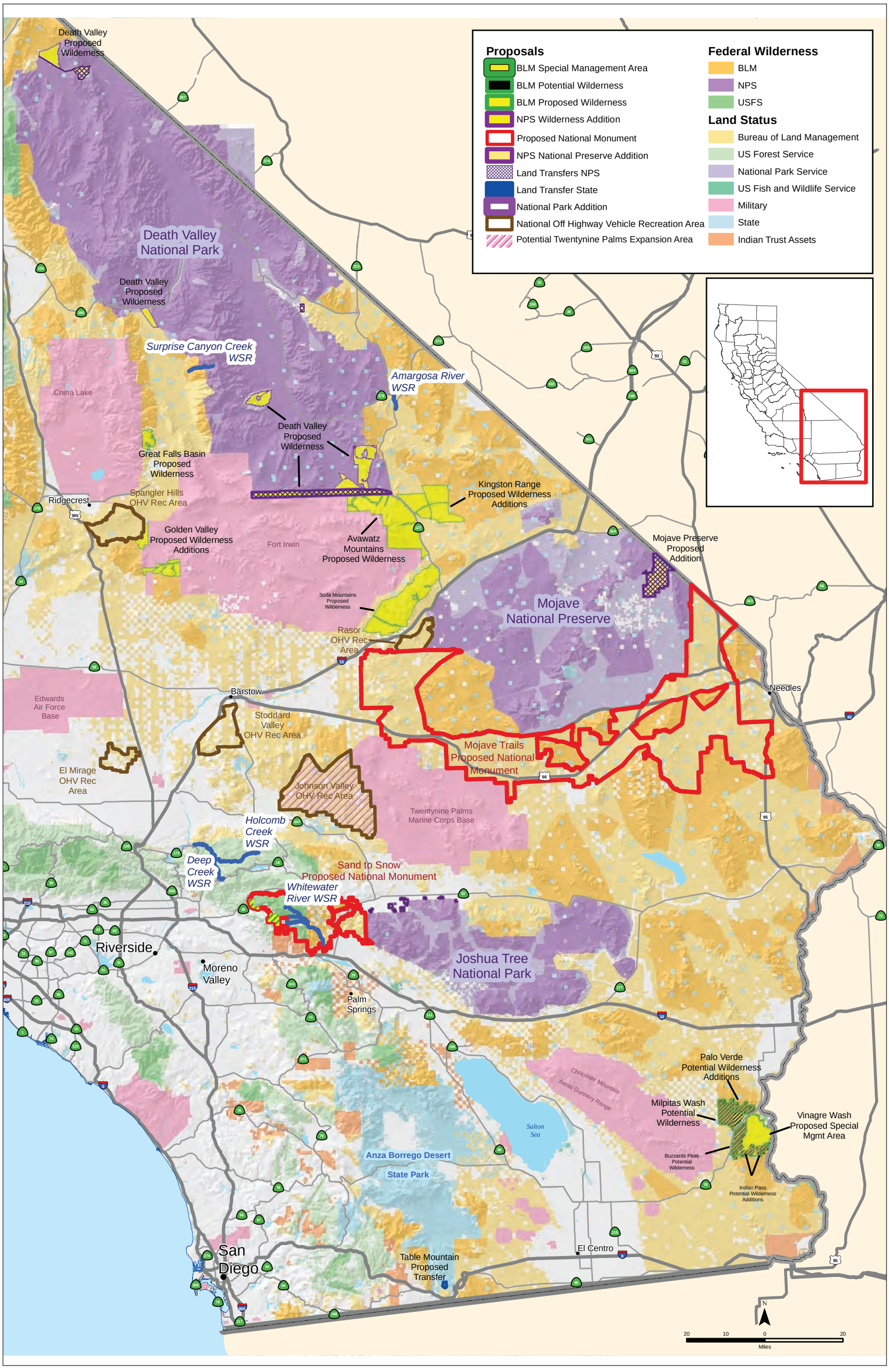
d. Provide a framework for a more efficient process by which proposed renewable energy projects within the Planning Area may obtain regulatory authorizations and which results in greater conservation values than a project-by-project, species-by-species review; and

e. Identify and incorporate climate change adaptation research, management objectives, and/or policies into the final plan document.

The DRECP is an HCP/NCCP that is intended to resolve conflicts between threatened and endangered species and renewable energy development by allowing solar and other qualified RPS energy development in a manner that avoids or minimizes environmental impacts. "Covered Species" in the DRECP are those species for which conservation actions will be implemented and for which the participating entities will seek authorization for take under the NCCP Act and Section 10 of the FESA. Initial analysis resulted in the following list of covered species: Mojave monkeyflower, Arroyo toad, desert tortoise, burrowing owl, Swainson's hawk, Mohave ground squirrel, and bighorn sheep. The list of proposed Covered Species will continue to be evaluated and revised throughout development of the DRECP. Currently the REAT is preparing the joint EIR/EIS for the DRECP. The goal is to complete the DRECP in 2.5 years; by June 1, 2012, the final DRECP should provide binding, long-term endangered species permit assurances, facilitate the Mojave and Colorado Desert project approval process, and provide a vehicle for federal and state conservation funding to implement the DRECP.

5.2.2 Open Space / Conservation Plans

Introduced by Senator Dianne Feinstein (D-CA) in January 2011, the proposed California Desert Protection Act of 2011 (CDPA) (S.138) (**Figure 5-2** and Table 5-2, #11) would preserve approximately 1.6 million acres of public lands, create two new National Monuments, expand Joshua Tree and Death Valley National Parks and the Mojave National Preserve, and establish new wilderness areas and wild and scenic river segments throughout Southern California. The bill would also preserve historic trails, Native American cultural areas, and portions of Old US 66. The CDPA seeks to protect designated lands in order to focus, guide, and mitigate renewable energy development projects on already-disturbed or private lands, preserve habitat for rare and sensitive species, and balance recreational opportunities in the California desert. If enacted, the CDPA would establish the following:



SOURCE: BLM, 1/27/2011

Cadiz Valley Water Conservation, Recovery, and Storage Project

Figure 5-2

Proposed California Desert Protection Act of 2011

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- The Mojave Trails National Monument (approximately 941,413 acres), which would link Joshua Tree National Park with Mojave National Preserve and 13 wilderness areas with a 941,413 acre monument. The National Monument status would protect existing land uses, including Old US 66, and would improve existing wildlife corridors. The proposed National Monument aims to direct renewable energy development away from pristine public lands and onto consolidated federal Solar Energy Study Areas and along existing transmission lines. A portion of the proposed Monument is adjacent to the northern border of the proposed Project.
- The Sand to Snow National Monument (approximately 133,524 acres) between Joshua Tree National Park on the east and the San Gorgonio Wilderness in the San Bernardino National Forest to the west. Access points would be from SR-38, SR-62, and I-10. The proposed Monument contains two of the most critical wildlife movement corridors in southern California, would link Joshua Tree National Park to the Santa Rosa and San Jacinto Mountains National Monument, and is located at a unique convergence point between the Mojave and Sonoran deserts, Inland Valleys, and mountain environments, creating a potential evolutionary hotspot and area of tremendous biological diversity. The proposed Sand to Snow National Monument is located about 100 miles southwest of the project site.

Among many other activities, the CDPA would enlarge Joshua Tree National Park by approximately 2,900 acres along the northern boundary, between Yucca Valley and Twentynine Palms. The expansion area includes prime habitat for the desert tortoise and burrowing owl, wildlife connectivity corridors for bobcats and bighorn sheep, and excellent habitat for LeConte's thrasher, a CDFG species of special concern. The proposed CDPA would also enlarge Death Valley National Park by approximately 40,740 acres; enlarge four existing wilderness areas by 172,247 acres, including the Death Valley National Park Wilderness (90,152 acres), Golden Valley Wilderness (21,633 acres), Kingston Range Wilderness (53,321 acres) and San Gorgonio Wilderness (7,141 acres); and add three areas encompassing 173,861 acres to the National Wilderness Preservation System, including the Avawatz Mountains Wilderness (86,614 acres), Great Falls Basin Wilderness (7,871 acres) and Soda Mountains Wilderness (79,376 acres).

TABLE 5-2
PLANS, PROGRAMS, AND PROJECTS EVALUATED IN THE CUMULATIVE EFFECTS ANALYSIS

Table ID.	Map No.	Project Name	Nature of Project /Description	Relationship to and Distance from Project Area	Status	Areas of Potential Cumulative Effect
GENERAL PLANS						
A	**--**	County of San Bernardino General Plan	Guides land use and planning in the County and future development; facilitates economic development; enhances neighborhoods and commercial areas; and ensures adequate infrastructure, services and facilities are present to support projected growth. The Project is exempt from County zoning ordinances and no CUP is required because facilities "related" to water receive qualified immunity, subject to confirmation by SMWD at a public hearing (Gov. Code § 53096(b)). The General Plan EIR[15] requires projects in the Desert Region to mitigate impacts on biological resources to less than significant in order to obtain permits. The General Plan policies are considered provisionally to assess Project consistency.	The Project area is in the Desert Region within unincorporated portions of San Bernardino County zoned for resource conservation (RC) and agriculture (AG).	The General Plan was adopted March 13, 2007. A draft supplement amendment, the Greenhouse Gas Reduction Plan[16] was prepared in March 2011.	Aesthetics, Agriculture, Air Quality, Biological Resources, Fire Hazard, and Traffic. Project would not conflict with General Plan goals or policies, preclude continued agricultural use, or prevent agricultural expansion into adjacent AG-zoned lands to the west. Regional development would have construction and operational impacts on scenic resources, AG conversion, air quality, biological resources, fire hazards, and traffic.
B	3	Yucca Valley General Plan Update / SR-62 Realignment	The Town of Yucca Valley is updating their General Plan,[17] which will, among other things, evaluate traffic and circulation alternatives for re-routing SR-62 around the Old Town planning area. The General Plan Update process will be coordinated with other agencies, including Riverside County and Caltrans.	The Town of Yucca Valley is approximately 50 miles west of the Project area. Vehicles would use SR-62 to access Project site.	The General Plan Update process began in 2011 and is expected to take 2 years. Certification of the EIR is anticipated to occur in 2013.	Traffic. SR-62 is the primary transportation corridor in the region, connecting the Morongo Basin, Town of Yucca Valley, community of Joshua Tree, and Twentynine Palms to the I-10 and Riverside County.
ENERGY PROJECTS, PLANS, and PROGRAMS						
C	30	Renewable Energy Transmission Initiative (RETI) / Competitive Renewable Energy Zones (CREZs)	Statewide initiative to identify, designate, and facilitate the permitting and development of renewable energy and associated transmission projects. 32 Competitive Renewable Energy Zones (CREZs) have been identified in California: areas that can be developed in a cost effective and environmentally benign, responsible manner. There are 2 CREZs in the Project vicinity: the Twentynine Palms CREZ and Iron Mountain CREZ (Black & Veatch, 2010).[18] Iron Mountain ranks last and Twentynine Palms ranks 17 of 32 in affordability.	The Iron Mountain CREZ (~40,000 acres) lies parallel to and overlaps slightly with the Project area along the ARZC ROW, near the CRA tie-in. The Twentynine Palms CREZ (~18,256 acres) is 25 miles west.	Transmission segments and CREZs have been identified and detailed environmental and cost assessments have been conducted[19]. There is one pending application in the Iron Mountain CREZ and 6 solar projects in the Twentynine Palms CREZ.[20]	Aesthetics, Air Quality, Biological and Cultural Resources, GHG, Noise, Transportation, Utilities. Typical construction and operation impacts associated with up to 4,800 MW solar thermal and 62 MW wind, for a total 4,862 MW within Iron Mountain CREZ and up to 1,805 MW solar thermal at Twentynine Palms CREZ.

15 County of San Bernardino, *San Bernardino County 2006 General Plan Program Draft Program Environmental Impact Report*, September 2006, pages I-3 through I-26.
16 Pacific Municipal Consultants, *General Plan Amendment and Greenhouse Gas Reduction Plan, Draft Supplemental Program Environmental Impact Report*, March 2011.
17 Town of Yucca Valley, *General Plan*, March 2011.
18 California Energy Commission, *Renewable Energy Transmission Initiative Phase 2B Maps*, July 2010.
19 California Energy Commission, *Renewable Energy Transmission Initiative Phase 2B Final Report*, May, 2010.

Table ID.	Map No.	Project Name	Nature of Project /Description	Relationship to and Distance from Project Area	Status	Areas of Potential Cumulative Effect
D	9	California Desert Renewable Energy Conservation Plan (DRECP)	DRECP[21] will be an NCCP that facilitates and streamlines the approval and permitting of renewable energy projects in the Desert Region and serves as the basis for one or more HCPs under FESA. Projects will include large-scale solar thermal, solar PV, wind, and associated infrastructure / transmission. Covered species include Mojave monkeyflower, Arroyo toad, desert tortoise, burrowing owl, Swainson's hawk, Mojave ground squirrel, and bighorn sheep. Goal is to complete the DRECP by 6-1-12.	Covers the Project area (Figure 5-1); will apply to renewable energy projects in the Planning Area.[22] Six REAT Solar Projects located 31 miles and 42 miles west of the Project site, respectively.	The Best Management Practices and Guidance Manual and the DRECP Framework Conservation Strategy and starting point maps are complete. Currently the REAT is preparing the joint EIR/EIS for the DRECP.	Biological Resources. The final DRECP will provide binding, long-term endangered species permit assurances and facilitate the project approval process for renewable energy projects in the Planning Area, including projects within the nearby CREZs and SEZ and associated transmission corridors.
E	**31**	West-wide Energy Corridor Program	Federal directive to designate corridors[23] on federal land for oil, gas and hydrogen pipelines and electricity transmission and distribution facilities (energy corridors). Of the 6,000 miles of Federal 368 Energy Corridors designated across 11 States, two 368 Energy Corridors are located in the Project vicinity, along Old US 66 and I-10, respectively. The Corridor nearest the Project site extends from Barstow to the Nevada border, following I-40 and Old US 66 northwest of the Project site. Northeast of the Project site, the alignment veers directly north and travels along / adjacent to (but outside of) the Mojave National Preserve before heading east into Nevada[24].	One 368 Federal Energy Corridor traverses the northernmost portion of the Project area, intersecting the proposed wellfield and spreading basin areas along Old US 66. A second corridor is located 30 miles south of the Project site along the I-10.	Agency-specific RODs were issued by both the BLM and the U.S. Forest Service on January 14, 2009. An evaluation of site-specific impacts at the local project level will occur in the event that a project proposal is submitted for consideration.	Aesthetics, Air Quality, Biological and Cultural Resources, GHG, Noise, Transportation, Utilities. Typical construction and operation impacts associated with transmission corridor projects north and south of the Project site.
F	**10**	BLM Solar Energy Development Program	BLM is evaluating utility-scale solar energy development in Arizona, California, Colorado, Nevada, New Mexico, and Utah. The Draft Solar PEIS[25] analyzes a no action alternative, the Solar Energy Development Program Alternative under which 22 million acres of BLM land would be opened to solar development, and the SEZ Program Alternative that would focus solar development on 676,000 acres of SEZs. The BLM identified 24 SEZs, four in California. The proposed Iron Mountain SEZ, located on BLM-administered land in Ward Valley, was the closest SEZ to the project area and would have overlapped with the area proposed for the Project conveyance pipeline and the CRA tie-in facility. However, the Iron Mountain Sez was eliminated from further consideration as part of a revised program	The Iron Mountain SEZ (106,522 acres) was located immediately adjacent to and overlapping the proposed Project area along the ARZC ROW and near the CRA tie-in. The proposed SEZ surrounded several Cadiz parcels. This SEZ has been eliminated from further consideration	On October 27, 2011, BLM issued a Supplement to the Draft Solar PEIS to update the proposed program. As part of the update, the Iron Mountain Sez (among others) was eliminated from further consideration.	Because the Iron Mountain SEZ has been eliminated from further consideration, energy development previously anticipated and described in the BLM Solar PEIS is no longer anticipated. Therefore no cumulative effects are analyzed for this program.

20 California Energy Commission, *Current Renewable Energy Transmission Initiative Projects*, August 2011.
21 Desert Renewable Energy Conservation Plan, http://www.drecp.org/, accessed September 2011.
22 Desert Renewable Energy Conservation Plan, *Boundary Area Map*, February 2011.
23 Argonne National Laboratory, *Proposed Section 368 Energy Corridors*, November 2008.
24 Argonne National Laboratory, *Visual Resources Analysis Map Series*, 2008.
25 Solar PEIR, http://solareis.anl.gov/maps, accessed September 2011.

Table ID.	Map No.	Project Name	Nature of Project /Description	Relationship to and Distance from Project Area	Status	Areas of Potential Cumulative Effect
			proposal released by the DOE and BLM in October 2011. As a result, no cumulative effects associated with the BLM program would occur.			
G	**1**	SEPV2 Solar PV Electricity Generation Facility	SEPV2, LLC/Solar Electric Solutions, LLC (SEPV2) would establish a 2 MW photovoltaic (PV) solar electricity generation facility on a 20-acre parcel. The site will house all structures, including solar panels, tracking/support structures, and interconnection facilities, all of which will be enclosed by a perimeter chain-link fence. The project would provide enough power for approximately 900 average-sized homes. Electricity would be collected and transported to the grid via an overhead connection to an existing 25 kV SCE line adjacent the project site. The project would be constructed over a four-month period by 12 workers per day. Construction would be completed by the third quarter of 2011.	SEPV2 is 42 miles west of the Project area and located in Twentynine Palms, CA (southwest corner of Lear Avenue and Cove View Road).	The Notice of Availability for an Initial Study was published on January 10, 2011. The San Bernardino County Land Use Services Department intends to adopt a Mitigated Negative Declaration for the project.[26]	Air Quality, Biological Resources, GHG, Transportation. Typical construction and operation impacts associated with development. Cumulative impacts to desert tortoise. Vehicles would likely utilize SR-62.
H	**4**	29 Palms PV Project	Independent Energy Solutions, Inc. (IES) constructed a 213 kW (dc) solar electric (photovoltaic) carport / shade structure installation at the Marine Corps Air Ground Combat Center in Twentynine Palms. The system can generate about 312,000 kW-h of electricity annually while providing shade and cover for parked cars. It produces enough electricity to power 28 average single-family homes and will offset about 405,000 pounds of greenhouse gases annually – the environmental equivalent of taking 52 cars off the road[27].	29 Palms PV is 31 miles west of the Project area.	On July 22, 2011, IES announced completion and "powering-up" of the project.	Biological Resources, Transportation. Cumulative impacts to desert tortoise. Trucks would likely utilize SR-62.
I	**24**	SECP Development Company	Conditional Use Permit to establish a 100 MW solar PV power generating facility on 560 acres[28].	SECP is 16 miles west of the Project area (APN 0592-251-01-0000).	Conditionally Approved	Transportation. Trucks would utilize SR-62.

[26] County of San Bernardino, *Land Use Services Projects*, http://www.sbcounty.gov/landuseservices/Public%20Notices/Projects/Projects.htm, accessed September 2011.
[27] PR Newswire, *29 Palms PV Project Press Release*, http://www.prnewswire.com/news-releases/independent-energy-solutions-powers-up-new-us-marine-corps-solar-project-in-29-palms-126215078.html, accessed September 2011.
[28] County of San Bernardino Planning Department, *Accepted Application APN 0592-251-01-0000*, October 2010.

Table ID.	Map No.	Project Name	Nature of Project /Description	Relationship to and Distance from Project Area	Status	Areas of Potential Cumulative Effect
J	6	Rice Solar Energy Project (RSEP)	RSEP[29] proposes a 150 MW power tower facility in eastern Riverside County. The facility would use concentrating solar power (CSP) technology, with a central receiver tower and an integrated thermal storage system. The proposed technology generates power from sunlight by focusing energy from a field of sun-tracking mirrors called heliostats onto a central receiver. The proposed 2011 to 2013 (30-month) construction period would require 780 AFY of water. Process water requirements for facility operations, commencing by the end of 2013, would be up to 180 AFY, assuming an operating capacity factor of 37 percent.	1,410 acres of a privately-owned 2,560-acre parcel in eastern Riverside County, 6 miles southeast of the Project area, south of SR-62.	RSEP was approved on 12/15/2010.[30]	Aesthetics, Air Quality, Biological and Cultural Resources, GHG, Noise, Transportation, Utilities. Typical construction and operation impacts associated with 150 MW facility. Site access would be via SR-62. Propane would be used for auxiliary heating. The workforce would average 280 construction workers and 47 full-time staff, mostly locals (CEC 2009).
OPEN SPACE / CONSERVATION PLANS						
K	11	California Desert Protection Act (CDPA) of 2011	If approved, the CDPA[31] would create two new National Monuments, expand Joshua Tree and Death Valley National Parks and the Mojave National Preserve, and establish new wilderness areas throughout Southern California. The Bill would preserve about 1.6 million acres of public lands, including historic trails, Native American cultural areas, and portions of Old US 66. The Mojave Trails National Monument [32] would link Mojave National Preserve and 13 wilderness areas with the 941,413 acre monument and direct renewable energy development away from pristine public lands and towards federal Solar Energy Program Areas.	Figure 5-2 depicts the proposed spreading basin area for the Phase 2 Imported Water Storage Component would overlap slightly with the southernmost portion of the proposed Mojave Trails National Monument.	Senator Feinstein reintroduced CDPA 2011, S.138 on January 25, 2011. and the Bill was referred to the Senate Energy & Natural Resources Committee. No action has been taken in Committee as of September 2011.	Aesthetics, Air Quality, GHG, Biological and Cultural Resources, Land Use. Protections placed on large swaths of land in the Project area would render them undevelopable and thereby protect aesthetic, biological, and cultural resources in these areas.
DEVELOPMENT AND INFRASTRUCTURE PROJECTS						
L	5	Marine Corps Base Expansion[33]: Land Acquisition and Airspace Establishment to Support	The Marine Corps is studying alternatives for a large-scale training facility that would accommodate a new program of sustained, combined-arms, live-fire, and maneuver training for a Marine Expeditionary Brigade-sized Marine Air Ground Task Force. The project would expand the existing air and ground operating areas at the Combat Center to establish the required sized facility for the training. Three major components include acquisition of land next to the existing Combat Center, modification and establishment of special use	Current Base boundary is 12 miles west of Project area. One of the land acquisition alternatives (Alternative 3) overlaps substantially with the Project area and, if chosen, would render the Project	The Final EIS is scheduled for release in December 2011. The Department of the Navy plans to issue an ROD in April 2012.	Air Quality, Biological Resources, GHG, Land Use, Transportation. Depending on the alternative, potential take of 19 to 725 desert tortoise and impacts on up to 130,000 acres of desert tortoise habitat. Acquisition of up to 200,000 acres would close two active mines and conflict with AG zoning on the Project site. From 6,

29 Rice Solar Energy Project, http://ricesolarenergy.com, accessed June 2011.
30 California Energy Commission, *Rice Solar Energy Project*, http://www.energy.ca.gov/sitingcases/ricesolar/index.html, accessed May 2011.
31 Campaign for the California Desert, http://www.californiadesert.org/, accessed September 2011.
32 Campaign for the California Desert, *Mojave Trails National Monument*, http://www.californiadesert.org/places/mojave_trails_national_monument, accessed September 2011.
33 U.S. Marine Corps, Twentynine Palms Marine Corps, *Land Acquisition and Air Space Establishment Study Updates,* http://www.marines.mil/unit/29palms/LAS/pages/updates.aspx, accessed July 2011.

Table ID.	Map No.	Project Name	Nature of Project /Description	Relationship to and Distance from Project Area	Status	Areas of Potential Cumulative Effect
		Large-Scale Marine Air Ground Task Force Live Fire and Maneuver Training	airspace, and expanded training. Nearly 20,000 public comments have helped to develop a range of reasonable alternatives to meet MEB training requirements, including an "Alternative 6", the DEIS preferred alternative. Alternative 6 would accommodate continued public access to 40,000 acres in the West Study Area. Alternative 3 proposes to add approximately 22,000 acres of land to the South and approximately 177,000 acres to the East of the 29 Palms Base.	infeasible (this Alternative has not been selected as the preferred alternative in the PEIS). The proposed land acquisition areas total 380,000 acres.		000-10,000 Marines (up to 12,000) would arrive via bus (~200 buses) over ~10 days via SR-62, with up to 200 buses arriving same day. In addition, up to 40 instructor vehicles would travel on SR-62 up to 30 days annually.
M	**7**	Twentynine Palms Mine Expansion	Granite Construction Company proposes a Conditional Use Permit (CUP) and Reclamation Plan, Development Agreement, and General Plan Amendment/Zone Change [from RL 2.5(Rural Living) to CI (Community Industrial)] for a 356-acre mine expansion at an existing 113.5-acre mine site (for operations through 2092). 178 acres would be mined, with the remaining 178 acres set aside for habitat conservation. Current operations distribute sand, gravel asphalt and ready-mix concrete throughout the region; expanding the Mine would allow Granite to continue to meet these needs.[34]	The expansion area is located 36 miles west of the Project area on 7451 Mojave Road; 1 mile south of SR-62 in Twentynine Palms.	On March 24, 2011, the Twentynine Palms City Council, Center for Biological Diversity, Desert Tortoise Council and Granite Construction agreed to reduce the construction footprint from 178 acres to ~15 acres. Granite must seek Federal and State approval to expand beyond 15 acres.	Biological (desert tortoise, burrowing owl), GHG, Transportation. Trucks would utilize SR-62. Impacts to desert tortoise would contribute to cumulative impacts to the species.
N	**8**	Desert Xpress High-speed Passenger Train Project	DesertXpress proposes a fully grade-separated, double-track passenger-only railroad along an approximately 200-mile corridor between Victorville, California and Las Vegas, Nevada. The project would bring 35,000 jobs to Clark County and several thousand more jobs to southern California once the project begins.	At its nearest point, the project is located 57 miles northwest of the Project area.	The FRA issued the ROD on July 8, 2011.[35] The company aims to break ground before the end of 2012. [36]	Air Quality, Biological Resources, GHG, Transportation. Trucks would utilize I-40, Old US 66, I-95, and SR-62. Cumulative impacts to desert tortoise.
O	**29**	Caltrans Improvements on I-95 / SR-62	Caltrans contracted with Granite Construction Company, Inc. for cold in-place recycling, overlay with HMA (type A), and shoulder backing services from Vidal 1.2 miles west on Blythe / Rice Road to 3.8 miles west of the I-95/SR-62 separation[37]. Granite is responsible for a stormwater pollution prevention plan (SWPPP) that is required for the project.	The project is 17 miles east of the Project area, along SR-62.	Caltrans awarded the contract on May 27, 2011 and the work is anticipated to be completed by June 14, 2011.	Transportation. Improved road conditions following construction.

[34] KCDZ FM, http://www.kcdzfm.com/news/fullstory032411.html, accessed July 2011.
[35] U.S. Department of Transportation Federal Railroad Administration, *Record of Decision, DesertXpress High-Speed Passenger Train*, July 2011.
[36] Federal Railroad Administration, *DesertXpress – Las Vegas to Victorville*, http://www.fra.dot.gov/rpd/freight/1703.shtml, accessed July 2011.
[37] State of California Department of Transportation, *Statement of Ongoing Contracts as of 06/20/11*, June 2011.

Table ID.	Map No.	Project Name	Nature of Project /Description	Relationship to and Distance from Project Area	Status	Areas of Potential Cumulative Effect
P	**2**	Wilson, James W – Recreational Vehicle Park.	A conditional use permit to establish a 7.33-acre RV park / campground consisting of 27 spaces for RVs, a 532-SF residence with a 361-SF carport, a 324-square foot caretaker's residence, a 239-SF building with a 400-SF covered patio to be used as a convenience store and snack bar, a 180-SF storage building, a 50-SF storage building and a 450-SF carport on 7.33 acres. The site is regulated by the Biological Resources and Paleontological Resources Overlays.	The Vehicle Park is located 2 miles northeast of the Project area in Cadiz, California, on the south side of Old US 66 and approximately 1,200 feet west of Cadiz Road.	The San Bernardino County Land Use Services Department completed an Initial Study and adopted a Mitigated Negative Declaration[38].	Air Quality, Biological Resources (burrowing owl), Cultural Resources, GHG, and Transportation (Old US 66). Typical construction impacts associated with development. Operational impacts on Old US 66.
Q	**2**	Natural Gas Line 1903 Pipeline Conversion Project	The Line 1903 project converted the 304-mile crude oil All American Pipeline pipeline to natural gas service[39]. As part of the conversion, a lateral extension was constructed in Cadiz to connect Line 1903 tothe existing Mojave Natural Gas Pipeline (Line 1900).	304 miles of pipeline from Ehrenberg, Arizona to Wheeler Ridge near Bakersfield. The Cadiz lateral pipeline and facilities are located on private land and BLM lands. Some portions of the pipeline that was converted is at the Project area.	The Finalizing Addendum to the EIR was certified on April 26, 2005, by the California State Lands Commission. A portion of the pipeline was converted in 2005-2006 and mitigation monitoring was completed in 2006. A large portion of pipeline around Tehachapi was not completed.	Utilities. Coordination with existing utilities is required to avoid impacts to underground lines.
R	**16, 19, 20**	Minor Subdivisions	Proposed subdivision of a parcel or parcels of land shown as a unit under a common ownership, and that is proposed for subdivision for the purpose of sale, lease, financing, or other conveyance, into two, three or four lots, parts or parcels and a remainder parcel. The following proposals are under consideration: • Bryan Case - Minor subdivision to create two parcels on 1,840 acres. APN 0592-251-01-0000. Accepted.[40] • Galstian, Andranik Eddie. Tentative Parcel Map 19157 to create four parcels on approximately 157 acres. APN 0626-131-07-0000. Accepted.[41] • Galstian, Andranik Eddie. Tentative Parcel Map 19158 to create four parcels on approximately 147 acres. APN 0626-231-13-0000. Accepted.[42]	The three minor subdivision proposals are located 16 miles west, 31 miles west, and 33 miles west of the Project area, respectively.	• The Bryan Case minor subdivision was accepted in October, 2010. • The Galstian, Andranik Eddie parcel map was accepted in January, 2011. • The Galstian, Andranik Eddie parcel map was accepted in January, 2011.	Land Use. Only impact associated with splitting parcels is land use-related. Future site-specific projects would be subject to individual environmental reviews. No projects are currently proposed.

38 County of Bernardino, *Land Use Services Department Projects*, http://www.sbcounty.gov/landuseservices/Public%20Notices/Projects/Projects.htm, accessed July 2011.
39 California State Lands Commission, *El Paso Line 1903 Pipeline Conversion Project*, http://www.slc.ca.gov/Division_Pages/DEPM/DEPM_Programs_and_Reports/El_Paso/ElPaso_PipelineConversion_DEIR.html, accessed September 2011.
40 County of San Bernardino Planning Department, *Accepted Application APN 0592-251-01-0000*, September 2010.
41 County of San Bernardino Planning Department, *Accepted Application APN 0626-131-07-0000*, January 2011.
42 County of San Bernardino Planning Department, *Accepted Application APN 0626-231-13-0000*, January 2011.

Table ID.	Map No.	Project Name	Nature of Project /Description	Relationship to and Distance from Project Area	Status	Areas of Potential Cumulative Effect
S	**18**	Flamingo Heights Ranch, LLC	a) General Plan Land Use Zoning District Amendment from Hv/Rl (Homestead Valley/Rural Living) to Prd (Planned Residential Development) on 640 acres; b) Tentative Tract Map 18537 to create 243 numbered lots and 3 lettered lots on 640 acres; c) Planned Residential Development for 243 units in 4 phases on 640 acres.[43]	The project is located 55 miles west of the Project area. APN 0629-181-01-0000	Accepted March, 2008	Air Quality, GHG, Land Use, Transportation. Construction- and operation-related air quality and GHG impacts. Vehicles would utilize SR-62.
T	**22**	Omdahl Development	a) General Plan Land Use Zoning District Amendment From SD-RES TO SD-RES (Prd-2008-Xx) On 15.60 Acres; b) Tentative Tract 18582 to create a one lot subdivision for condominium purposes on 15.60 acres; c) Planned Residential Development for 78 condominium units with amenities to include a community pool and a common recreation area on 15.60 acres.[44]	The development is located 38 miles east of the Project area. APN 0649-201-02-0000	Conditionally Approved	Air Quality, GHG, Transportation. Construction- and operation-related air quality and GHG impacts. Vehicles would utilize SR-62.
U	**25**	URIEL, GUY D	Conditional Use Permit to establish a motor sports facility with various support structures on 280 acres.[45]	The project is located 25 miles southeast of the Project area. APN 0647-061-08-0000	Conditionally Approved	Air Quality, GHG, Land Use, Transportation. Construction- and operation-related air quality and GHG impacts. Vehicles would utilize SR-62.

43 County of San Bernardino Planning Department, *Accepted Application APN 0629-181-01-0000,* March 2011.
44 County of San Bernardino Planning Department, *Accepted Application, APN 0649-201-02-0000,* 2007.
45 County of San Bernardino Planning Department, *Accepted Application, APN 0647-061-08-0000,* July 2006.

5.3 Cumulative Impacts Analysis

The potential cumulative contribution of the proposed Project, in conjunction with the other projects listed in Table 5-2, is discussed below by environmental resource area. There is only one area identified where the Project could make a cumulatively considerable contribution to a significant cumulative effect include:

- Air Quality – Construction emissions of NOx

No other cumulatively considerable contributions to significant cumulative effects would result with implementation of the Project.

5.3.1 Aesthetics

The Project viewshed is flat and characterized by wide open views. Generally good air quality and a lack of obstructions allow visibility for great distances under favorable atmospheric conditions. The Project site is in the viewshed of multiple congressionally designated wilderness areas, a scenic ACEC, and other specially designated federal lands. In addition to the proposed Project, other projects within the geographic scope that could result in visual impacts during construction or operation include the Rice Solar Energy Project, the West-wide Energy Corridor Program, , and the RETI and potential development within the proposed Iron Mountain CREZ. Collectively these developments concentrate development along two public transportation corridors: Old US 66 to the north, near the proposed Project wellfield, power distribution facilities, access roads, and spreading basins, and SR-62 to the south, near the ARZC ROW and CRA and the proposed pipeline alignment, Project staging areas, tie-in to the CRA, CRA diversion structure, and pump station(s). Based on the aggressive renewable energy goals in California and the focus on development within the desert region, it is highly likely that energy project development will occur in close proximity to the proposed Project. Construction activities associated with renewable energy projects would require the use and storage of heavy equipment in the Project vicinity. During construction, excavated trenches, stockpiled soils, equipment storage, and staging areas/activities would alter the quality of the visual environment along Old US 66 and SR-62. Because construction activities would be short-term and the majority of viewers would be driving, viewers would experience degraded views for a very short period of time, and construction-related visual impacts are considered less than significant.

Development of the proposed energy projects in the Project region could result in significant cumulative effects on aesthetics resources. However, the incremental effects associated with the permanent aboveground Project facilities would not be cumulatively considerable. Other projects include a multi-modal transmission corridor linking California to Nevada along Old US 66, a federal 368 energy corridor along I-40 and Old US 66, and development of solar and/or wind technology within the approximately 40,000-acre Iron Mountain CREZ and. While the exact nature of projects slated for construction within the federally-identified areas will depend on the specific proposals (location, size, technology, etc.), together, the RSEP and the CREZ would potentially cover approximately 60,000 acres of currently undeveloped lands with above-ground

renewable energy facilities that, collectively with other associated infrastructure (i.e., transmission), would significantly degrade the viewshed in the Project area, particularly from sensitive public vantage points in adjacent BLM Wilderness Areas. These projects would dominate the views for miles, even for remote viewers. Potential impacts could include night sky pollution, increased skyglow, light spillage, and glare; presence of industrial-looking facilities, loss of visual character and quality, and the general conversion of this remote, relatively undeveloped desert environment to a more commercial-industrial corridor.

In contrast, much of the Project infrastructure would be installed underground (43 miles of water conveyance pipelines, possibly power distribution facilities and interconnected wellfield pipelines), on private property (Cadiz Property, ARZC ROW, Metropolitan lands), and in remote areas not generally accessible by the public. Project facilities that would be visible above ground include the proposed spreading basins and possibly overhead power lines (power lines may be installed underground but if aboveground then power poles would be approximately 30 feet high) that could be visible from certain vantage points on publicly-accessible BLM lands as well as the proposed CRA tie-in facilities (tie-in, diversion structure, and one or more pump stations) which could be visible from SR-62 and Cadiz Road. However, as discussed in Section 4.1, Aesthetics, the Project would have less than significant effects on aesthetic resources. These Project facilities would not result in cumulatively considerable aesthetic impacts as they would have little effect on the overall view. The wellfield would appear as connected pads within a large undeveloped valley. If overhead powerlines are used instead of underground lines, impacts to the scenic quality of the area would be adversely affected. However, the 30-foot tall poles would blend into the long range views from local roads and surrounding areas and would not significantly affect the scenic vistas since the overhead lines would constitute a low intensity development in the desert area which is compatible with the long-range, generally uninterrupted views. In the area of the Proposed CRA tie-in facility there is already aboveground water infrastructure present and aboveground water features are not generally considered negatively by viewer groups. Implementation of Mitigation Measure **AES-1** would reduce light- and glare-related impacts to a less than significant level by requiring all lighting to be shielded and directed onto the Project site and away from adjoining property and public ROWs. Based on the limited footprint of the aboveground Project facilities and the implementation of Mitigation Measure **AES-1**, and the magnitude and type of development proposed along the energy corridors, the Project's incremental effect on aesthetic resources would not be cumulatively considerable.

5.3.2 Agriculture and Forestry Resources

The proposed Project would convert some agricultural land uses to other uses but would not preclude ongoing agricultural use of the Project site. Agriculture accounts for approximately 41,793 acres, or 2.32 percent, of County land area, and while the majority of the Project area is undeveloped, 9,600 acres of land in the Project vicinity and 2,295 acres of land within the Project site are zoned AG. Approximately 1,600 acres of active agricultural lands are located in the northeast portion of the Cadiz Property. The Project would avoid active agricultural areas to the maximum extent feasible in order to avoid direct impacts to agricultural lands. The proposed spreading basins and most of the expanded wellfield, as well as the rest of the Project

infrastructure, would be located in areas that are not zoned AG. As part of the Project, Cadiz may cease further agricultural irrigation and, therefore, it could remove some or all of the current 1,600 acres from production, which represents approximately 3.8 percent of the County's agricultural acreage. Therefore, construction and operation of the Project would not result in significant effects on agricultural resources.

Beyond the irrigated agriculture on the Cadiz Inc. Property, there is little agriculture activity in the Project vicinity and none of the other projects identified in eastern San Bernardino County (within the geographic scope for cumulative analysis of agricultural resources) would result in significant effects on agricultural uses or convert significant proportions of agricultural lands to non-agricultural uses. Therefore, the incremental effects of the proposed Project, when considered together with other projects listed in Table 5-2, would not result in a cumulatively considerable impact on agricultural resources.

5.3.3 Air Quality

The geographic scope of cumulative air quality impacts is the MDAQMD. Notably, any project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact.

As discussed in Section 4.3 Air Quality, with implementation of Mitigation Measures AQ-**1 through AQ-5**, Project emissions would meet MDAQMD significance thresholds for criteria air pollutants and be less than significant except for NOx emissions. NOx emissions during construction would exceed MDAQMD thresholds and remain a significant and unavoidable effect of Project construction. As shown in Table 4.3-6, the projected long-term operational emissions associated with the Project, however, would be less than significant.

Other projects that would contribute to cumulative impacts on air quality are shown in Table 5-2. (Please note that Table 5-2 only includes projects in the general vicinity of the proposed Project and does not purport to list all construction projects within the MDAQMD). Concurrent construction of the Project, together with other projects in the air basin, would generate emissions of criteria pollutants and toxic air contaminants, including suspended and inhalable particulate matter and equipment exhaust emissions. Because the Project construction alone would exceed significance thresholds established by the MDAQMD for activities and operations within the high desert portion of the Mojave Desert Air Basin, when considered in conjunction with overlapping construction projects in the MDAQMD, its contribution to cumulative air quality impacts are cumulatively considerable.

Project operations would not create emissions that would exceed the MDAQMD thresholds due to minimal daily operational trips and low emissions from engine operations (see Table 4.3-6). Long-term Project operations would not result in significant cumulative impact.

5.3.4 Biological Resources

Though development and growth in the Project vicinity has been infrequent and sporadic over the last 50 years, regionally, renewable energy development in the Mojave and Sonoran Deserts has recently increased and with it, impacts to biological resources have and will continue to increase. The cumulative projects listed in Table 5-2 and depicted in Figure 5-1 demonstrates that development pressure is increasing in the Project area due to (1) identification of renewable energy development zones (i.e., CREZs) in the Project vicinity for which streamlined project approval and permitting is anticipated; (2) the number, magnitude, and concentration of proposed projects; and (3) the number of acres/areas set aside and/or proposed to be set aside for conservation and resource protection (by preserving 1.6 million acres of public lands throughout California and hundreds of thousands of acres in the Project vicinity, the CDPA of 2011 would also direct development towards designated areas such as CREZs). For these reasons, the DRECP, now in preparation, will function as an NCCP, provide the basis for future HCPs, and establish a framework for more efficient renewable energy project permitting within the Planning Area, resulting in greater conservation than would occur from a project-by-project, species-by-species review. The Project site is located within the DRECP Planning Area, but it would not be covered by the DRECP because it is not a renewable energy proposal.

The geographic scope of the cumulative effects analysis for biological resources varies based on the biological resource being evaluated. As described in Table 5-1, the overall geographic scope for the cumulative analysis of impacts to biological resources includes the portion of the Mojave Desert bounded by I-40 and Old US 66 to the north, I-95 to the east, SR-62 to the west, and SR 247 to the west. However, Project footprint impacts on plant species, habitats, and species with limited distribution are evaluated at a site-specific, local level, while the direct and indirect impacts of Project activities (construction and operation) on regionally-distributed and important species such as desert tortoise are evaluated more broadly.

Of the cumulative projects, plans, and programs listed in Table 5-2, those that would affect large geographic areas and similar environmental resource areas and that would occur in close proximity to the proposed Project would be most likely to contribute to cumulative impacts on biological resources. These include the following: RETI development within the Iron Mountain CREZ (~ 40,000 acres), which intersects and overlaps with the Project site along the southern portion of the ARZC ROW and CRA-tie-in; implementation of the RSEP on BLM lands south of SR-62; the Marine Corps Base Expansion on up to 380,000 acres of land west of the Project site; RETI development within the Twentynine Palms CREZ to the west (~18,256 acres); implementation of the High-Speed Passenger Train Project to the northwest and the West-Wide transmission corridor to the north; construction and operation of the James W Wilson RV Park located just north of the Project site; and implementation of the DRECP (which includes the Project site in its Planning Area), and potential adoption of the CDPA of 2011. Together with the proposed Project, all of these projects and activities, with the exception of the DRECP and CDPA, would result in direct losses and degradation of habitat (either through removal or temporary disturbance) and soils (i.e., through dust deposition), habitat fragmentation and disruption of wildlife corridors / wildlife movement in the Project vicinity; construction noise

impacts on wildlife species (i.e., impacts to nesting birds and bats); attraction of predators to the area; introduction and spread of exotic weed species; and loss, disruption, or degradation of sensitive communities, including desert washes and drainages.

The DRECP, a planning document and NCCP, and the CDPA, an open space/conservation plan, are both intended to help avoid, minimize, and/or mitigate the cumulative effects of planned renewable energy development across the region; target substantial acreage of land for open space and habitat conservation; and have the potential to contribute to meaningful resource conservation in the region. Implementation of these plans would have a beneficial impact on biological resources that would, in part, mitigate the effects of the development described herein.

If the projects and plan areas listed above are constructed and/or reach full build-out conditions, permanent and temporary losses of desert habitats / vegetation communities would occur. In addition to direct impacts (removal and disturbance) on up to 250 acres of Mojave creosote bush scrub, Mojave wash scrub, and stabilized desert dunes/desert sand fields associated with implementation of the proposed Project, other projects with cumulative impacts on biological resources would result in direct impacts including up to 40,000 acres of development within the Iron Mountain CREZ; 1,410 acres of RSEP development; up to 380,000 acres associated with the Marine Corps Base Expansion; and up to 18,256 acres of development within the Twentynine Palms CREZ, including the 6 projects listed in Table 5-2, for an estimated cumulative disturbance of up to 524,000 acres and temporary losses of desert habitats. The federal 368 corridor would also disturb the existing habitats along the Old US 66 and I-40 corridors.

The EIS for the Marine Corps Base Expansion concluded that impacts to creosote bush scrub would be cumulatively considerable but that other habitat disturbance – based on the nature of military maneuvers – would not be significant.[46] That is, of the 524,000 acres of potential disturbance associated with cumulative development in the Project area, up to 380,000 acres would be subject to periodic disturbance from military maneuvers over the long-term, but the Base Expansion Project would not denude large areas of habitat.

For the remaining 144,000 acres of impacts associated with renewable energy development projects and programs in the Project area and vicinity, it is assumed that full-build-out of designated renewable energy development zones (CREZs) would remove habitats. There are several factors that make the Project's contribution to effects on habitats and associated species less than cumulative considerable. First, Project effects would be mitigated through avoidance and minimization measures coupled with compensatory habitat acquisition and management. Second, renewable energy development within designated CREZ areas is to be sited to avoid and minimize effects and to also be fully mitigated through the DRECP effort. In addition, there is substantial acreage in the project region that is protected from use directly or indirectly for habitat conservation including the existing Joshua Tree National Park (1,017,750 protected acres) and Mojave National Preserve (1,419,800 protected acres), numerous BLM Wilderness areas and

[46] U.S. Department of the Navy, Bureau of Land Management, Federal Aviation Administration, and U.S. Marine Corps, *Draft Environmental Impact Statement Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live Fire and Maneuver Training, Marine Corps Air Ground Combat Center, Twentynine Palms, CA*, February 2011.

ACECs in the Project area (there are 3.6 million acres within BLM Wilderness Areas in California); and the proposed protection of an additional 1.6 million acres of desert lands proposed under the CDPA of 2011, including 941,413 acres for the proposed Mojave Trails National Monument located immediate north of the Project site, 133,524 acres for the proposed Sand to Snow National Monument near the intersection of SR-62 and the I-10 and the addition of 2,900 acres to Joshua Tree National Park, 40,740 acres to Death Valley National Park, and 7,141 acres to the San Gorgonio Wilderness.,

Approximately 250 acres of desert habitats would be affected from implementation of the proposed Project. Much of this disturbance is parallel to an existing active railroad and is previously disturbed. None of the Project area would affect high quality habitat that is within an area proposed for conservation. Wildlife and vegetation potentially using the affected habitats have been described in Section 4.4 Biological Resources in detail. The only species listed within either the State or federal ESA is the desert tortoise. The Project facilities would not be located in any Wilderness Area or critical habitat except a portion of the area identified for the spreading basins for the Imported Water Storage Component extend into the designated critical habitat for the desert tortoise. Given the comparative impacts of other projects in the region that could affect up to 524,000 acres, and the size of the National Parks, National Preserves, DMWAs, and ACECs that have been developed to protect the desert ecosystem resources including the desert tortoise, the Project's contributions would not be significant or cumulatively considerable.

Mitigation Measures **BIO-1 through BIO-18** have been identified in the Draft EIR to mitigate for direct impacts of the Project, such that no impact would remain significant and unavoidable. Effects to all species including special status species such as the desert tortoise and County-protected plants would be avoided where possible. Where impact to species is unavoidable, compensation and restoration is proposed as mitigation. Implementation of these mitigation measures listed in Section 4.4 including compensating Project effects with conserved lands in perpetuity as approved by resource agencies would lessen the Project's direct effects on biological resources in the region.

These mitigation measures to preserve habitat in perpetuity to compensate direct Project effects also assist in diminishing contributions to the cumulative effect. In addition, federal, State and local plans have been established to preserve desert ecosystems including the CDPA and local ordinances. Compatibility and consistency with the CDPA, federal ESA, federal CWA, and local ordinances would ensure that the impacts of the proposed Project would not contribute considerably to a cumulatively significant impact to biological resources in the eastern California deserts.

5.3.5 Cultural Resources

The geographic scope of potential cumulative impacts related to cultural resources includes the proposed Project site and its immediate vicinity. The Valleys in the Project vicinity were important areas for gathering both salt and food resources for both the Mohave and Chemehuevi, and the remains of campsites are scattered throughout the valley, there are panels of rock art in

the adjacent mountains, and historic resources such as railroad sidings are located along the proposed pipeline alignment. Though no paleontological resources were observed on the site surface during 2010 surveys, construction of the proposed Project would include earthmoving activities that could unearth previously unknown archaeological or paleontological resources. Cultural sites identified during construction would be recorded at the San Bernardino Archaeological Information Center. Of the historic structures near the proposed Project, several of the resources located within the pipeline alignment could be affected by other planned or proposed Projects that overlap geographically.

Other development projects planned for the area could also encounter cultural resources. It is possible that the development of projects within the Iron Mountain CREZ, and of other projects likely to occur in the area, could contribute cumulatively to cultural resource impacts. However, further investigation in those areas would be needed, including a cultural resource survey of the affected areas of potential effects to identify resources; no surveys of the CREZs have occurred to date. Each project would be responsible for recording new sites appropriately. However, historic properties would be avoided or mitigated to the extent possible in accordance with state and federal regulations.

Similarly, through ongoing consultation with the California SHPO and appropriate Native American governments, it is likely that many adverse effects on significant resources in the Ward Valley could be mitigated to some extent. Uncovering archaeological and paleontological resources generally adds to the regional understanding of the area's history and would not result in a cumulatively considerable adverse impact to cultural resources unless those resources were destroyed. Impacts related to visual resources and Native American concerns related to views are addressed above, under Aesthetics. The impacts on cultural resources of the proposed Project, considered together with other renewable energy development projects, would have less than cumulatively considerable effects on cultural resources and are considered less than significant.

5.3.6 Geology and Soils

The geographic scope of the cumulative impact analysis for geology, soils, and seismicity, includes the Project site and areas immediately adjacent. The construction activities described in Chapter 3, Project Description, would include earthmoving, trenching, and some temporary stockpiling, which could lead to soil erosion. Most of the projects listed in Table 5-2 would include some degree of ground-disturbance and excavation and therefore would have the potential to contribute to cumulative soil erosion effects. However, all projects, including the proposed Project, must comply with pertinent federal, State, and local laws, which require preparation of SWPPPs to address stormwater, minimize erosion and sedimentation by implementing BMPs for erosion control features, and adhere to construction practices that prevent soil erosion. Further, implementation of Mitigation Measures **GEO-1** and **HYDRO-1** would ensure that Project impacts to stormwater runoff and water quality are minimized to the maximum extent feasible. Because SMWD and its contractors would implement measures and design features to prevent soil erosion, as would other projects in the region, the Project's contribution to soil erosion impacts would not be cumulatively considerable.

The proposed Project and other cumulative project facilities would comply with the CBC and be designed to minimize the potential effects of liquefaction, ground shaking, landslides, and other seismic activity effects. The Project would install shut-off valves and blow-off valves in pipelines to minimize water releases in the event of a pipe break. Well pads and interconnections would be installed on flat terrain with minimal liquefaction hazards.

Project operation would result in the long-term withdrawal of groundwater, which could potentially lead to a reduction in groundwater levels in the Project vicinity and concomitant subsidence or land settlement could occur due to the loss of interstitial water from soils and sediments. Subsidence is a concern with any drawdown of groundwater, although if surface water is returned via groundwater banking, that would ameliorate this impact, at least partially. The area with the greatest potential for subsidence would be the western part of the Project wellfield, in the vicinity of the Cadiz Inc. agricultural operations, because this area contains a higher proportion of fine-grained subsurface sediments below the water table. Implementation of Mitigation Measure **GEO-2** would minimize subsidence-related impacts on rail line and underground pipelines near the Project wellfield. None of the other projects being described in this Chapter that would also withdraw groundwater would draw more than nominal quantities of water from the same groundwater aquifer system as the proposed Project. Therefore, this impact is not considered cumulatively considerable.

5.3.7 Greenhouse Gas Emissions

GHG and climate change-related impacts are considered to be exclusively cumulative impacts; there are no non-cumulative greenhouse gas emission impacts from a climate change perspective.[47] Section 4.7, Greenhouse Gas Emissions, provides a detailed discussion of the Project's contribution to the cumulative impact of global warming. The geographic context for GHG emissions is global. However, the State of California has established protocols, policies and attainment goals that apply to the Project and all local projects listed in this analysis.

The MDAQMD does not have a GHG policy at this time, so the Project would not result in a conflict. The County is currently preparing their Countywide GHG Emissions General Plan Amendment, GHG Reduction Plan, and Development Code Amendments, which are in development. Mitigation Measures **GHG-1** and **GHG-2** provide for emissions reductions or the purchase of offsets to minimize emissions of GHG. As a result, as described in Section 4.7 Greenhouse Gases, the Project would not contribute considerably to global warming.

5.3.8 Hazards and Hazardous Materials

The geographic scope of impacts associated with hazardous materials generally encompasses the Project site and a 0.25-mile-radius area around the Project site. As described in Chapter 4, the proposed Project could expose workers, the public, and the environment to hazardous materials

[47] California Air Pollution Control Officers Association, *CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, January 2008.

that may be present in excavated soil or groundwater. Hazardous materials used during construction also could be released in the event of accidental upset. The adjacent Iron Mountain CREZ the RSEP, the federal 368 transmission corridor, and the James W. Wilson RV Park (north of the Project wellfields) would be most likely to contribute to cumulative impacts associated with the transport, use onsite, and potential storage of hazardous materials during construction and operation, though transport-related hazards would be increased as a result of all of the projects that utilize the major transportation corridors in the area: SR-62, I-40, Old US 66, SR-247, and I-95.

Project construction and operations activities associated with the Imported Water Storage Component of the proposed Project would result in the construction of recharge basins and associated piping in an area with a known history of military use, and UXO has been found in others areas. Construction activities situated within previous military use areas could expose workers and equipment to a hazardous condition; potential hazards to human health are associated with the presence of ordnance and explosive waste. The presence of ordnance and explosive wastes would pose the greatest risk during construction, when earth moving activities are likely to result in disturbance. Explosive materials may become more unstable over time, increasing the possibility of harm from residual wastes. Implementation of Mitigation Measures **HAZ-1**, **HAZ-2**, and **HAZ-3** would ensure that Project impacts associated with exposure to hazardous materials would be less than significant. Other projects listed in Table 5-2 have unknown levels of risk related to previous military activity but site-specific measures would be required to be implemented on a project-by-project basis to ensure avoidance of UXO. Thus, the incremental effect of the Project on UXO discovery risk is not anticipated to be cumulatively considerable.

The proposed Project would be located within a sparsely-vegetated desert area. The CAL FIRE, fire hazard severity zone map identifies the Project area as a non-very-high fire hazard severity zone, the lowest possible risk category. Implementation of the proposed Project would have a beneficial impact on fire risk because new turn-outs at crossings and sidings would be used for fire suppression. Therefore, the cumulative contribution of the Project to the risk of wildland fires is not considerable.

5.3.9 Hydrology and Water Quality

The geographic scope of potential cumulative water quality impacts encompasses the Fenner, Orange Blossom Wash, Bristol, and Cadiz Watersheds and the tributaries and associated drainage areas within the Project area. Because the Project is located within a topographically-closed drainage system, the drainage basin is separated from surrounding drainage basins by topographic divides. The only projects listed in **Table 5-2** that could potentially use groundwater from the Cadiz Valley groundwater basin are the James W. Wilson RV Park, which would require nominal quantities of groundwater, and potential renewable projects in the Iron Mountain CREZ, which could potentially draw water from the Cadiz Valley groundwater basin. The RSEP would meet water demands of 780 AFA of construction water and 180 AFY of process water by drawing water from the Rice Valley Basin.

As discussed in Section 4.9, Hydrology and Water Quality, mitigation measures have been developed to ensure that direct Project impacts remain less than significant. The direct impacts of the Project take into consideration all the other users of the groundwater basin. Mitigation measures are designed to ensure that other beneficial uses of the groundwater basin and surface water resources are not significantly affected. The proposed Project would result in far greater groundwater extractions than the other projects combined. Cumulative extractions from groundwater basin would essentially be the condition analyzed in this Draft EIR since other contributions to groundwater extraction is low. Therefore, the direct and cumulative impacts to groundwater and surface water resources would be less than significant and would not be cumulatively considerable.

5.3.10 Land Use and Planning

The geographic scope of land use impacts encompasses the communities located between the Morongo Basin and I-95, as they would be most affected by traffic accessing the Project site and other nearby development projects, most likely via SR-62 from the I-10. Access roads to most of the Project area currently exist, the proposed water conveyance pipeline would be installed within an existing railroad ROW; and the proposed wellfield and spreading basin areas, staging areas, and areas associated with proposed power distribution facilities are privately owned and vacant.

The cumulative projects listed in Table 5-2 would be located in remote, rural, and largely undeveloped areas. Transportation corridors exist in all four directions (north, south, east, and west of the Project site) to serve the projects, and major highways including Old US 66, I-95, I-15, I-40, and SR-62, as well as the ARZC and BNSF railroads could be used to transport goods and heavy equipment to and from the construction areas. Existing overhead transmission lines and multiple underground power, water, and natural gas lines traverse the region, and a proposed 368 federal transmission corridor has been designated along I-15 and Old US 66, connecting California to Nevada. Thus, infrastructure already exists in the region to support the proposed Project.

The Project area is located within the DRECP Planning Area and adjacent to areas covered by the proposed CDPA of 2011. The DRECP will be an NCCP and will serve as the basis for future HCPs for renewable energy projects in the California deserts. The multiple ongoing renewable energy plans and projects, such as the Solar E Program, the West-Wide Energy Corridor Program, and the RETI continue to coordinate their efforts and the proposed solar and renewable energy study areas and zones are consistent with the DRECP. DRECP Planning Maps have been revised to accommodate areas proposed to be set aside under the CDPA of 2011. Therefore, the cumulative projects do not conflict with land use plans or policies, including proposed or pending HCP or NCCPs.

Several large-scale land use plans are currently in progress. While most of the General Plan Update effort that Yucca Valley is undertaking is not applicable to the proposed Project, the EIR for the Yucca Valley General Plan will evaluate several realignment alternatives for re-routing SR-62 around Old Town in order to slow traffic through the historic town center and allow trucks

and other through traffic to maintain higher speeds on arterial highways (currently speed limits are 40 mph along the 10- to 15-mile stretch through the town of Yucca Valley). This is not a land use consistency issue; the proposed Project and other cumulative projects would comply with rerouting and detour requirements for traffic utilizing SR-62. However, it is a consideration under traffic and transportation, below.

Several land use conflicts based on overlapping project areas could arise. The biggest potential land use conflict is the overlap between the Marine Corps Expansion Project Eastern Alternative (Alternative 3), which overlaps substantially with the proposed Project and would require eminent domain action on the part of the DOD for the taking of private lands. The Eastern Alternative however was not selected as the preferred alternative in the Draft EIS for the Expansion Project. Six alternatives are under consideration, including a revised western alternative that would allow the public continued access to lands when not under active military training use. This alternative has been selected as the preferred alternative (Alternative 6).

Lands in the Project vicinity are located within up to five military training routes (MTRs) which are part of a large, interconnected system of training routes throughout the southwest. The development of facilities that encroach into the airspace of MTRs could create safety issues and conflict with military training activities. The proposed Project does not propose aboveground infrastructure that would interfere with military airspace regulations.

The proposed Iron Mountain CREZ on BLM lands could provide for energy development in areas that overlap with the Proposed Project. The CREZ boundaries have been established around an area that includes approximately 2,600 acres of private lands and 650 acres of State lands; another 560 acres of State lands are located adjacent and south of the SEZ.[48] Neither program proposes to use eminent domain to acquire these lands. Conflicts associated with adjacency will need to be evaluated on a project-by-project basis once renewable and solar projects have been identified. Conflicts with underground (natural gas, water) and/or aboveground utilities (overhead electric), transportation corridors (ARZC ROW), and Metropolitan's landholdings, including the CRA, as well as the proposed Project tie-in to the CRA, diversion structure, pump stations, and staging areas, do not appear to be inconsistent with the CREZ or SEZ proposals. Thus, no cumulative considerable effects on land use are anticipated.

Impacts associated with renewable energy development would be partly ameliorated by implementation of the DRECP and the CDPA of 2011, which would provide protections for biological resources and sensitive public lands, respectively. The intention of the CDPA of 2011 is to protect high-quality biological functioning areas for preservation, in part to offset the renewable energy development occurring in California's desert region. Together, these protections and planning efforts would partly offset the cumulative effects associated with development in the Project region.

[48] U.S. Department of Energy and U.S. Department of the Interior, *Draft Solar Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States*, December 2010.

Nevertheless, the concentration of renewable energy development contemplated within the Iron Mountain CREZ in the Project vicinity, along with the RSEP south of SR-62, and the expansion of the Military Base, the character of the Project region may change considerably as a result of proposed development. However, the proposed Project would not create a considerable change in land use – additional wells would be added to an area within which wells are currently active; the majority of the Project facilities would be installed underground; the proposed conveyance pipeline would be constructed within previously disturbed portions of the ARZC railroad easement; and the tie-in to Metropolitan's facilities would be in keeping with the existing infrastructure in the Project region. Thus, the Project itself would not have a cumulatively considerable impact on land use.

5.3.11 Mineral Resources

Most of the Project elements would be located away from existing or potential mineral resources. Some portions of the water conveyance pipeline cross areas of potential mineral resources (gypsum, metals and non-metals, sodium [salt], oil and gas, uranium and/or thorium) that are on public lands managed by the BLM. However, these mineral resources are not in active use and the BLM evaluation is largely based on limited data such as aerial surveys. In addition, the water conveyance pipeline would be located within the ARZC ROW, where potential future mineral resource exploration and use is not permitted for safety reasons. The wellfield facilities are located on private land do not support mineral extraction.

The salt production at the Cadiz and Bristol Dry Lakes uses saline water pumped from wells beneath the Dry Lakes. The following mining operations currently exist in the area:

• Tetra Technologies, Inc. is authorized to mine 10,835 acres on Bristol Dry Lake for the production of calcium chloride and sodium chloride.

• National Chloride Company of America is authorized to mine 162 acres on Bristol Dry Lake for the production of liquid calcium chloride and sodium chloride.

Implementation of Mitigation Measure **MIN-1** would ensure that groundwater production in the Fenner Gap area does not adversely impact the salt mining operations at Bristol and Cadiz Dry Lakes. Impacts on the nearby mining operation could result from Project operation (drawdown of water) and the implementation of other cumulative projects. Within the KSLA, multiple use-management may allow for uses other than sodium mineral development, but only if those other uses do not interfere with or restrict the production of sodium minerals. Other projects in the vicinity would affect mining leases. For example, expansion of the Combat Center under Alternative 3 would end two existing mining leases. However, with mitigation, the Project's incremental effects on mining operations in the Project vicinity would not be cumulatively considerable.

5.3.12 Noise

Cumulative noise and vibration impacts are evaluated on the Project site and areas immediately adjacent, due to the attenuating effects of noise. Construction and operation of projects listed in **Table 5-2** would generally not result in cumulative noise effects due to their scattered, remote locations. Projects with the potential to create cumulative noise impacts include the RSEP, development within the Iron Mountain CREZ , the federal 368 transmission corridor traversing Old US 66 and I-40, and the James W. Wilson RV Park.

As described in Section 4.11, Noise, the construction and operation of the proposed Project would result in less than significant noise impacts. The Project's individual contribution to noise impacts would not significantly contribute to the overall noise environment. During construction of cumulative projects, construction equipment could temporarily increase noise levels over short durations during the day. However, after the construction phases are complete, there would be very little noise associated with Project operations. The Project would not create a cumulatively considerable contribution to cumulative noise impacts due to the separation of projects, the sparse population of the region, and the short-term nature of noise-generating activities.

5.3.13 Public Services and Utilities

As described in Section 4.12, Public Services and Utilities, the proposed Project would not result in significant impacts to public services. Approximately 240 workers would be employed at any given time at the Project site during construction. The proposed Project does not include residential development and would not bring a substantial number of new, full-time employees to the Project area that would require the expansion of public facilities construction of which could result in adverse physical impacts. All of the required public service providers have indicated that they have the capacity to serve the proposed Project. Because the proposed Project does not include residential development and would not add a substantial number of new, full-time employees to the Project area, it would not result in a cumulative contribution to impacts on public services.

The proposed Project would potentially impact existing utilities and storm water drainages during construction of linear facilities (i.e., water conveyance pipelines) that would cross numerous existing utilities and drainages located along the ARZC ROW. Projects listed in Table 5-2 may also cross existing utility lines and/or existing drainages in the Project vicinity. Implementation of Mitigation Measure **UTIL-1** would ensure drainages are returned to their original contours and flow capacity following Project construction. Implementation of Mitigation Measures **UTIL-2** and **UTIL-3** would ensure Project construction and operation does not impact existing natural gas pipelines or disrupt utility services. The Project wellfield and spreading basin areas and water conveyance pipeline alignments have been designed to minimize crossings of high pressure gas lines, and construction activities would be coordinated with the utility companies / owners to minimize impacts to service providers.

To support the California Energy Action Plan II to reduce the State's overall energy usage, the Project would incorporate energy efficient equipment, such as pumps and lighting, to minimize energy impacts. Mitigation Measure **UTIL-4** would require the installation of energy efficient equipment consistent with County goals of reducing natural gas consumption. Considered together with the suite of renewable energy development areas (CREZs) and federal transmission corridors that have been identified in the Project vicinity, the proposed Project would not have a cumulatively considerable contribution on utility services.

5.3.14 Transportation and Traffic

The geographic scope for evaluating cumulative traffic impacts consists of I-40 and Old US 66 (also known as National Trails Highway) to the north; SR-247 and SR-62 to the west; SR-62 and I-10 to the south; and US 95 and SR-177 to the east. As described in Section 4.15, Transportation/Traffic, the proposed Project would increase traffic on local roadways during construction, which is expected to last approximately 2 years, between 2013 and 2015. The primary impacts from the movement of construction trucks would include short-term and intermittent impacts on roadway capacities due to slower moving vehicles, traffic-generating construction activities associated with the arrival and departure of constructions workers, trucks hauling equipment and materials to the construction sites, the hauling of excavated soils, and importing new fill. Trucks exiting the construction sites and entering the regional highway network would slow traffic and could create temporary, local hazards to faster moving vehicles. Construction would generate increased vehicle trips (by construction workers and construction vehicles) on area roadways; require temporary road closures on some public roadways; increase potential traffic safety hazards; increase wear and tear on haul routes; and increase demand for parking in the vicinity of construction sites.

Construction traffic would exit the feeder highways (SR-62 or US-66) and follow existing paved and unpaved access roads to the construction sites. Some new access roads may need to be constructed or improved for heavy machinery. No new at-grade railroad crossings would be constructed. Cadiz-Rice Road and existing railroad crossings would be utilized for site access, and new turn-outs at crossings and sidings would be used for fire suppression.

During any given work shift, up to 240 workers and 25 pieces of heavy equipment would be required for construction. The total number of workers and pieces of heavy equipment operating at one time would vary depending on the construction schedule developed by the construction contractors. Most workers would stay at the worker housing facilities provided on Cadiz Property during the work week and commute from the area on the weekends. The number of trips per day during the week, including worker commute and truck deliveries, would not be expected to exceed 100 round trips per day (i.e., 100 coming and 100 going). This is a conservative estimate of a busy day; actual daily auto trips would likely be fewer. The addition of 100 daily round trips on SR-62 or US-66 would not significantly increase average daily traffic counts on those highways. Furthermore, although construction would increase traffic on Cadiz-Rice Road considerably, the level of service is low and delays would not be anticipated. The road would remain passable to non-Project traffic at all times.

Some trucks transporting equipment and construction employees for the proposed Project would be expected to use SR-62 and either Cadiz-Rice Road or the loop around Amboy Road. However, most of the equipment and crew/employees needed for construction would be delivered from the San Bernardino area, Barstow, or Needles, and trucks transporting this equipment and construction crews would be expected to use Cadiz-Rice Road via I-40 and Old US 66. Construction related traffic would slow to exit SR-62 near the Cadiz-Rice Road exit and at the Amboy exit on US-66 and may briefly affect through-traffic speeds. Traffic control measures, including turn off lanes may be necessary to avoid impacts to high speed traffic. Implementation of Mitigation Measures **TR-1 through TR-5** would ensure that construction-related traffic impacts would be less than significant. With implementation of mitigation, construction would not conflict with the San Bernardino County CMP, the Circulation Element of the San Bernardino County General Plan, or SCAG's Regional Transportation Plan. Furthermore, the proposed Project would not introduce new traffic hazards, nor impede traffic in the Project area that would create obstacles for emergency service providers.

Other construction projects that could contribute to cumulative traffic impacts in the area include those listed in Table 5-2. The RSEP workforce would add an average of 280 construction workers and 47 full-time staff (CEC 2009). Construction and operational vehicle and truck trips associated with potential energy development within the 40,000 acre Iron Mountain CREZ, as well as the expansion of Marine Corps Base operations, which would bring up to 12,000 Marines to the Combat Center over a 10-day period (up to 200 buses would arrive at the Combat Center on a single day) would contribute a substantial number of vehicles to the regional roadway network, particularly SR-62. Together with Yucca Valley's circulation alternative that could re-route SR-62 around Old Town and the Flamingo Heights Ranch Project, which would create 243 lots on 640 acres, could further exacerbate traffic and circulation on SR-62.

The Project would contribute up to 100 round trips per day on SR-62 or SR-66 during construction. Once the Project is constructed, vehicle trips associated with Project operations would be negligible. Due to the small contribution of traffic on the local roadways, the Project's contribution to traffic congestion (if any) would not be cumulatively considerable.