Initial Study and Mitigated Negative Declaration

for the

Owens Lake Solar Demonstration Project

Los Angeles Department of Water and Power

Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, CA 90012

March 2013

Initial Study
And Mitigated Negative Declaration

Owens Lake Solar Demonstration Project

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Section 1
Project and Agency Information

1.1 PROJECT TITLE AND LEAD AGENCY

Project Title:	Owens Lake Solar Demonstration Project
Lead Agency Name:	Los Angeles Department of Water & Power
Lead Agency Address:	111 North Hope Street, Room 1044 Los Angeles, California 90012
Contact Person:	Ms. Julie Van Wagner
Contact Phone Number:	(213) 367-5295
Project Sponsor:	Same as Lead Agency

1.2 PROJECT BACKGROUND AND OBJECTIVES

As project proponent, the Los Angeles Department of Water and Power (LADWP) is the lead agency under the California Environmental Quality Act (CEQA) and has prepared this Initial Study (IS) to evaluate the impacts of construction and operation of the Owens Lake Solar Demonstration Project (Solar Demo Project). The Solar Demo Project would generate renewable energy as well as provide data on the feasibility of additional installation of solar facilities on Owens Lake.

This IS has been prepared in accordance with CEQA, Public Resources Code Section 21000 et seq., and the State CEQA Guidelines, Title 14 California Code of Regulations (CCR) Section 15000 et seq. The IS serves to identify the site-specific impacts, evaluate their potential significance, and determine the appropriate document needed to comply with CEQA. For this project, LADWP has determined, based on the information reviewed and contained herein, that the proposed Solar Demo Project could potentially have a significant environmental impact to biological and cultural resources, but that mitigation measures can be implemented to reduce the impacts to a level of less than significant. Based on this IS, a Mitigated Negative Declaration (MND) is the appropriate CEQA document.

The Solar Demo Project is located on a portion of Phase 8 of the Owens Lake Dust Mitigation Program (OLDMP). Located in the northwest portion of Owens Lake, the Phase 8 project included placement of a 4-inch layer of Gravel Cover to control dust emissions from the lake bed. The environmental effects of the installation of Gravel Cover Best Available Control Measure (BACM) on 2.03 square miles of Owens Lake were analyzed by LADWP in 2010. A Mitigated Negative Declaration (MND) for the Phase 8 project was adopted by the Los Angeles Board of Water and Power Commissioners (LADWP Board) on September 7, 2010 (LADWP, 2010a). Therefore, this is a subsequent MND for the Solar Demo project, based on additional analysis; the prior analysis for the Phase 8 project is still valid. The Solar Demo project would be

sited on a 5.3-acre portion of the Phase 8 area. The Solar Demo is a separate project which has its own independent utility and is the subject of this environmental review document.

1.2.1 Project Background

In April 2011, California Senate Bill (SB) 2 X1 was signed into law, establishing a minimum level of 33 percent of annual electrical energy retail sales by California utilities that must be generated from eligible renewable resources by the end of 2020. SB 2 X1 codified a 2009 executive order by then Governor Arnold Schwarzenegger that had also established a 33 percent Renewable Portfolio Standard (RPS) under the authority granted to the California Air Resources Board (CARB) pursuant to Assembly Bill (AB) 32, the Global Warming Solutions Act (2006). The previously legislated RPS (under SB 107, 2006) had required that utilities acquire energy generated from renewable resources equivalent to 20 percent of their annual retail sales by the end of 2010. SB 107 applied to only investor-owned utilities, but under the legislation, publicly-owned utilities (such as LADWP) were also required to develop their own RPS programs and were encouraged to establish renewable energy resource standards consistent with the goals established for investor-owned utilities. Accordingly, the LADWP Board established a policy in 2007 reflecting the Legislature's goal of 20 percent of energy sales to retail customers generated from renewable resources by the end of 2010. [In 2008, the LADWP Board subsequently established an additional goal that required 35 percent of retail energy sales be generated from renewable resources by the end of 2020.] However, unlike past legislation, the requirements of the 2011 SB 2 X1 apply equally to investor-owned utilities and publicly-owned utilities. Therefore, in December 2011, the LADWP Board adopted an amended Renewable Portfolio Standard Policy and Enforcement Program that will achieve the mandated interim and final renewable energy generation goals established in SB 2 X1.

Consistent with these legislative and policy goals, LADWP achieved the target of 20 percent of annual retail sales generated from renewable energy resources by the end of 2010. SB 2 X1 extends the 20 percent requirement through the year 2013 and establishes an interim goal of 25 percent of sales from renewable resources by the end of 2016. The bill also requires that once utilities achieve 33 percent of energy sales generated from renewable resources in 2020, that level must be maintained in succeeding years, taking into account such factors as growth in demand for energy and replacement of existing renewable energy generation that is lost as the productive capacity of aging facilities diminishes. In accordance with State law and LADWP policy, eligible renewable resource energy includes, but is not limited to, that generated from wind, solar, small hydroelectric (30 MW or less), geothermal, and biomass sources.

In order to achieve a total of 33 percent of all retail sales generated from renewable energy resources by the end of 2020, LADWP has committed to acquire a minimum of 1,505 MW of additional renewable generation capacity, including about 242 MW from geothermal and biomass energy, 382 MW from distributed generation solar power (i.e., small-capacity solar installations distributed throughout the LADWP service area in the form of both customer and department-installed systems), and 842 MW from non-distributed generation solar installations (i.e., larger-capacity centralized solar generating facilities that may be department-installed, owned, and operated systems or third-party installed systems, the energy from which would be obtained via a long-term power purchase agreement) (City of Los Angeles, 2012).

In addition to establishing interim and final RPS goals for energy sales by California utilities, SB 2 X1 also defines the amount of renewable energy that can be acquired from out-of-state sources and still qualify to help meet a utility's RPS commitment under the legislation. Between January 1, 2011, and December 31, 2013, at least 50 percent of the energy counted towards the RPS must be generated from renewable resource projects that have a first point of interconnection within the area of control of a California electric utility Balancing Authority (i.e., the responsible entity, such as LADWP, that maintains load, generation, and interchange balance within a designated geographic are); or are scheduled into a California Balancing Authority area of control without substituting electricity from another source; or are subject to an agreement to dynamically transfer the renewable energy from an outside Balancing Authority to a California Balancing Authority area of control. Between January 1, 2014, and December 31, 2016, at least 65 percent of the eligible renewable energy counted towards the RPS must be generated from projects meeting the above criteria. After December 31, 2016, at least 75 percent of the eligible renewable energy must be generated from projects meeting the above criteria. LADWP's proposed renewable resource generation facilities necessary to meet the SB 2 X1 energy production mandates will rely substantially on solar resources located within California in order to fulfill the above requirements related to the origination of the energy (City of Los Angeles, 2012).

In addition, State policy supports the expansion of solar resources within California. To support the RPS target, Governor Brown's Clean Energy Jobs Plan called for adding 20,000 MW of new renewable capacity by 2020, including 8,000 MW of large-scale wind, solar, and geothermal resources as well as 12,000 MW of localized renewable generation close to consumer loads and transmission and distribution lines. Governor Brown's Clean Energy Jobs Plan directed the Energy Commission to prepare a plan to "expedite permitting of the highest priority [renewable] generation and transmission projects" to support investments in renewable energy that will create new jobs and businesses, increase energy independence, and protect public health (CEC, 2011).

A key aspect of the LADWP renewable energy development program over the next two decades is the continued development of in-basin solar generation capability. This so-called local solar generation has the primary advantage of providing energy production either directly at the point of consumption (in the case of smaller residential or commercial rooftop installations) or near the point of consumption (in the case of department- or third party-owned solar installations that have a higher generation capacity and can tie directly into the local electrical distribution system). This local generation helps limit the costs, impacts, reliability issues, and energy loss associated with transmission of energy over longer distances.

However, the energy generated from solar PV technology is highly sensitive to cloud cover, which can cause unpredictable deviations in power output of about 70 percent from solar panels in very short periods of time. Unlike the predictable diurnal and seasonal patterns of potential solar insolation, fluctuations in solar energy related to cloud cover can be highly intermittent, occurring rapidly over brief intervals, depending on the length of time and the degree to which the sun is obscured behind clouds. Since the extent of cloud coverage over a broad region during a given period is limited, the variability and intermittency of solar PV energy generation related to cloud cover can be moderated to some degree within the LADWP system by dispersing the

generation facilities over a wide geographic area that reaches beyond just the Los Angeles basin, the entirely of which can be under the influence of a similar weather pattern at the same time.

Owens Valley has one of the highest solar irradiation indexes in the world, with a Direct Normal Irradiance (DNI) measuring above 7.5 kWh/m^2. Based on National Renewable Energy Laboratory (NREL) solar irradiation data, this DNI would yield an average energy output of 2,200 kWh/kW(ac)/year (NREL, 2013). The Solar Demo Project has been developed to assist LADWP in determining the feasibility and economics of installing ground-mounted solar power systems on Owens Lake and to serve as a model for potential future solar energy generating systems on Owens Lake. The solar energy generated by this project would provide power for the OLDMP as well as assist LADWP in meeting its renewable energy portfolio standards.

Following installation of the proposed Solar Demo project on Owens Lake, data can be collected regarding airflow patterns which may be used at a later date to help reduce dust emissions on the Owens Lake bed.

The designs to be implemented in this project would be monitored and evaluated for cost, wind speed reduction, solar energy generation performance, constructability, durability, corrosion resistance, lateral and vertical load resistance, settlement and differential settlement, resistance to harsh weather conditions, resistance to dust storms and dust accumulation, and other factors vital to solar installation feasibility.

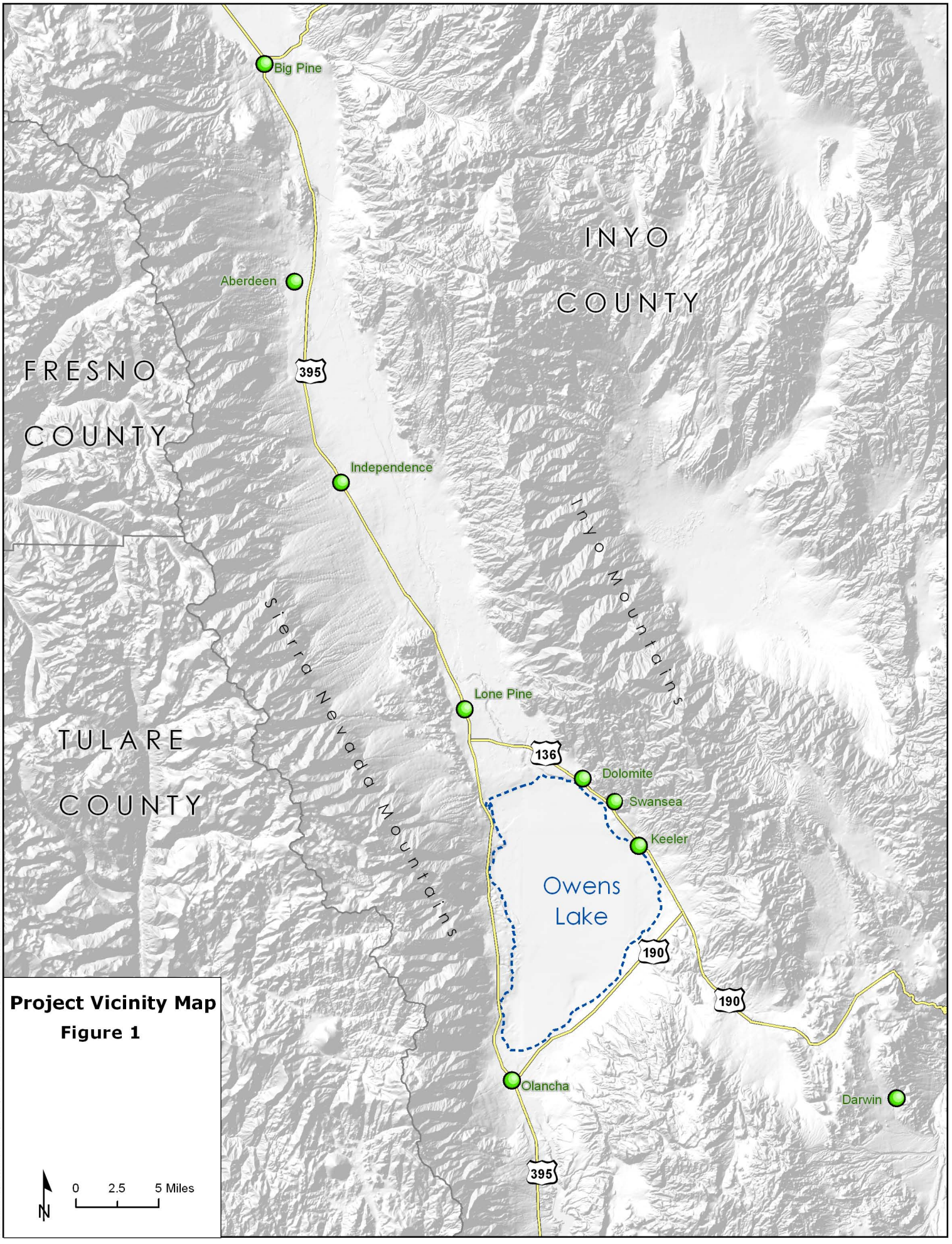
1.2.2 Solar Demo Project Objective

The objective of the Solar Demo Project is to construct a permanent solar facility to generate energy which would assist the City in meeting its Renewable Portfolio Standard goals while determining the feasibility of additional solar facilities on Owens Lake.

1.3 PROJECT LOCATION AND ENVIRONMENTAL SETTING

The Solar Demo Project would be constructed on a 5.3-acre parcel located within the 2.03-square-mile Phase 8 dust mitigation area located in the northwest section of the 110-square-mile dry Owens Lake, in Inyo County, California (**Figures 1** and **2**). As noted on **Figure 2**, a geotechnical investigation (foundation study) of a larger (20-acre) parcel was conducted prior to determining the Solar Demo location. Owens Lake is bounded by State Route (SR) 136 to the north and east, SR 190 to the south, and U.S. Highway (U.S.) 395 to the west. The Solar Demo Project site is located on the Lone Pine 7.5 minute U. S. Geological Survey (USGS) quadrangle and the latitude/longitude of the approximate center of the area is 36.53611°N/-117.993051°W (North American Datum 1983 UTM Zone 11N). Nearby communities include Dolomite and Keeler to the east, Cartago and Olancha to the south and Lone Pine to the north.

The Solar Demo Project site is located in the northeast section of the Phase 8 area and has recently (November 2012) been covered with geotextile fabric and a 4-inch layer of Gravel Cover. The Solar Demo Project site is surrounded by Gravel Cover on three sides; the eastern boundary is Corridor 1 Road. Due to the recent application of geotextile and gravel, the entire site is devoid of vegetation, controlled for dust and has no other notable features.



Project Vicinity Map

Figure 1

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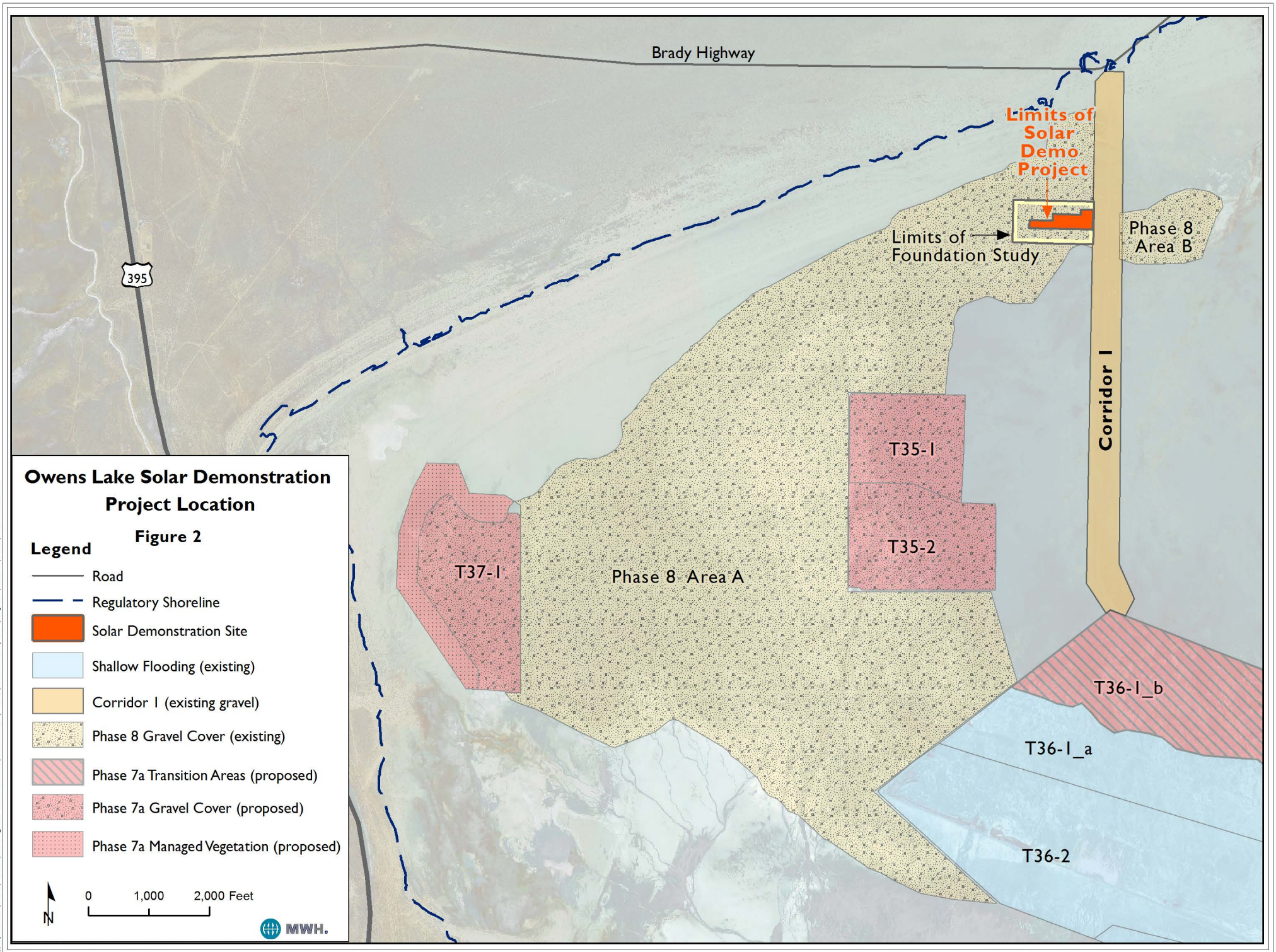

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1.4 PROJECT DESCRIPTION

The Solar Demo Project would generate approximately 500 kW of alternating current of electricity through the use of ground-mounted photovoltaic (PV) solar arrays. [A kilowatt (kW) is a standard unit of electrical power equal to 1000 watts, 1.34 horsepower, or an energy consumption rate of 1000 joules per second. Alternating current (AC) occurs when charge carriers in a conductor or semiconductor periodically reverse their direction of movement. Household utility current in most countries is AC.]

1.4.1 Photovoltaic Panels

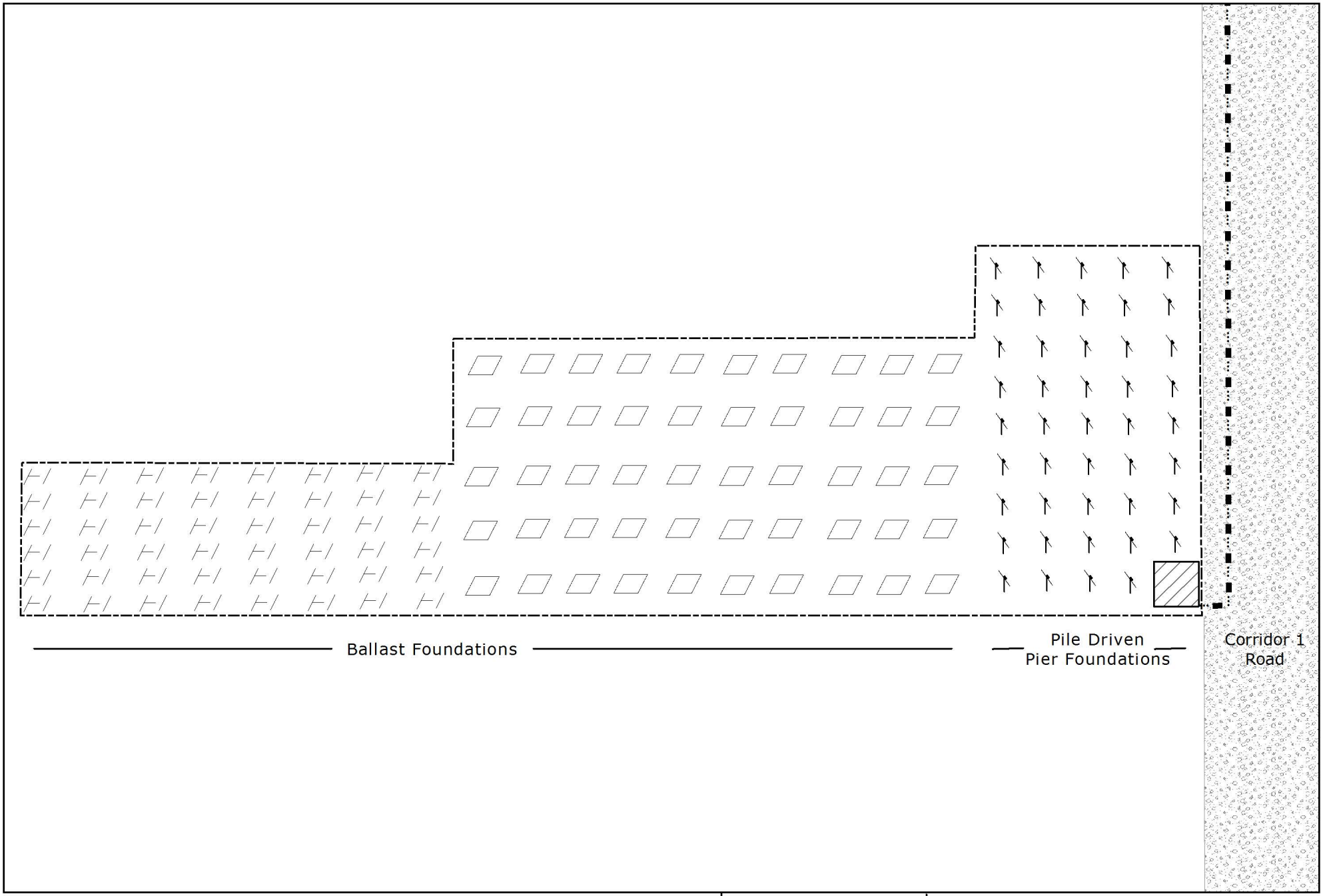
Solar photovoltaic panels would be installed in rows on an aluminum framework that would be attached to one of three types of foundations. The PV panels would be positioned to receive optimal solar radiation with an anticipated 10 degree tilt angle from horizontal toward the south. Adjustments to the tilt angle could be made to help reduce ground surface wind speed. The mounted panels would have a fairly low profile, with one foundation type having the high end of the slightly tilted panel a maximum of 8 feet above the ground. A conceptual site plan is provided in **Figure 3**; the actual configuration of solar arrays is being developed.

Three types of foundations would be installed – two with ballasts and one with pile driven piers (**Figures 4** and **5**). The ballasted foundations would use concrete blocks, which would be pre-cast and delivered to the site ready for installation. These foundations would be placed on top of the gravel that currently covers the site. The piles would be driven through the existing gravel and geotextile into the ground to a depth of 8 to 10 feet. Approximately 150 piles would be necessary to support the PV panels. All three foundation types are designed to withstand the harsh conditions of weather extremes and high winds that can occur at the site.

Individual rows of modules would be grouped into electrical circuits known as "direct current strings." These strings would in turn be combined to function as one electrical array. Because the solar power system creates direct current (DC) power, inverters would be required to change the power to AC power usable in the electrical distribution system. Two inverter units (up to 7 feet in height) would be located adjacent to the generation block on a concrete pad (approximately 1,600 square feet in area, 18-inches deep).

1.4.2 Ancillary Facilities

Transformer units would also be required to step up the voltage of the power from the inverters before it entered the distribution system. These transformers would be installed on a new pole located adjacent to Brady Highway (Lubken Canyon Road). New electrical lines would be installed beneath the Corridor 1 Road to carry power from the inverters to the transformers. Installation of the line would require a trench approximately 175 feet long, 3 feet wide and 3 feet deep. Excavated soil would be replaced into the trench as backfill. The project facilities would be connected to existing LADWP distribution lines (4.8 kV) located north of Owens Lake. These lines provide power for operations at the lake and connect to the electrical grid. No new distribution lines would be necessary.



Key to Features

- Panel Claw - Panda Bear ™
- Orion Solar Racking Jupiter 1
- Pile Driven Piers
- Proposed Power Line in Corridor 1 Road
- Inverter Pad
- Solar Demonstration Site

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Date: March 5, 2013

Owens Lake Solar Demonstration Site Plan (Conceptual)

Figure 3

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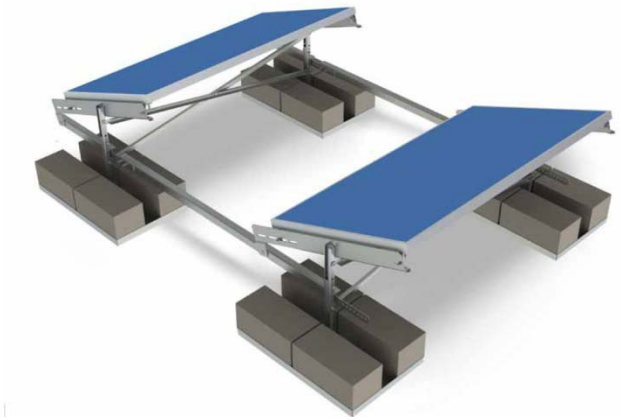
Figure 4
Owens Lake Solar Demonstration Project – Concrete Ballast Foundations



PanelClaw – Panda Bear Ground Mounting System

Orion Solar Racking Jupiter I Solar Ground Mounted System

Figure 5
Owens Lake Solar Demonstration Project – Pile Driven Pier Foundations

1.4.2.1 Access Roads and Staging Areas

The project site is adjacent to the Corridor 1 Road, which would provide site access. Corridor 1 Road would be accessed from Highway 395 via Brady Highway, which runs east-west to the north of the project site. The Corridor 1 Road was improved as part of the Phase 8 project and is now 30 feet wide. No additional road work is needed for implementation of the Solar Demo Project. Brady Highway is fenced where it meets Highway 395 to limit public access to the site. Because of this and the distance from the main highway, no additional fencing around the project site would be necessary, although certain pieces of equipment may be fenced to ensure the safety of the public and to protect the equipment from potential theft and vandalism. A staging area for equipment and personnel would be located at the southwest corner of Brady Highway and Corridor 1 Road; this area is currently gravel covered.

1.4.3 Project Construction

Construction of the Solar Demo Project is estimated to occur over 3 months and to include the activities listed below and equipment summarized in **Tables 1** and **2**:

- Site preparation and fence installation
- Structural work, post driving
- Power line trenching/excavation
- Interconnection construction
- Electrical construction
- Testing and commissioning

Table 1
Owens Lake Solar Demo Project
Summary of Estimated On-Site Construction Equipment and Vehicles

Equipment Type General Construction	Number during Peak Construction	Equipment Type Electrical Construction	Number during Peak Construction
3/4 Ton Pickup	3	3/4 T Pickup (4X4)	2
1 Ton Pickup -Utility	1	1T Pickup (4X4)	1
Generator - Utility Trucks	3	Service Truck (Utility)	2
Air Compressor	1	Rough Terrain Vehicle (Hybrid)	1
CAT 416 Rubber Tire Backhoe	1	Stake Truck (2 Axle)	2
Skid Steers	1	Generator 5.5kW	4
Hydro Crane - Rough Terrain	1	Passenger Van	2
ABI High Frequency Pile Driver	1	Forklift Telescopic	2
		Light Tower	4

Table 2
Owens Lake Solar Demo Project
Summary of Estimated Off-Site Construction Equipment and Vehicles

Equipment Type General Construction	Estimated Number	Equipment Type Electrical Construction	Estimated Number
Concrete Trucks	1	Tractor Trailer (Modules)	6
Concrete Pump Truck	1	Tractor Trailer (Racking System)	8
Hauling Equipment - Deliver	1	Tractor Trailer (Cable)	1
Hauling Equipment - Pick-up	1	Tractor Trailer (Underground)	1
		Tractor Trailer (Elect Equip)	1

The on-site construction workforce would consist of equipment operators and vehicle drivers, laborers, mechanics, supervisors and construction management personnel. The on-site workforce is expected to reach a maximum in the first month of construction with approximately 20 workers. Over the 3 month construction period, approximately 20 materials deliveries would be made to the site (for panels, racking systems, ballast, conduit, transformers, etc.) plus approximately 6 concrete deliveries for inverter pad construction.

1.4.4 Operations

Permanent monitoring equipment would be installed as part of the project. Once construction is complete, limited maintenance and on-going monitoring would occur. Monitoring activities may include routine travel to the site by a few individuals.

1.5 APPLICABLE PLANS AND POLICIES

The project site is located on CSLC-owned lands within Inyo County. The zoning overlay is OS-40 (Open Space, 40-acre lot minimum).

1.6 PROJECT APPROVALS

Permits, approvals and notifications for project construction and operation are anticipated to include:

City of Los Angeles Department of Water and Power

- Adoption of the Mitigated Negative Declaration by the Board of Water and Power Commissioners
- Project approval

California State Lands Commission

- Lease or amendment of existing lease for use of State lands

California Department of Fish and Wildlife (CDFW)

- Lakebed Alteration Agreement per Section 1602 of the Fish and Game Code

State of California Lahontan Regional Water Quality Control Board

- National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities

California Department of Transportation (Caltrans)

- Oversized vehicle permit for transportation on State highways

China Lake Naval Air Weapons Station

- Notification

Inyo County Planning Department

- Notification

Section 2
Environmental Analysis

2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Population and Housing
☐ Agricultural Resources	☐ Hazards and Hazardous Materials	☐ Public Services
☐ Air Quality	☐ Hydrology and Water Quality	☐ Recreation
☒ Biological Resources	☐ Land Use and Planning	☐ Transportation and Traffic
☒ Cultural Resources	☐ Mineral Resources	☐ Utilities and Service Systems
☐ Geology and Soils	☐ Noise	☐ Mandatory Findings of Significance

2.2 AGENCY DETERMINATION

On the basis of this initial evaluation:

☐ I find that the project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature: Charles C. Holloway Title: Manager, Environmental Assessment & Planning

Printed Name: Charles C. Holloway Date: 3/25/13

2.3 ENVIRONMENTAL CHECKLIST

2.3.1 Aesthetics

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion: The Owens Valley is straddled by the eastern Sierra Nevada to the west and the Inyo Mountains to the east, with the Coso Range rising to the south. The valley floor is interspersed with small, rural communities (e.g., Cartago, Olancha, Keeler) surrounded by dry, desert environment with minimal vegetation. Under existing conditions, views of Owens Lake are characterized by pockets of desert vegetation, limited vegetated areas related to seeps and springs and the Delta, vast areas of desert playa, mining operations, the brine pool (which fluctuates in size) and the existing system of DCMs – areas of managed vegetation, Gravel Cover, bermed areas periodically filled with water and the internal roadway network.

a) and c) **Less than Significant Impact.** The Solar Demo project site is located on a 5.3-acre portion of the 1,300-acre Phase 8 dust control area (DCA). Views of the site are of the Gravel Cover installed in November 2012 for dust control (**Figure 6**). The Solar Demo site is surrounded by Gravel Cover on three sides (north, west and south) and Corridor 1 Road (also gravel) on the east. There are no major landform features or rock outcroppings on the project site. Views from adjacent roadways are described below:

- U.S. 395 (Hwy 395) is the primary north-south motor vehicle route through the Owens Valley and eastern Sierra Nevada. At its closest point, the Solar Demo site is approximately 2.7 miles east of Hwy 395. Motorists looking east can view desert landscape and dry vegetation in the foreground, the Inyo Mountains in the distant background, and the Owens Lake bed in middle-ground views.

- SR 136 is a northwest-southeast route, used to access Death Valley National Park and Hwy 395. At its closest point, the Solar Demo project area is approximately 2 miles west of SR 136. Motorists traveling northwest or southeast have mostly unimpeded views of the lake bed. Desert landscape and dry vegetation dominate the foreground, the lake bed

can be seen in the middle-ground, and the Sierra Nevada creates a panoramic view in the distant background.

- SR 190 is a northeast-southwest route, used to access Death Valley National Park from Hwy 395. SR 190 converges with SR 136 and forms the eastern boundary of south half of Owens Lake. At its closest point, the Solar Demo site is more than 11 miles northwest of SR 190. Motorists traveling to the northeast or southwest have unimpeded views of the open lake bed. Desert landscape and dry vegetation can be seen in the foreground, the lake bed dominates the middle-ground, and the Sierra Nevada creates a panoramic view in the distant background.

Visual Impacts During Construction. Construction activities for the project include site preparation of the 5.3 acre site (minor gravel leveling as necessary), installation of foundations (pile driven piers in approximately one-third of the site and concrete ballasts in approximately two-thirds), power line trenching and excavation, installation of concrete pads and inverters and solar panel installation. Views of the project site during construction would include up to approximately 20 workers and vehicles – primarily tractors, backhoes, light duty trucks, and concrete and other delivery trucks. Within the context of the construction and maintenance activity ongoing on the lake bed, the impact of ground disturbance associated with installation of project facilities would be less than significant on the visual character of the project site.

Visual Impacts During Operation. Once installed, views of the project site would be of 5.3 acres of PV solar panels on Gravel Cover. The height of the panels would be a maximum of approximately 8 feet, depending on the angle of the tilt of the panels. The two enclosed inverter units would be approximately 7 feet in height. A new power pole would also be installed near existing power poles on Brady Highway. No other tall structures or other obstructions to scenic vistas are proposed as part of the project; the project would not alter or block scenic views of the Sierra Nevada and Inyo Mountains. However, the project would alter the aesthetics of 5.3 acres of existing Gravel Cover. Specifically, the panels would be much darker than the light grey to whitish dolomite limestone ground cover (**Figure 7**). To put the size of the facilities in context of the overall Owens Lake, and the Phase 8 area, **Figure 8** indicates the location of the Solar Demo facilities from an aerial view.

The closest residences to the Solar Demo site are at the Boulder Creek RV Park (located approximately 2.8 miles northwest at the intersection of Hwy 395 and Brady Highway), in Keeler (located approximately 7 miles southeast), and in Dolomite (located approximately 2.7 miles to the east). In views of the site from Hwy 395 (northbound shoulder, 0.3 miles north of mile marker 51.50, looking east), the existing Shallow Flooding ponds (T35-1 and T35-2) are just slightly visible as a thin dark line (**Figure 9**). The solar facilities planned under this project would be located in the general area noted on the figure. The Solar Demo facilities would be constructed on 5.3 acres; the two T35 ponds cover a total of 164 acres. Due to the distance, small size of the project site and flat topography, the Solar Demo facilities are not anticipated to be clearly visible from Hwy 395. At most, there is less than 200 feet elevation difference between Hwy 395 (approximately 3,750 feet amsl at the intersection of Hwy 395 and Brady Highway) and the project site (3,585 feet amsl). From

Hwy 395, the Solar Demo facilities are anticipated to appear as a small darker area near the existing Shallow Flooding ponds. Note that T35-1 and T35-2 are proposed to be converted to Gravel Cover under the OLDMP Phase 7a project.

Due to the distance from the viewer and the size of the Solar Demo project site in relation to the overall lake bed, views of the Solar Demo site with PV panels installed would not change the dramatic backdrop or substantially change the natural feel of the overall landscape of Owens Lake. While the Solar Demo project would alter the view of 5.3 acres of the Lake bed, the impact on aesthetics would be less than significant.

b) **Less than Significant Impact.** Scenic roadways are designated by BLM, Inyo National Forest, Caltrans, and the Federal Highway Administration. Hwy 395 is an officially designated State Scenic Highway from Independence to north of Tinemaha Reservoir (postmiles 76.5 to 96.9) (Caltrans, 2008). Hwy 395 is eligible for designation in the portions north and south of that segment (Caltrans, 2008). The project site is just east of Hwy 395 in the eligible but not designated portion of the roadway. There are no trees, major landform features or rock outcroppings on the project site and none would be disturbed by project implementation. As discussed above, implementation of the project could alter the view of the 5.3 acres of Gravel Cover DCA, but due to the distance from Hwy 395, the impact on views from a portion of roadway eligible for designation as a scenic roadway would be less than significant.

d) **Less Than Significant Impact.** The proposed project does not include permanent installation of new sources of lighting. Construction activities would occur primarily in daylight hours; some limited use of lighting may be necessary in the early morning or evening hours. There are no plans for a 24-hour construction schedule. Since the proposed lighting would be of limited duration and confined to the specific area of construction, impacts on light that could affect day or nighttime views of the project area would be less than significant.

By design, PV solar panels absorb sunlight in order to convert it into electricity. Monocrystalline solar cells use silicone with a single homogeneous crystalline lattice. Polycrystalline solar cells use silicone wafers that are formed from multiple smaller silicon crystals. An untreated silicon solar cell absorbs approximately two-thirds of the sunlight reaching the panel's surface, while panels with antireflective coating can absorb approximately 96 percent of available sunlight (Science 2.0, 2008). Therefore, depending on the panels selected for the Solar Demo project, up to approximately one-third of the sunlight reaching the surface of the solar panels would be reflected. The resulting glare would be similar to existing levels of light reflected from the Lake bed. Note that dry sand reflects approximately 45 percent and grass approximately 25 percent of sunlight (State of Oregon, undated). Additionally, the tilt of the panels can be adjusted as necessary. The nearest residences to the project site are located 2.8 miles northwest at the intersection of Hwy 395 and Brady Highway, and approximately 2.7 miles east in Dolomite. The nearest drivers are on SR 136 (2 miles to the northeast) and Hwy 395 (2.7 miles to the west), with some infrequent travel on Brady Highway (0.3 miles north of the site). Based on the distance from existing residences and most drivers, and since the panels would not create substantially more glare than existing conditions on the lake, impacts on glare would be less than significant.

Figure 6
Existing Views of Owens Lake Solar Demonstration Project Site
(Looking West from Corridor 1 Road)

Source of Photograph: MWH, February 2013

Figure 7
Solar Panels on Dolomite Gravel Cover

Source: Panel Claw Panda Bear Ground Mounted System, 2013

Figure 8
Aerial View of Solar Demo Project Site (Looking East)

Source of Photograph: LADWP, October 2012

Figure 9
View of the Solar Demo Project Site from Highway 395 (Looking East)

Source of Photograph: MWH, February 2013

2.3.2 Agricultural and Forest Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion:

a) **No Impact.** The Farmland Mapping and Monitoring Program (FMMP) does not include Inyo County; therefore the proposed project would have no impact on conversion of FMMP designated Farmland (California Department of Conservation, 2006).

b) **No Impact.** Existing zoning by Inyo County of the project site is OS-40 (Open Space, 40-acre lot minimum) (Inyo County, 2010). Since Inyo County does not offer a Williamson Act program (California Department of Conservation, 2010), the proposed project would have no impact on agricultural zoning or Williamson Act contracts.

c) and d) **No Impact.** Public Resources Code Section 12220 (g) defines "Forest land" as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. The project site is not zoned as forested land and the proposed project would not result in conversion of forest land to non-forest use. Since the site is currently covered with Gravel Cover and no trees exist on the site, removal of native trees is not proposed. Therefore, the proposed project would have no impact on forest lands.

e) **No Impact.** Active ranches are located near the project site – Horseshoe Livestock to the south and Islands and Delta Livestock, Lubkin Adjunct Livestock, and Mount Whitney Ranch north and west of the project area. However, since the project would not alter water distribution to the ranches or include traffic across ranch properties, there would be no impact on agricultural operations from construction and operation of the Solar Demo project. Additionally, since the site is currently covered by gravel and devoid of vegetation, stray animals from adjacent ranches would not be able to graze on the Solar Demo project area.

2.3.3 Air Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Discussion:

The southern Owens Valley is located within the jurisdiction of the GBUAPCD. The valley has been designated by the State and EPA as a non-attainment area for the state and federal 24-hour average PM_{10} standards. Wind-blown dust from the dry bed of Owens Lake is the primary cause of the PM_{10} violations. With the exception of PM_{10}, air quality is considered excellent and the area has been designated as attainment or unclassified for all other ambient air quality standards. Large industrial sources of air pollutants are absent from the Owens Valley. The major sources of PM_{10}, other than wind-blown dust, are woodstoves, fireplaces, fugitive dust from travel on unpaved roads, prescribed burning and gravel mining.

a) **Less Than Significant Impact.** The relevant air quality plan for the project area is the Final 2008 Owens Valley PM_{10} Planning Area Demonstration of Attainment SIP (GBUAPCD, 2008a). The focus of this planning document is implementation of DCMs at Owens Lake, the major particulate matter sources in the Valley. The SIP demonstrates how the National Ambient Air Quality Standards (NAAQS) will be attained.

The history of the air quality planning process is summarized from the 2008 SIP EIR (GBUAPCD, 2008b). In 1987, the USEPA designated the Owens Valley Planning Area as non-attainment for the NAAQS for PM_{10}. The result of this designation was a plan designed to improve air quality through the reduction of PM_{10} emissions in all of the communities in the Owens Valley (the 1998 SIP). Under this plan, LADWP began constructing DCMs on the lake bed with a goal of meeting the federal PM_{10} standards by the end of 2006. A revised SIP in 2003 required LADWP to implement DCMs on 29.8 square miles of the Owens lake bed by December 31, 2006. The 2003 SIP also contained provisions requiring GBUAPCD to continue monitoring air pollution emissions from the lake bed and to identify any additional areas beyond the 29.8 square miles that may require PM_{10} controls in order to meet the standards. Based on July 2002 through June 2004 air monitoring data, a supplemental control requirement (SCR) determination was made that additional areas of the lake bed would require DCMs in order to meet the PM_{10} standards. Based on that SCR analysis, the 2008 SIP includes 15.1 square miles (9,664 acres) of additional DCMs on Owens Lake bed. Of the 15.1 square miles, 1.9 square miles were identified as Study Area, of which some or all may require controls after 2010.

Due to the delay in implementation of the Phase 7 DCMs, LADWP submitted a variance petition to the GBUAPCD Hearing Board on August 21, 2009. Per the terms of the Findings and Order Granting Regular Variance from Requirements Set Forth in Governing Board Order 080128-01 (variance GB09-06 dated September 25, 2009), LADWP was required to implement the Phase 8 project. The Gravel Cover BACM installed on the 2.03 square-mile Phase 8 area has a 99 percent dust control efficiency. The geotextile and Gravel Cover would remain in place during installation and operation of the project. Approximately one-third of the project site would have pile driven piers for panel foundations; piers would be driven through the gravel layer. Gravel would be removed for installation of the 1,600 square-foot concrete pad for the inverter units. Since installation of the solar facilities would not reduce the dust control efficiency of 5.3 acres of the 1,300-acre Phase 8 area, the Solar Demo project would be consistent with the SIP developed by GBUAPCD for the purpose of mitigating air pollutant conditions in the Owens Valley Planning Area (GBUAPCD, 2008a).

b) and c) **Less Than Significant Impact.** Emissions during project construction would result from the operation of the equipment listed in Section 1, including: trucks, a backhoe, an air compressor, generators, a pile driver, and workers' personal vehicles. **Table 3** summarizes worst-case, peak-day emissions estimates for construction activity based on the conservative assumption that trenching for power line installation, installation of solar panels, and concrete work for the inverter pad all occur on the same day.

The GBUAPCD has not established specific quantitative thresholds of significance for air emissions related to construction. However, projects that violate the NAAQS for PM_{10} are deemed unacceptable (GBUAPCD, 2008a).

Construction activities would result in tailpipe emissions of criteria pollutants and minor dust emissions for installation of approximately 175 feet of power line in Corridor 1 Road. No grading or major earthwork is proposed. Solar facilities would be installed directly over the existing geotextile and 4-inch Gravel Cover. Additionally, as is currently done, dust on

Corridor 1 Road would be controlled by periodic watering. Construction emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region in is nonattainment under an applicable federal or state ambient air quality standard. Therefore, air pollutant emissions during construction would be less than significant.

Operation of the Solar Demo project would include infrequent travel to the site by maintenance staff from the LADWP offices in Keeler. The renewable energy generated by the project would offset fossil-fuel generated power, a beneficial impact on air quality. Operations-related air pollutant emissions would be minor and less than significant.

d) **Less Than Significant Impact.** Sensitive receptors include schools, day-care facilities, nursing homes, and residences. The closest sensitive receptors to the Solar Demo project site are residences in Dolomite (located approximately 2.7 miles to the east). As noted above, construction of the proposed project would include operation of equipment and vehicles. However, given the distance of residential sensitive receptors to the proposed project site, the impact from gas and diesel fumes associated with motor vehicles and heavy equipment engines on sensitive receptors would be less than significant.

e) **Less Than Significant Impact.** Project construction and operation would result in minor localized odors associated with fuel use for equipment and vehicles. These odors are common, not normally considered offensive, and would not be experienced by any residences since none are immediately adjacent to the project site. Odor impacts to potential recreation visitors at the sites during construction activities would be temporary and less than significant.

Table 3
Summary of Estimated Worst-Case Peak Day Construction Emissions

Emissions Source (on-road vehicles and ATVs)	Vehicle Type	No.	Est Max miles per day	Emission Factor (lbs/mi) [1]						Estimated Peak Day Emissions (lbs/day)					
				VOC	CO	NOx	SOx	PM10	PM2.5	VOC	CO	NOx	SOx	PM10	PM2.5
Pickup Truck	PV	4	20	0.00074567	0.00709228	0.00071158	0.00001072	0.00009067	0.00005834	0.06	0.57	0.06	0.00	0.01	0.00
Concrete Truck	HHDT	1	130	0.00226308	0.00931790	0.02742935	0.00004086	0.00133697	0.00114629	0.29	1.21	3.57	0.01	0.17	0.15
Delivery Truck	DT	1	200	0.00206295	0.01407778	0.01577311	0.00002682	0.00059956	0.00050174	0.41	2.82	3.15	0.01	0.12	0.10
Workers Personal Vehicles 4	PV	20	90	0.00074567	0.00709228	0.00071158	0.00001072	0.00009067	0.00005834	1.34	12.77	1.28	0.02	0.16	0.11
Emissions Source (construction equipment)	No.	Est Max hrs of use per day	Emissions Factor (lbs/hr) [2]							Estimated Peak Day Emissions (lbs/day)					
			VOC	CO	NOx	SOx	PM10	PM2.5 [3]		VOC	CO	NOx	SOx	PM10	PM 2.5
Backhoe	1	8	0.0792	0.3782	0.5392	0.0008	0.0387	0.0344		0.63	3.03	4.31	0.01	0.31	0.28
Concrete Pump Truck	1	8	0.0091	0.0421	0.0556	0.0001	0.0026	0.0023		0.07	0.34	0.44	0.00	0.02	0.02
Air Compressor	1	8	0.0913	0.3376	0.6065	0.0007	0.0434	0.0386		0.73	2.70	4.85	0.01	0.35	0.31
Crane	1	8	0.1348	0.4737	1.1934	0.0014	0.0508	0.0452		1.08	3.79	9.55	0.01	0.41	0.36
Generator (5.5kW)	4	8	0.0149	0.0684	0.1016	0.0002	0.0058	0.0052		0.48	2.19	3.25	0.01	0.19	0.17
Total										**5.1**	**29.4**	**30.5**	**0.1**	**1.7**	**1.5**

PV: passenger vehicles, HHDT: heavy-heavy-duty trucks; DT: delivery trucks

1 SCAQMD. 2007a. EMFAC2007 version 2.3 Emission Factors for On-Road Passenger Vehicles & Delivery Trucks. Scenario Year 2013.

2 SCAQMD. 2007b. SCAB Fleet Average Emission Factors (Diesel). Scenario year 2013.

3 SCAQMD. 2006. Final –Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance.

4 Average mileage per worker assumes 50 percent of workers are from Lone Pine (5 miles from project site), 20 percent from Ridgecrest (48 miles from project site), 20 percent from Bishop (61 miles from project site), and 10 percent from Los Angeles (200 miles from project site).

2.3.4 Biological Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

Discussion: Prior to implementation of the OLDMP, Owens Lake consisted of a large expanse of barren playa, a remnant hypersaline brine pool, and scattered springs and seeps along its shoreline. Implementation of DCMs has resulted in an increase in the use of Owens Lake by many wildlife species as water and vegetation resources are now present on much of the former barren playa. Shallow Flooding has attracted large numbers of birds, primarily gulls, avocets, stilts and plovers (LADWP, 2010b).

The Solar Demo project area is located on the northwest corner of the lake on Phase 8, north of Shallow Flooding DCAs T35-1 and T35-2 and just west of Corridor 1 Road (**Figure 2**). The entire Phase 8 area was surveyed for biological resources on April 8, 2010 by a LADWP Watershed Resources Specialist. At that time, the site was primarily barren alkali playa and devoid of any vegetation with the exception of the northeastern and southeastern boundaries of the project area which contained very sparse *Atriplex parryi* (Parry's saltbush), *Suaeda moquinii* (seepweed), and *Cleomella obtusifolia* (bluntleaf stinkweed). In April 2010, the estimated vegetative cover on the entire Phase 8 project site was approximately 1 percent. In November

2012, construction was completed on the Phase 8 area and a 4-inch layer of Gravel Cover was installed. Therefore, existing conditions on the Solar Demo site are unvegetated Gravel Cover.

a) **Less Than Significant Impact with Mitigation Incorporated.** Based on California Natural Diversity Data Base (CNDDB), listings for the Lone Pine, Dolomite, and Keeler USGS quadrangles, and LADWP knowledge of the areas, the following sensitive plant and animal species may have the potential to occur on or near the project sites (**Tables 4** and **5**). [Table 4 also includes two plants found on the adjacent Bartlett USGS quadrangle (directly south of the Lone Pine quadrangle).]

Table 4
Sensitive Plant Species with the Potential to Occur near the Project Site

Quad	Scientific Name	Common Name	Status	CNPS List	Habitat Preference
Lone Pine	*Plagiobothrys parishii*	Parish's popcornflower	none	List 1B.1	Wet alkaline soils around desert springs, 750-1400m
Lone Pine	*Astragalus hornii var. hornii*	Horn's milkvetch	none	List 1B.1	Salty flats, lakeshores, 60-150m (850 m in west Mojave Desert)
Lone Pine	*Phacelia inyoensis*	Inyo phacelia	none	List 1B.2	Alkali meadows, 1400-3200 m
Lone Pine	*Sidalcea covillei*	Owens Valley checkerbloom	SE	List 1B.1	Alkali meadows, 1100-1300 m
Lone Pine	*Oryctes nevadensis*	Nevada oryctes	none	List 2.1	Sandy soils, dunes, 1200-1500 m
Lone Pine	*Calochortus excavatus*	Inyo County star-tulip	none	List 1B.1	Alkali meadows, 1300-2000 m
Bartlett	*Lupinus padrecrowleyi*	Father Crowley's lupine	CA Rare	List 1B.2	Decomposed granite, 2500-4000m
Bartlett	*Trifolium macilentum var. dedeckerae*	Dedecker's clover	none	List 1B.3	Pinyon woodland to alpine crest, rock crevices; 2100-3500 m
Dolomite	*Erigeron calvus*	bald daisy	none	List 1B.1	Sagebrush/desert scrub, base of Inyo Mountains, +/- 1200 m
Dolomite	*Astragalus serenoi var. shockleyi*	Shockley's milkvetch	none	List 2.2	Open dry, alkaline gravelly clay soil with sagebrush/pinyon pine, 1500-2250 m

CNPS – California Native Plant Society listing (1A Plants presumed extinct in California; 1B Plants rare, threatened, or endangered in California and elsewhere; 2 Plants rare, threatened, or endangered in California, but more common elsewhere; 3 Plants about which we need more information - a review list; 4 Plants of limited distribution - a watch list); SE – State Endangered; SR – State Rare

Table 5
Sensitive Animal Species with the Potential to Occur on or near the Project Site

Scientific Name	Common Name	Status	USGS Quadrangle
Rana sierrae	Sierra Nevada yellow-legged frog	FC, CSSC	Lone Pine
Batrachoseps campi	Inyo Mountains slender salamander	CSSC	Dolomite
Charadrius alexandrinus nivosus	Snowy Plover	FT, CSSC	Lone Pine, Dolomite
Vireo bellii pusillus	Least Bell's Vireo	FE, SE	Lone Pine
Icteria virens	Yellow-breasted Chat	CSSC	Lone Pine
Gila bicolor snyderi	Owens tui chub	FE, SE	Lone Pine, Dolomite
Euderma maculatum	spotted bat	CSSC	Lone Pine, Keeler
Antrozous pallidus	pallid bat	CSSC	Lone Pine
Myotis yumanensis	Yuma myotis	none	Dolomite
Corynorhinus townsendii	Townsend's big-eared bat	CSSC	Dolomite
Microtus californicus vallicola	Owens Valley vole	CSSC	Lone Pine
Ovis canadensis sierrae	Sierra Nevada bighorn sheep	FE, SE, FP	Lone Pine
Pyrgulopsis wongi	Wong's springsnail	none	Lone Pine
Myotis ciliolabrum	Western small-footed myotis	None	Keeler
Xerospermophilus mohavensis	Mojave ground squirrel	ST	Keeler

Source: CDFW, 2010.
Species Status: FE – Federal Endangered, FC – Federal Candidate, FT – Federal Threatened, SE – State Endangered, ST – State Threatened, CSSC – California Species of Special Concern, FP – CDFW Fully Protected

Sensitive Habitat Types and Plant Species. No vegetation is present on the Solar Demo project site and the site does not contain suitable habitat for any of the sensitive plant species known for the general project area. Similarly, sensitive habitat types such as alkali seep are not present on the project site. Therefore, construction and operation of the Solar Demo project would have no impact on sensitive habitat types or plant species.

Sensitive Amphibian Species. The Sierra Nevada yellow legged frog and Inyo Mountains slender salamander have not been documented on the valley floor and are not known to occur on the project site. Since the project site lacks water, it would not be anticipated to support frog or salamander populations. Therefore, construction and operation of the Solar Demo project would have no impact on sensitive amphibian species.

Sensitive Bird Species. The Solar Demo site is Gravel Cover devoid of habitat potentially suitable for foraging, nesting, and wintering of sensitive avian species, with the exception of Snowy Plover. However, shorebirds are known for the Shallow Flood areas near the project site at T-35-1, T-35-2, T-36-1, and T-36-2. A detailed listing of bird species observed on Owens Lake is included in the Owens Lake Habitat Management Plan (LADWP, 2010b).

A breeding population of Snowy Plover occurs on Owens Lake. Per the terms of previous mitigation measures, LADWP is required to maintain a baseline of at least 272 Snowy

Plovers as determined during dedicated annual surveys (GBUAPCD, 2003) and a minimum of 523 acres of Shallow Flooding habitat for Snowy Plovers in consultation with CDFW (GBUAPCD, 2008a). This habitat is described as a mix of exposed sandy or gravelly substrate suitable for nesting in close proximity to standing water equal to or less than 12 inches in depth; the 523-acre area has been designated along the east side of the lake (east of T23 and T24). LADWP also maintains a minimum of 1,000 acres of shorebird and Snowy Plover habitat in T23 and 145 acres of habitat shallow flood suitable for shorebird foraging in T4-3. These designated habitat areas would not be disturbed as part of the Solar Demo project. Snowy Plovers responded rapidly to the increasing acreage of shallow flood habitat and the population has averaged 527 birds in the period 2002 to 2012.

Snowy Plover nests have been documented adjacent to the T-36 Shallow Flooding area and it is assumed that individuals may attempt to nest on or in close proximity to the Phase 8 area. Multiple Snowy Plovers have been found using the areas along the existing gravel Corridor 1 Road and have been known to nest on gravel roads elsewhere on Owens Lake. A previous habitat assessment for the 2009 Moat and Row SEIR evaluated the area just west of Phase 8 to be moderate habitat for Snowy Plovers. However, no Snowy Plover nests have been documented in the Phase 8 (or Solar Demo) project area to date nor has this area supported high plover use based on previous lake-wide plover counts.

If present, Solar Demo construction activity could subject Snowy Plovers to noise, vehicular traffic and foot traffic. Continued or repeated disturbance of nesting birds can result in nest failure. Loss of nests, disturbance to breeding and foraging activities, and mortality of individuals due to ground disturbing activities could occur. During project construction, plovers could be killed or injured by vehicle traffic or active nests could be crushed beneath heavy construction equipment. Disruption of nesting Snowy Plovers during construction of the Solar Demo is not anticipated, but if Snowy Plover were present, the impact would be significant.

Once solar facilities are installed, use of the project site by Snowy Plover is not anticipated. Therefore, disruption of nesting Snowy Plovers during maintenance activities in the Solar Demo area would be less than significant.

Implementation of mitigation measures BIO-1 through BIO-5 during project construction, and subsequently during project maintenance activities, would reduce impacts to biological resources to a less than significant level.

Sensitive Fishes. The project site does not contain any water bodies that provide suitable habitat for fishes, nor would the project alter flow patterns to any waterways. Construction and operation of the Solar Demo project would have no impact on sensitive fishes.

Sensitive Bat Species. The sensitive bat species known for the general project area may forage in the general area over the Shallow Flooding ponds. However, neither standing water nor potential roosting habitat (rock crevices or hollow trees) are present on the Solar Demo site. Bat foraging in adjacent Shallow Flooding areas would not be expected to be impacted during construction of the project since construction activity would occur primarily in the

daytime. Therefore, construction and operation of the Solar Demo project would have a less than significant impact on sensitive bat species.

Other Sensitive Mammals. Owens Valley vole, a subspecies of the California vole, is known from wetlands, grasslands, and other grass-dominated sites. Since the project site is devoid of wetlands and grasslands, it does not provide suitable habitat for voles. Sierra Nevada bighorn sheep inhabit alpine meadows, grassy mountain slopes and foothill country near rocky cliffs and bluffs. They are not expected to occur on or near the project site since they are rarely observed on the valley floor. Construction and operation of the Solar Demo project would have no impact on sensitive mammal species.

Summary of Impacts to Sensitive Animal Species. The Solar Demo project site is un-vegetated Gravel Cover devoid of habitat values for sensitive species other than Snowy Plover. With implementation of mitigation measures to reduce impacts on Snowy Plovers, construction and operation of the Solar Demo project would have a less than significant impact on sensitive animal species.

b) and c) **No Impact**. The Solar Demo area does not contain wetlands or riparian habitat that could potentially fall under federal jurisdiction (Clean Water Act Section 404 administered by the U.S. Army Corps of Engineers) such as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support wetland vegetation. The CNDDB lists Alkali Seep as a sensitive habitat type known for the Lone Pine quadrangle. The project site does not contain any seeps or springs. The closest natural wetland areas are the Northwest/Elk Seeps, located southwest of the Solar Demo site (adjacent to T37-1) and the Owens River Delta, located east of the project area. During installation of solar facilities, construction vehicles would travel on existing roadways; adjacent wetland areas would not be impacted. Therefore, since none are located on the project site, construction and operation of the Solar Demo project would have no impact on riparian habitat, wetlands, or other sensitive natural communities.

d) **Less Than Significant Impact.** There are no known migration corridors for mammals within the Solar Demo project area. Tule elk calving is known east of the project site in the Owens River Delta. During calving, cows and calves would not be expected to stray far from vegetative cover and forage. Tule elk have also been observed in the Northwest/Elk Seeps area. However, since the Solar Demo project site is devoid of vegetation, tule elk would not be expected to move across the project site on any regular basis. Similarly, mule deer are associated with vegetation areas and would not be likely to cross the barren Solar Demo project area. There are no known or documented migration corridors for small terrestrial mammals or medium-sized mammals on Owens Lake (GBUAPCD, 2008b).

Owens Lake is an important site along the Pacific Flyway for migratory waterbirds. However, the Solar Demo area is Gravel Cover devoid of vegetation. Aside from potential impacts to Snowy Plover discussed above, there would be no impacts to nesting or brooding of other avian species since other species are dependent on water and vegetation for nursery sites.

Overall, the impact from construction and operation of the Solar Demo project on wildlife migration corridors and nursery sites would be less than significant.

e) **Less Than Significant Impact.** No tree ordinances apply to the project area and no trees are present on the project site. The Inyo County General Plan Goals and Policies document (2001) includes two goals for biological resources issues: Maintain and enhance biological diversity and healthy ecosystems throughout the County, and provide a balanced approach to resource protection and recreation use of the natural environment (Goals BIO-1 and BIO-2). Since the existing project site has minimal habitat value, the project would not conflict with these goals. Therefore, the impact on local policies or ordinances protecting biological resources would be less than significant.

f) **Less Than Significant Impact.** The project site is not within a Significant Natural Area (SNA) as determined by CDFW. LADWP is currently preparing a Habitat Conservation Plan (HCP) for LADWP-owned lands in Inyo and Mono Counties; this plan is not yet finalized but would not cover the Solar Demo project site on Owens Lake since it is not owned by LADWP. However, in compliance with mitigation measure Biology-14 of the 2008 SIP FSEIR (GBUAPCD, 2008b), LADWP prepared the Owens Lake Habitat Management Plan (OLHMP) for the Owens Lake Dust Mitigation Project (LADWP, 2010b). The OLHMP serves as a guide for compatibility between construction, maintenance, and operational needs of the OLDMP under the 2008 SIP FSEIR, and the needs of resident and migratory wildlife resources utilizing the Owens Lake Dust Control Area. The overall goal of the OLHMP is to avoid direct and cumulative impacts to native wildlife communities that may result from the Dust Control Program. A large part of the Phase 8 area was considered as part of the Study Boundary for the OLHMP. Implementation of Solar Demo project would be consistent with the resource management actions described in the OLHMP; relevant measures are consistent with the mitigation measures listed below. Therefore, since the project would not conflict with the goals or management actions contained in the OLHMP, the impact of the Solar Demo project on habitat conservation planning would be less than significant.

Mitigation Measures for Impacts to Biological Resources

To reduce impacts to biological resources to a less than significant level, the following mitigation measures shall be implemented.

BIO-1. Construction Worker Education Program. To minimize potential direct impacts to Snowy Plover from construction activities, LADWP shall continue the construction worker education program consistent with the previous approach and per CDFW recommendations. The program shall be based on Snowy Plover identification, basic biology and natural history, alarm behavior of the Snowy Plover, and applicable mitigation procedures required of LADWP and construction personnel. The program shall be conducted by a biologist familiar with the biology of the Snowy Plover at Owens Lake. The education program shall explain the need for the speed limit in the Snowy Plover buffer areas and the identification and meaning of buffer markers. All construction, operation, and maintenance personnel working within the project area shall complete the program prior to their working on the lake bed.

BIO-2. Preconstruction Surveys for Snowy Plover. To minimize potential direct impacts to Snowy Plover within the project area due to construction activities, LADWP shall conduct a preconstruction survey for Snowy Plover in all potential Snowy Plover habitat prior to any construction activity that is performed during the Snowy Plover breeding season (March 15 to August 15). Preconstruction surveys shall be performed no more than 7 days prior to the start of ground-disturbing activities. A 200-foot buffer shall be placed around all active Snowy Plover nests that are discovered within the construction area. This buffer shall protect the plover nest from both destruction and construction noise. Green-colored stakes of less than 60 inches in height shall be used to mark buffer edges, with stakes spaced at approximate cardinal directions. Maps of Snowy Plover nest locations shall be posted at the construction office and made available to all site personnel. The activity of the nest shall be monitored by a biological monitor, as per existing guidelines for the North Sand Sheet and Southern Zones dust control projects and any revisions to the monitoring protocol that have been approved by CDFW. Active Snowy Plover nests shall be monitored at least weekly. The nest buffer shall remain in place until such time as the biological monitor determines that the nest is no longer active and that fledglings are no longer in danger from proposed construction activities in the area. Buffers shall be more densely marked where they intersect project-maintained roads. Vehicles shall be allowed to pass through nest buffers on maintained roads at speeds less than 15 miles per hour, but shall not be allowed to stop or park within active nest buffers. Permitted activity within the nest buffer shall be limited to foot crews working with hand tools and shall be limited to 15-minute intervals, at least one hour apart, within a nest buffer at any one time.

BIO-3. Snowy Plover Nest Speed Limit. To minimize potential direct and cumulative impacts to Snowy Plover and other sensitive biological resources from vehicles construction activities, LADWP shall implement a speed limit of 30 miles per hour within all active construction areas on Owens Lake during construction of dust control measures. Speed limits shall be 15 miles per hour within active Snowy Plover nest buffers. Designated speed limits for other construction areas outside of active nest buffers shall be maintained at 30 miles per hour where it is determined to be safe according to vehicle capabilities, weather conditions, and road conditions. Site personnel shall be informed daily of locations where active nest buffers overlap with roads in the construction area. Signs shall be posted that clearly state required speed limits. Speed limit signs shall be posted at all entry points to the lake. The number of speed limit signs shall be kept at a minimum near active Snowy Plover nest areas to reduce potential perches for raptors and other Snowy Plover predators and shall be outfitted with Nixalite or the functional equivalent if greater than 72 inches in height at entry points to the lake and 60 inches in height by active Snowy Plover nest areas.

BIO-4. **Potential Predator Perches**. To reduce potential perches for raptors and other Snowy Plover predators, any equipment more than 6 feet (or 72 inches) high shall be outfitted with Nixalite or the functional equivalent.

BIO-5. Lighting Best Management Practices. To minimize indirect impacts to nesting bird species associated with project lighting during construction activities, LADWP shall institute all best management practices to minimize lighting impacts on nocturnal wildlife

consistent with previous requirements and CDFW recommendations. If night work is deemed necessary, then construction crews shall make every effort to shield lighting on equipment downward and away from natural vegetation communities or playa areas, and especially away from known nesting areas for Snowy Plovers during the nesting season (March to August).

With implementation of the above mitigation measures, project-related impacts on biological resources would be reduced to a level of less than significant.

2.3.5 Cultural Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion: A field survey of the Phase 8 project area (including the Solar Demo site) for observable cultural resources was conducted by archaeologists with cross-training in paleontology from June 16 – 18, 2010, and June 22 – 25, 2010. The reports completed for the project are on file with LADWP. To protect resources, site records are not appended to the Initial Study.

a) and b) **Less than Significant Impact with Mitigation Incorporated.** A records search was completed at the Eastern Information Center (EIC) at the University of California Riverside for the entire Owens Lake in 2009. The following sources were consulted:

- EIC base maps: USGS series topographic quadrangles.
- Pertinent survey reports and archaeological site records were examined to identify recorded archaeological sites and historic-period built-environment resources (such as buildings, structures, and objects) within or immediately adjacent to the project area.
- The California Department of Parks and Recreation's California Inventory of Historic Resources (1976) and the Office of Historic Preservation's Historic Properties Directory (2007), which combines cultural resources listed on the California Historical Landmarks, California Points of Historic Interest, and those listed in or determined eligible for listing

in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR).

Based on the records searches, 12 previous studies were conducted in the general project vicinity and prehistoric and/or historic resources are recorded in the project area.

Other research included a review of U.S. General Land Office (GLO) plat maps of the project areas from the BLM. The GLO plat maps revealed no historic resources within the project areas. However, a review of historic USGS topographic maps reveals the presence of former structures on the Ballarat, California USGS topographic map (scale 1:250000) from 1913 and reprinted in 1927, and 1947. The former structures include two former buildings and a railroad spur in the vicinity of the "*Soda Works Plant*."

A search of the Sacred Lands File housed at the Native American Heritage Commission (NAHC) resulted in the identification of no Native American cultural resources within a 0.5 mile radius of the project area.

The Phase 8 project area was surveyed via pedestrian transects at 20 meter intervals in 2010. Finds included new prehistoric sites, extensions of previously recorded sites, historic resources (updated site record and newly recorded resources) and isolates. Resources characterized as historic era isolates or prehistoric isolates do not meet the definition of unique archaeological resources or historical resources under CEQA, and did not require avoidance or mitigation for the Phase 8 project.

Between April 14 and 21, 2011, sites in the Phase 8 area (including sites in the Solar Demo project area) were evaluated for eligibility in the California Register of Historical Resources (CRHR). A total of 32 shovel test pits (STPs) were excavated and 7 surface collection units (SCUs) were collected. Prehistoric sites were determined to consist of intact, primary surface and subsurface deposits that exhibited dense lithic scatters associated with lacustrine beach occupational zones. The lithic assemblage consisted of a mix of allochthonous material (raw materials brought to the site) from the surrounding mountain bedrock sources and exhibited the entire lithic reduction sequence, as well as the presence of groundstone and tabulars, toolstone scrapers, cores, preforms, darts and projectile points. These sites were considered comparable to other significant sites on the playa of Owens Lake. The sites were determined to be eligible for the CRHR and were therefore considered to be significant under CEQA. Significant sites were located within the Solar Demo project area.

Between July 6 and 29, 2011, mitigation in the form of archaeological data recovery was conducted at sites within the Phase 8 area. During monitoring of Phase 8 construction, additional resources were identified.

Therefore, the 5.3-acre Solar Demo site has been previously surveyed, evaluated and mitigated for significant cultural resources as part of the Phase 8 project. Further disturbance of the site for installation of the solar facilities would include pile driven piers for foundations and installation of a concrete pad for the two inverter units. Significant impacts to cultural resources from these activities are not anticipated. However, the project would

also include trenching for installation of a power line in the Corridor 1 Road. Construction of Corridor 1 previously disturbed soils in this area. However, since monitoring during construction of Phase 8 project resulted in the identification of additional cultural materials, there would be the potential for disturbance to cultural resources during power line installation for the Solar Demo project.

Therefore, mitigation measures CUL-1 and CUL-2 shall be implemented to reduce impacts on cultural resources to less than significant levels.

CUL-1. During earthwork necessary for power line installation in the Corridor 1 Road, a qualified archaeological monitor shall be present. The Lone Pine Paiute-Shoshone tribe shall be contacted prior to the start of project construction. Qualified Lone Pine Paiute-Shoshone cultural resources monitors shall be afforded an opportunity to be present during earthwork and excavation activities associated with construction of the Solar Demo project.

CUL-2. If previously unrecorded cultural resources are encountered during the project, all work shall cease within 100 feet of the discovery until the find can be evaluated by a qualified archaeologist. Work shall not resume until the discovery has been evaluated and the recommendations of a qualified archaeologist have been implemented.

c) **Less than Significant Impact with Mitigation Incorporated.** The Owens Lake area is mapped as Quaternary lake and sand deposits, edged by Quaternary alluvium (Mathews and Burnett, 1965, Streitz and Stinson, 1974). The older Pleistocene and late Holocene portion of each geological unit is considered to have moderate sensitivity for paleontological resources. Unique paleontological resources were discovered in older Pleistocene and late Holocene geological units located in the eastern and southern Owens Lake playa (GBUAPCD, 2008b). Survey of the 2003 SIP project area recovered several Pleistocene vertebrate fossils, including duck, rodent, and pocket gopher (Gust, 2003). In addition, locally extinct invertebrates were recovered. These fossil materials were located in a limited area, on the east side of the lake at localities that appear to have been subject to deflation (erosion by wind) to the east, south of, and within 1 mile of Swansea. These resources were found within sands and gravels (GBUAPCD, 2008b).

A fossil locality search was conducted on July 12, 2010, using the Berkeley Natural History Museum (BNHM) online database, which includes data from the University of California, Museum of Paleontology (UCMP, 2010). The database search identified 733 fossil localities within Inyo County. They include 19 specimens from the Precambrian, 281 from the Cambrian, 146 from the Ordovician, 35 from the Silurian, 106 from the Carboniferous, 80 from the Permian, 35 from the Tertiary, 7 from the Quaternary,14 of unknown age and 10 disputed fossils. The 2008 SIP SEIR (GBUAPCD, 2008b) summarized records searches conducted with the San Bernardino County Museum, the Natural History Museum of Los Angeles County, and the Eastern California Museum in Independence. Surveys in 2003 identified seven fossil localities on the Owens Lake playa between Swansea and Keeler along SR 136.

A preliminary paleontological field survey of the Phase 8 area was conducted by archaeologists cross-trained in paleontology on June 16 – 18 and June 22 – 25, 2010 (GANDA, 2011). During the survey, no paleontological materials were observed. During monitoring for construction of the Phase 8 project, fossils were recovered, including a pelvis bone from a grey wolf (GANDA, 2012). The paleontologists obtained samples of the fossils, which comprise fish, birds, mammals, mollusks, plants, and stromatolites found in both playa and subsurface contexts. Unique fossil resources have been identified in Owens Lake DCAs, such as species of fish that diverge from other similar species. Paleontological remains are considered to be limited, nonrenewable, scientific, and educational resources. Some fossils recovered at Owens Lake qualify as unique resources because they represent the best examples of specific species found in the region, particularly if they are discovered in an undisturbed context. Other fossils in this collection qualify as unique paleontological resources because they provide evolutionary, paleoclimatic, or paleontological data important to our understanding of geologic history (SVP, 1996).

The Solar Demo project site is within 1 mile of the regulatory shoreline, an area mapped as a paleontological monitoring area in the 2008 SIP SEIR (GBUAPCD, 2008b) and identified as paleontologically sensitive during investigations for the Phase 7a and Phase 8 projects. Installation of solar panels and foundations would be conducted in the portion of the Phase 8 project area which has been previously disturbed for installation of geotextile and 4-inch layer of Gravel Cover. The minimal earthwork required to install the panels and inverter units is not anticipated to significantly impact paleontologically resources. However, installation of the power line in the Corridor 1 Road has the potential to disturb soils containing paleontological resources.

Therefore, mitigation measure CUL-3 shall be implemented to protect paleontological resources from disturbance during construction of the power line for the Solar Demo project:

CUL-3. During earthwork necessary for power line installation in the Corridor 1 Road, a paleontological monitor shall be present. The monitor may be a qualified paleontological monitor or a cross-trained archaeologist, biologist, or geologist working under the supervision of a qualified principal paleontologist. If paleontological materials are discovered that are significant or potentially significant, then the following would apply: data recovery and analysis, preparation of a data recovery report or other reports, and accession of recovered fossil material at an accredited paleontological repository (e.g., the University of California's Museum of Paleontology).

d) **Less than Significant Impact with Mitigation Incorporated.** Based on a review of the available historic maps available for the area, no recorded cemeteries are located within the proposed project area (1908, 1913, and 1931). Human remains were not found in the course of the 2010 pedestrian surveys at the project sites. However, in the unexpected event that human remains are discovered, the Inyo County Coroner would be contacted, the area of the find would be protected, and provisions of State CEQA Guidelines Section 15064.5 would be followed.

With implementation of the mitigation measure CUL-4, project-related impacts on human remains potentially present in the project area would be less than significant.

CUL-4. In the unexpected event that human remains are discovered, the Inyo County Coroner shall be contacted, the area of the find shall be protected, and provisions of State CEQA Guidelines Section 15064.5 shall be followed.

With implementation of the above mitigation measures, project-related impacts on cultural resources would be less than significant.

2.3.6 Geology and Soils

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems, where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Discussion: The project area is on Owens Lake, south of Lone Pine in the Owens Valley. The Owens Valley of eastern California is a deep north-south trending basin, lying between the Sierra Nevada to the west and the White-Inyo Mountains to the east. The Owens Valley was formed as a fault block basin with the valley floor dropped down relative to the mountain blocks on either side. The Owens Valley is the westernmost basin in a geologic province known as the Basin and Range, a region of fault-bounded, closed basins separated by parallel mountain ranges stretching

from central Utah to the Sierra Nevada and encompassing all of the state of Nevada. Geological formations in the project areas are of Cenozoic age, chiefly Quaternary.

The soils in Owens Valley contain mostly Quaternary alluvial fan, basin-fill, and lacustrine deposits (Miles and Goudy, 1997). On alluvial fans, the soils are mostly Xeric and Typic Torrifluvents, Xeric and Typic Torriorthents, and Xeric and Typic Haplargids (Miles and Goudy, 1997). All soils on alluvial fans are well drained (Miles and Goudy, 1997).

a)-i) and a)-ii) **Less Than Significant Impact.** The west side of the Basin is bounded by a north-south trending fault zone along the east side of the Sierra Nevada known as the Sierra Nevada Frontal Fault (Stone et. al., 2000). The east margin of the Basin is delineated by the Inyo Mountains Fault, which is a belt of west-side-down normal faults along the Inyo Mountains (Hollett et. al., 1991; Neponset, 1999). Roughly in the middle between the Inyo Mountains Fault and Owens Valley Fault is the Owens River Fault (Neponset and Aquila, 1997). To the south, a number of unnamed fault segments were mapped in front of the Coso Range (Stinson, 1977; Hollett et. al., 1991).

The Solar Demo project site is located on the Lone Pine USGS quadrangle which includes a designated Alquist-Priolo Special Studies Zone. Surface rupture on local faults is also possible outside of the currently mapped active traces of these range-front faults. However, since habitable structures would not be built as part of the proposed project, people would not be exposed to adverse effects involving seismic ground shaking. Damage to project facilities such as the solar panels or foundations would be repaired as necessary. Therefore, impacts related to seismic events would be less than significant.

a)-iii) **Less Than Significant Impact.** The project does not expose people or structures to potential substantial adverse effects involving strong seismic-related ground failure. Ground failure by liquefaction requires saturated soils, which would rarely occur on the Solar Demo project area. Since habitable structures would not be built as part of the proposed project, people would not be exposed to adverse effects involving seismic-related ground failure. Damage to project facilities such as solar panels or foundations would be repaired as necessary. Therefore, impacts related to ground failure would be less than significant.

a)-iv) **Less Than Significant Impact.** The project site is located well away from the mountain front, which has slopes steep enough to initiate a landslide during an earthquake. Additionally, since habitable structures would not be built as part of the proposed project, people would not be exposed to adverse effects involving landslides. Damage to project facilities such as solar panels or foundations would be repaired as necessary. Therefore, impacts related to landslides would be less than significant.

b) **Less Than Significant Impact.** Soil disturbance related to the proposed project would be limited to installation of pile driven pier foundations in approximately one-third of the project area and trenching for installation of the power line in the Corridor 1 Road. Since only small areas of soil disturbance would be exposed at any one time, impacts related to erosion and loss of topsoil would be less than significant.

c) **Less Than Significant Impact.** Only in extremely wet years would the soils of the Solar Demo project area be saturated and potentially subject to liquefaction. However, since no habitable structures would be built as part of the proposed project, the impact would be less than significant.

d) **No Impact.** Habitable structures would not be built as part of the proposed project. Therefore, there would be no project-related impacts from expansive soils.

e) **No Impact.** Sanitation facilities are not present or proposed for the project site. Therefore, there would be no impact on soils related to wastewater disposal.

2.3.7 Greenhouse Gas Emissions

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Discussion: Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons and perfluorocarbons) and sulfur hexafluoride. Each GHG is assigned a global warming potential. The global warming potential is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential rating system is standardized to CO_2, which has a value of one. For example, CH_4 has a global warming potential of 21, which means that it has a global warming effect 21 times greater than CO_2 on an equal-mass basis. Total GHG emissions from a source are often reported as a CO_2 equivalent (CO_2e). The CO_2e is calculated by multiplying the emission of each GHG by its global warming potential and adding the results together to produce a single, combined emission rate representing all GHGs. On a national scale, federal agencies are addressing emissions of GHGs by reductions mandated in federal laws and Executive Orders. Several states have promulgated laws as a means to reduce statewide levels of GHG emissions. In particular, the California Global Warming Solutions Act of 2006 directs the State of California to reduce statewide GHG emissions to 1990 levels by the year 2020.

Assembly Bill (AB) 32, California Global Warming Solutions Act of 2006, was signed into law on September 27, 2006. AB 32 requires CARB, in coordination with other State agencies and

members of the private and academic communities, to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program. Under the provisions of the bill, by 2020, statewide greenhouse gas emissions would be limited to the equivalent emission levels in 1990. On December 12, 2008, CARB adopted its Climate Change Scoping Plan pursuant to AB 32 (CARB, 2008). The Scoping Plan was re-approved by CARB on August 24, 2011. The scoping plan indicates how these emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions.

The potential effects of proposed GHG emissions are by nature global, and have cumulative impacts. As individual sources, project GHG emissions are not large enough to have an appreciable effect on climate change. Therefore, the impact of proposed GHG emissions to climate change is discussed in the context of cumulative impacts.

As a power utility, the majority of LADWP's GHG emissions results from power generation. Other GHG emissions are a result of vehicle and equipment use for construction and operation of LADWP facilities. To reduce Department-wide GHG emissions, LADWP has instituted various programs including: increasing the generation of renewable energy to 33 percent by 2020, early divestiture of coal generation, repowering existing natural gas power plants, adopting an aggressive energy efficiency program, and use of electric fleet vehicles.

a) **Less Than Significant Impact.** Project-related GHG emissions would be limited to air pollutants generated from construction vehicles during the short (3-month) construction period. As described in Section 2.3.3 Air Quality, construction of the project would result in less than significant combustion emissions from vehicles and equipment. Once operational, the project would reduce GHG emissions by generation of solar power for the OLDMP. The impact on emissions of GHG, and thus climate change, would be not only less than significant, but beneficial.

b) **No Impact.** The Solar Demo project would provide power for the OLDMP, assist the City of Los Angeles in meeting its Renewable Portfolio Standard goals and reduce reliance on fossil-fuel generated power. Solar projects are consistent with greenhouse gas policies and regulations. Therefore, the project would have no adverse impact on GHG policies.

2.3.8 Hazards and Hazardous Materials

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Discussion: Hazardous materials are not currently used or stored on the project site.

a) and b) **Less Than Significant Impact.** Construction of the proposed project would require the routine transport, use, and storage of limited quantities of gasoline and diesel fuel, and potentially degreasers and solvents for construction vehicle maintenance. The existing LADWP Sulfate Facility is located off Sulfate Road west of SR 136, on the east side of the lake. This facility includes a vehicle wash station, refueling station, and fuel tanks as well as areas for vehicle maintenance. Other chemical use is not anticipated.

LADWP would employ standard operating procedures for the routine transport, use, storage, handling, and disposal of hazardous materials related to the construction of the solar facilities. Therefore, with adherence to the standard operations procedures for hazardous

materials use, impacts related to release or accidental exposure to humans or the environment would be less than significant.

c) **No Impact.** There are no schools within ¼ mile of the Solar Demo project area. The closest schools are located in Lone Pine, over 5 miles from the project site. Therefore, the proposed project would have no impact on hazardous materials release within ¼ mile of an existing or proposed school.

d) **No Impact.** Section 65962.5 of the California Government Code requires the California Environmental Protection Agency (CalEPA) to update a list of known hazardous materials sites, which is also called the "Cortese List." The sites on the Cortese List are designated by the State Water Resources Control Board, the Integrated Waste Management Board, and the Department of Toxic Substances Control.

Based on a search of hazardous waste and substances sites listed in the Department of Toxic Substances Control (DTSC) "EnviroStor" database; a search of leaking underground storage tank (LUST) sites listed in the State Water Resources Control Board (SWRCB) "GeoTracker" database; and a search of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit, there were no sites listed on or adjacent to the project site. Therefore, the project would have no impact related to hazardous waste sites.

e) and f) **Less Than Significant Impact.** Seven public access airports and six private airstrips are located throughout Inyo County (Inyo County, 2001). The Lone Pine Airport is closest to the project site; it is located approximately 4 miles to the north. However, the project does not propose new tall structures (aside from one power pole of similar size to existing power poles along Brady Highway) and the project area is not located sufficiently near either a private airstrip or public airport to pose a safety risk. Less than significant glare impacts from the solar panels are discussed in Section 2.3.1, above. Therefore, project-related impacts on airport safety would be less than significant.

g) **Less Than Significant Impact.** Limited numbers of construction and delivery trucks would travel to the project site, primarily via Hwy 395. Internal Owens Lake roadways (not part of an emergency evacuation plan route) would also be used throughout the construction period. Since Owens Lake is not designated as an emergency staging area, the project would have a less than significant impact on emergency access and evacuation plans.

h) **Less Than Significant Impact.** The project area is not typically subject to wildland fires and the project site is devoid of vegetation and covered with Gravel Cover. Habitable structures do not exist and none are proposed for the project site. The proposed solar panels are made of non-combustible items (glass and metal), mounted on metal poles and with concrete ballast. The installation of the solar panels would meet all building and safety codes, including fire codes. Therefore, installation of solar facilities would have a less than significant impact related to wildland fires.

2.3.9 Hydrology and Water Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion: The floor of the Owens Valley ranges in elevation from a low of approximately 3,550 feet above mean sea level (MSL) on the Owens Lake bed to the south to approximately 4,100 feet above MSL near Bishop to the north. Topographically, the bed of Owens Lake is relatively flat with only 50 feet of topographic relief from the regulatory shore to the lowest portion of the lake bed. The lake bed can be divided into two main areas including the brine pool (below an elevation of 3,553.53 MSL) and the playa (the area between the brine pool and the historic shoreline at 3,600 MSL). The playa generally consists of laustrine and alluvial sediments

ranging in size from fine gravels to clays and containing a high salt content. The brine pool is the remnant portion of the historic Owens Lake and contains a high accumulation of mineral salts. The brine pool is generally wet during part of the year, depending on the amount of precipitation and runoff from the surrounding mountains.

a) and f) **Less than Significant Impact.** Beneficial uses and water quality objectives are specified in the Water Quality Control Plan for the Lahontan Region (Basin Plan) prepared by the Lahontan Regional Water Quality Control Board (Regional Board, 2005). Relevant to the project site, beneficial uses are designated for Owens Lake and Owens Lake wetlands (**Table 6**).

Table 6
Beneficial Uses of Owens Lake

Surface water	MUN	ARG	GWR	REC-1	REC-2	COMM	WARM	COLD	SAL	WILD	WQE	FLD
Owens Lake				X	X	X	X	X	X	X		
Owens Lake Wetlands	X	X	X	X	X		X	X		X	X	X

MUN – municipal and domestic supply; AGR – agricultural supply; GWR – groundwater recharge, REC-1 – water contact recreation; REC-2 – noncontact water recreation; COMM – commercial and sportfishing; WARM – warm freshwater habitat; COLD – cold freshwater habitat, SAL – inland saline water habitat; WILD – wildlife habitat, WQE – water quality enhancement; FLD - flood peak attenuation/flood water storage.
Source: Regional Board, 2005.

Waterbody-specific numeric objectives for the protection of these beneficial uses are not specified in the Basin Plan for Owens Lake. However, narrative and numeric water quality standards applicable to all surface waters (including wetlands) in the region are applicable for: ammonia, coliform bacteria, biostimulatory substances, chemical constituents, total residual chlorine, color, dissolved oxygen, floating materials, oil and grease, non-degradation of aquatic communities and populations, pesticides, pH, radioactivity, sediment, settleable materials, suspended materials, taste and odor, temperature, toxicity, and turbidity.

No waste discharges are associated with operation of the proposed project. Groundwater dewatering is not anticipated to be required for project construction or operation, therefore there would be no project-related impacts related to dewatering discharges. During project construction, disturbance to surface soils would result from installation of driven pile pier foundations and installation of a power line in the Corridor 1 Road. Since site disturbance would exceed 1 acre, during construction, stormwater would be managed in accordance with BMPs identified in a SWPPP completed in compliance with the NPDES General Permit for Storm Water Discharges Associated with Construction Activity (General Permit). With implementation of the required SWPPP, potential increases of sediment load in stormwater

would not adversely affect surface water beneficial uses and impacts would therefore be less than significant. The impact on water quality would be less than significant.

b) **Less than Significant Impact.** Construction of the project would require installation of a power line in the Corridor 1 Road. Dust is routinely controlled on this roadway using a water truck and dust would be similarly managed during Solar Demo project construction. Water trucks would be filled from existing J stands off the Brady Highway pipeline; the water source is the Los Angeles Aqueduct and therefore originally Owens Valley surface or groundwater. Otherwise, construction and operation of the Solar Demo project would not require the use of water. Note that the geotextile under the gravel layer covering the site is permeable. The project would not substantially alter groundwater recharge at the site. Therefore, impacts on groundwater would be less than significant.

c), d), and e) **No Impact.** Corridor 1 Road and the existing berms around the Phase 8 area divert stormwater flows around the project site. Installation of solar facilities within a 5.3-acre portion of the Phase 8 area would not result in substantial erosion or siltation, flooding, or add a substantial source of polluted runoff. Since drainage from the project area would flow in the same direction as existing conditions and eventually to the brine pool, the proposed Solar Demo project would have no impact on drainage pattern or stormwater drainage.

g) and i) **No Impact.** A 100-year floodplain has been delineated on the Owens River and most of Owens Lake below the historic shoreline (Federal Emergency Management Agency [FEMA], 2011). However, no habitable structures are proposed as part of the project. The redirection of flood flows would not risk habitable structures since none are present on the lake. No levees or dams are present on the project sites and no off-site levees or dams would be modified as part of project implementation. The project would have no impact on housing or structures in a 100-year flood hazard area.

h) **Less than Significant Impact**. Berms protect the Phase 8 gravel areas from inundation and washout and stormwater flows towards the brine pool. The Corridor 1 Road would also provide inundation protection for the Solar Demo project site. With implementation of the Solar Demo project, stormwater flows would continue to be directed toward the T-36 Shallow Flooding areas and then toward the brine pool. No new berms are proposed. Since this is the existing direction of stormwater flows, impacts on redirection of flood flows would be less than significant.

j) **No Impact.** Due to the distance to the ocean, tsunami is not relevant for the proposed project. Depending on volume conditions, localized seiche of the brine pool is possible but would not expose people or structures at the Solar Demo site to loss, injury or death. Due to the low relief of the Owens Lake area, mudflows are not likely, and would not impact habitable structures since none are present. The project would have no impacts related to seiche, tsunami or mudflow.

2.3.10 Land Use and Planning

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒	☐

Discussion:

a) **No Impact.** The proposed project is located in an area zoned for open space (Inyo County, 2010). The closest communities to the Solar Demo project site are located off the Owens Lake bed. The Boulder Creek RV Park is located approximately 2.8 miles northwest at the intersection of Hwy 395 and Brady Highway. There are residences in Dolomite (located approximately 2.7 miles to the east). Lone Pine is approximately 5 miles to the north and Keeler is approximately 7 miles to the southeast. No habitable structures are located on or immediately adjacent to the project site, and none are planned as part of the proposed project. Therefore, there would be no project-related impacts on established communities.

b) **Less Than Significant Impact.** The Solar Demo project area is located on the dry Owens Lake bed, on land owned and operated by the State of California by the CSLC. A lease amendment from CSLC would be required in order to install solar facilities on the project site. In granting the lease amendment, CSLC would consider the Public Trust Doctrine. Public Trust Doctrine is sufficiently flexible to encompass changing public needs, such as to include the preservation of the lands in their natural state for scientific study, as open space and as wildlife habitat (CSLC, 2007). The Solar Demo project would promote the scientific study of green energy generation. The proposed project would be consistent with State policies promoting development of renewable energy.

GBUAPCD's 2008 SIP SEIR found that the proposed 15.1 square miles of DCMs would be consistent with public trust values of the Public Trust Doctrine since the dust program would maintain the current open space and assist in natural resource preservation, while maintaining recreational opportunities. Specifically in the Phase 8 area, installation of the geotextile membrane and gravel layer did not alter site access for public recreation, aesthetic impacts were minimized by gravel color selection, and biological resources impacts were mitigated. The Phase 8 project reduced air pollutant emissions, a beneficial impact on public health. LADWP found that the Phase 8 project was consistent with the Public Trust Doctrine and impacts on land use were less than significant (LADWP, 2010a).

However, as part of the CSLC lease process, the loss of potential enhancement of Public Trust values on the 1,300-acre Phase 8 DCA were mitigated. Based on the existing conditions of the project site, installation of solar facilities on a 5.3-acre portion of the Phase 8 area is compatible with Public Trust Doctrine and would not further impact Public Trust values on this site. Therefore, the Solar Demo project would have no impacts on Public Trust values.

Inyo County General Plan. The Land Use Element of the Inyo County General Plan (2001) includes Policy LU-5.6 State and Federal Lands Designation (SFL): This designation applies to those State- and Federally-owned parks, forests, recreation, and/or management areas that have adopted management plans. The Conservation/Open Space Element of the Inyo County General Plan (2001) includes Policy REC-1.2 Recreational Opportunities on Federal, State, and LADWP Lands: Encourage the continued management of existing recreational areas and open space, and appropriate expansion of new recreational opportunities on federal, state, and LADWP lands. LADWP maintains public access on Owens Lake in the dust control areas under its management. During project construction, access to the Solar Demo site would be restricted for public and worker safety. Once the solar facilities are installed, access to the site would not be restricted except for fencing around the inverter units (1,600 square-foot concrete pad). No other fencing, barriers, or obstructions are proposed. Therefore, the Solar Demo project would be consistent with existing land use plans and policies and project-related impacts on land use would be less than significant.

Owens Lake Master Planning Process. LADWP convened the Owens Lake Planning Committee to collaboratively work to develop a Master Plan for the Owens Lake. The Plan will be a document that identifies a vision, broadly-supported goals, objectives, actions and projects to enhance the Owens Lake bed, including dust mitigation, habitat and wildlife, water efficiency, renewable energy resources, and economic interests. The Plan will build upon concepts and technical information developed during the Conservation Action Plan process and provided within the OLHMP, as well as other relevant plans and efforts. A dust control water conservation target of 50 percent of the annual water budget is thought to be feasible within the context of the Master Plan and if new or modified BACM are approved.

The Planning Committee consists of members that represent the following interest groups: Agriculture/Ranchers, Air Quality, Community, Economic/Local Business, Energy/Solar, Environmental (Bird and Native Plants), Governmental (County, State & Tribal), Open Space, Landowners, Public Access, Public Trust, Recreation and Water. Members live throughout the Owens Valley or work in agencies that have jurisdiction in or around the Owens Lake bed. The outcome of this broad stakeholder process will be a collaborative vision for the future of the Owens Lake bed. A Planning Committee Review Draft of the Master Plan has been prepared (December 2011). Sections 4.4.2.4 and 7.4 of the Draft Master Plan identify solar with gravel and other potential solar as possible projects on Owens Lake.

c) **Less than Significant Impact.** Please see Section 2.3.4 Biological Resources, item f.

2.3.11 Mineral Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Discussion: The Owens Lake Planning Area contains known mineral resources of statewide or regional importance. U.S. Borax (parent company Rio Tinto Mining) mines evaporite minerals from approximately 16,000 acres of leased land on the west side of the lake. Minerals mined include trona (hydrated sodium bicarbonate carbonate), burkeite (silicate) and halite (sodium chloride). Because minerals are mined from the surface, the facility is sensitive to surface water changes on the lake.

Other important mineral resources surrounding the Owens Lake area include gravel deposits associated with alluvial fans and sand deposits associated with the Owens River and local dunes.

Inyo County is the Lead Agency for the processing of surfacing mining reclamation plan applications on private lands, Inyo County's Road Department, City of Los Angeles, and California Department of Transportation borrow pits, and surface mining on federally administered lands. All surface mining operations that disturb greater than 1 acre or move more than 1,000 cubic yards or more are required to have an approved reclamation plan before the start of mining activity.

a) and b) **No Impact.** The Solar Demo project area is approximately 4 miles north of the most northerly portion of the U.S. Borax mineral lease area on Owens Lake; over 9 miles north of active mining operations. Construction activity required for the implementation of the Solar Demo project would not occur on or near the active mining operations or within the U.S. Borax mineral lease area. The project would not increase the volume of stormwater or alter the direction of stormflows near the active mining operations. The project would not impact known mineral resources on Owens Lake.

The Solar Demo project site is covered with a 4-inch layer of gravel from the F.W. Aggregate Dolomite mine (located east of the lake and SR 136). Installation of solar facilities would not require additional gravel or otherwise impact mineral resources. The project would not impact mining operations adjacent to Owens Lake.

2.3.12 Noise

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion: Owens Lake is located in a remote area of the upper Mojave Desert where the main sources of noise are the mining operations on the lake bed, construction and maintenance activities related to the DCMs, and roadway noise along Hwy 395, SR 190, and SR 136. Sensitive noise receptors in the Owens Lake area include residents in the communities surrounding the lake: Keeler, Boulder Creek, Dolomite, Cartago and Olancha.

Per the Public Safety Element of the Inyo County General Plan (2001), the normally acceptable noise level for residential properties ranges up to 60 Ldn and conditionally acceptable noise level ranges up to 70 Ldn. The term "Ldn" refers to the average sound exposure over a 24-hour period. Ldn values are calculated from hourly Leq values, with the Leq values for the nighttime period (10:00 p.m. to 7:00 a.m.) increased by 10 dB to reflect their greater disturbance potential.

a) and d) **Less Than Significant Impact.** The closest noise receptor to the Solar Demo project site is a residence in Dolomite (located approximately 2.7 miles to the east). The closest school is in Lone Pine, over 5 miles north of Owens Lake. During construction of the Solar Demo project, noise would be generated from trucks, a backhoe, an air compressor, generators and a pile driver. Noise would be noticeable to on-lake workers and potentially persons visiting the lake for recreation. With a minimum distance of 2.7 miles to the closest residence, construction noise would not be noticeable to sensitive receptors. For example, construction equipment emitting 90 dBA at 50 feet would attenuate to 44 dBA at 2 miles

(Canter, 1977). Additionally, construction activity would not occur during 10:00 p.m. to 7:00 a.m. when there is greater potential for noise disturbance to residences. Therefore, given the distance from the project site to sensitive residential receptors, the project would not cause noise levels to exceed established thresholds and noise impacts would be less than significant.

b) **Less Than Significant Impact.** Pile driving equipment may create minor groundborne vibration or groundborne noise. Since the closest residents are over 2 miles away and since construction of the pile driven pier foundations would take less than 1 month, impacts related to temporary groundborne vibration or noise would be less than significant.

c) **Less Than Significant Impact**. Noise generated during project operation would include vehicle travel to the site for inspection and maintenance of the solar and monitoring equipment. This routine travel to the site would not generate noise noticeable by any sensitive receptors. Noise impacts from project operation would be less than significant.

e) and f) **No Impact.** Seven public access airports and six private airstrips are located throughout Inyo County (Inyo County, 2001). The Lone Pine Airport is closest to the project site; it is located approximately 4 miles to the north. Therefore, the project would not be located sufficiently near either a private airstrip or public airport to expose people residing or working in the area to experience excessive noise levels. There would be no project-related impacts on noise near an airport/airstrip.

2.3.13 Population and Housing

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion:

a) **Less Than Significant Impact.** Since the project does not include construction of homes or businesses, it would not directly impact population growth in the Owens Lake area. However, construction of the project would require up to 20 workers for solar facility installation. These workers may be LADWP staff or a mix of LADWP staff and contractors. This minor number of workers over an approximately 3 month construction period would have a less than significant impact on population growth.

b) and c) **No Impact.** No habitable structures are located on or immediately adjacent to the Solar Demo project site, and none are planned as part of the proposed project. Therefore, there would be no impacts on housing from construction and operation of the Solar Demo project.

2.3.14 Public Services

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion:

i) **Less Than Significant Impact.** The project area is devoid of vegetation and covered with Gravel Cover. Habitable structures do not exist and none are proposed for the project site. The proposed solar panels would be made of non-combustible items (glass and metal), mounted on metal poles and with concrete ballast. The installation of the solar panels would meet all building and safety codes, including fire codes. Therefore, installation of solar facilities would have a less than significant impact on fire protection services.

ii – v) **No Impact.** Habitable structures are not present on the project site and none are proposed as part of the project. The limited number of construction workers required to implement the project would not generate substantial population growth or create the need for new or expanded public services. Therefore, there would be no project-related impacts on police protection, schools, parks, or other public facilities.

2.3.15 Recreation

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion:

a) **No Impact.** Habitable structures are not present on the project site and none are proposed as part of the project. The limited number of construction workers required to implement the project would not generate substantial population growth or create the need for new or expanded parks. Therefore, the project would have no impact on neighborhood or regional parks or other recreation facilities.

c) **No Impact.** The project does not include the construction of recreational facilities or generate population growth that would require the construction or expansion of recreational facilities. Therefore, there would be no impact on recreational facilities.

2.3.16 Transportation and Traffic

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b)	Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☒	☐

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d)	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e)	Result in inadequate emergency access?	☐	☐	☒	☐
f)	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Discussion: Major roadways around Owens Lake include Hwy 395, SR 136, and SR 190. Roads near the Solar Demo project include the Corridor 1 Road and Brady Highway.

Hwy 395 – Hwy 395 is the main north-south transportation route through Inyo County and the Owens Valley. The majority of Hwy 395 adjacent to the lake is a four-lane divided highway.

SR 136 – SR 136 is a two-lane northwest/southeast highway connecting Hwy 395 to the north and SR 190 to the south. SR 136 has 12-foot-wide lanes with unimproved gravel shoulders in the vicinity of Owens Lake.

SR 190 – SR 190 is a two-lane southwest/northeast highway connecting Hwy 395 to the west and SR 136 to the east. SR 190 has 12-foot-wide lanes with unimproved gravel shoulders in the vicinity of Owens Lake.

Additionally, as part of implementation of the DCMs, an internal network of roadways has been constructed on Owens Lake. Brady Highway roughly bisects existing dust control areas in the south and along the east side of the lake; the roadway crosses the Owens River in the north and is located north of the Solar Demo project area. Corridor 1 Road is a north-south gravel-covered roadway located just east of the Solar Demo project site.

a) and b) **Less Than Significant Impact.** Level of Service (LOS) is a qualitative measure describing operational conditions within traffic stream, or their perception by motorists and/or passengers which is calculated based on a number of design and operating criteria, such as lane width, roadside obstacles, trucks and busses, curvature, grades, etc. (Transportation Research Board, 2000). LOS A reflects free-flow conditions; at LOS E a road is operating at capacity and is congested. Typically, LOS C or LOS D represents acceptable flow conditions. The highway capacity as determined by the Highway Capacity Manual 2000 for a two-lane highway is 1,600 passenger cars per hour (pc/h) for each direction of travel; the capacity of a two lane-highway is 3,200 pc/h for both directions of travel combined. Based on 2008 traffic counts reported by Caltrans, Hwy 395, SR 136, and SR 190 all operate well below capacity at LOS A (Caltrans, 2009).

Deliveries (foundations, solar panels, concrete, fencing, electrical equipment, etc.) and workers commuting to the project site would travel from Hwy 395, SR 190 or SR 136 to Brady Highway to Corridor 1 Road to the project site. Once transported to the site, most construction equipment (backhoe, generators, pile driver, etc.) would remain in place for the duration of the short (3-month) construction period, and then be demobilized. Based on the limited number of workers (approximately 20) and vehicles (approximately 21 off-site vehicles) and the existing excellent LOS on these roadways, project-related impacts on Hwy 395 and other area roadways would be temporary and less than significant.

c) **Less Than Significant Impact.** The project site is located approximately 4 miles south of the Lone Pine Airport. The project does not include tall structures that would alter air traffic patterns but it does include 5.3 acres of solar panels that would reflect up to approximately one-third of the sunlight reaching the panels' surface. As discussed in Section 2.3.1, the resulting glare would be similar to existing levels of light reflected from the Lake bed. Therefore, the impact on air traffic safety would be less than significant.

d) **No Impact.** The project would not include any new roadways or roadway design features. Therefore, the project would have no impact on roadway hazards.

e) **Less Than Significant Impact.** Owens Lake is currently accessible to emergency vehicles via SR 136/Sulfate Road, SR 190/Dirty Socks access road, and Hwy 395/North and South Brady Highway access roads. Construction of the proposed project would temporarily increase the volume of trucks travelling on these roadways but would not alter the access points. The impact of the addition of approximately 20 workers commuting to the site and the occasional delivery truck would be less than significant on emergency access.

f) **No Impact.** The project would not include housing, employment, or roadway improvements relevant to alternative transportation measures. Therefore, there would be no project-related impacts on alternative transportation.

2.3.17 Utilities and Service Systems

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g)	Comply with federal, state, and local statues and regulations related to solid waste?	☐	☐	☒	☐

Discussion:

a) and b) **No Impact.** Habitable structures are not present on the project site and none are proposed as part of the project. The limited number of construction workers (approximately 20) required to implement the project would not create the need for new or expanded water or wastewater service. Wastewater generated at portable toilets or pumped from the septic system at the Sulfate Facility is treated by the Lone Pine Community Services District in compliance with the requirements of the Lahontan Regional Water Quality Control Board. The project will have no impact on water or wastewater treatment facilities or wastewater treatment requirements.

c) **No Impact**. The site does not have storm drain infrastructure or connect to any off-site storm drain facilities. The Phase 8 area is bermed and stormflows drain to the brine pool; installation of the proposed project would not alter the flow pattern. Therefore, the project will have no impact on storm drain facilities.

d) **Less Than Significant Impact**. In addition to the negligible potable water demand from construction workers, water is currently used for dust control along Corridor 1 Road. During excavation of the trench for the proposed power line in the Corridor 1 Road, additional water may be used for dust suppression. Water trucks would be filled from existing J stands off the Brady Highway pipeline; the water source is the Los Angeles Aqueduct and therefore originally Owens Valley surface or groundwater. Since no new supplies or entitlements would be required, the impact on water supplies is less than significant.

e) **Less Than Significant Impact**. Portable toilets would be provided for the approximately 20 construction workers required to build the project. Wastewater would be treated by the Lone Pine Community Services District. Due to the negligible increase in wastewater generated during project construction, the impact on wastewater treatment capacity is less than significant.

f) and g) **Less Than Significant Impact.** Installation of solar facilities on a 5.3-acre site would not generate substantial volumes of solid waste. The limited volumes of solid waste generated by construction workers would be disposed at a permitted landfill in compliance with applicable regulations. The Lone Pine Landfill serves the Owens Lake area and has a remaining site life of over 60 years (GBUAPCD, 2008b). Therefore, impacts related to solid waste disposal would be less than significant.

2.3.18 Mandatory Findings of Significance

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b)	Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	☐	☐	☐	☒
c)	Does the project have impacts that are individually limited, but cumulatively considerable ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, effects of other current projects, and the effects of probable future projects.)?	☐	☐	☒	☐
d)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion:

a) **Less Than Significant Impact With Mitigation Incorporated.** Project construction is not likely to, but could have a potentially significant impact on a sensitive bird species, Snowy Plover. Mitigation measures have been defined to protect plovers, including nesting plovers, from inadvertent disturbance and harm during construction. Therefore, with implementation of mitigation measures, impacts on biological resources would be less than significant.

Cultural resources are known for the project site and were previously mitigated as part of dust control activities. Mitigation measures have been defined to monitor earthwork during construction for unknown, but potentially present, cultural resources. Therefore, with implementation of mitigation measures, impacts on cultural resources would be less than significant.

b) **No Impact**. The goal of the project is to test the constructability and efficacy of solar facilities on Owens Lake. The long-term goal is to increase power generation from renewable sources and decrease reliance on fossil-fuel generated power. There are no short-term goals related to the project that would be disadvantageous to this long-term goal.

c) **Less Than Significant Impact.** Cumulatively with other solar projects in the Owens Valley, the project would be beneficial related to reductions in GHG emissions. Project construction may be concurrent with other construction, and would be concurrent with maintenance activities on the lake. However, due to the limited number of construction workers for the Solar Demo project (approximately 20) and minor number of construction vehicles, cumulative impacts with other construction and maintenance activities on the lake would be less than significant.

d) **Less Than Significant Impact.** The goal of the project is to test the constructability and efficacy of solar facilities on Owens Lake. The long-term goal is to increase power generation from renewable sources and decrease reliance on fossil-fuel generated power – a beneficial impact on human beings. The nearest residence to the project site is approximately 2.7 miles to the east. Temporary impacts from project construction would be less than significant.

Section 3
References, Abbreviations, and Report Preparation

3.1 REFERENCES AND BIBLIOGRAPHY

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3.2 ACRONYMS AND ABBREVIATIONS

AADT	average annual daily traffic
AB	Assembly Bill
AC	alternating current
AFY	acre-feet per year
APE	Area of Potential Effect
AQMP	Air Quality Management Plan
amsl	Above mean sea level
BACM	Best Available Control Measure
bgs	below ground surface
BLM	(United States) Bureau of Land Management
BMPs	best management practices
BNHM	Berkeley Natural History Museum
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAT	Climate Action Team

CCR	California Code of Regulations
CCRI	Climate Change Research Initiative
CDF	California Department of Forestry
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CRHR	California Register of Historic Resources
CSLC	California State Lands Commission
DC	direct current
DCA	dust control area
DCM	dust control measure
DNI	Direct Normal Irradiance
DTSC	Department of Toxic Substances Control
DWR	(California) Department of Water Resources
EIC	Eastern Information Center (at University of California at Riverside)
EIR	Environmental Impact Report
EPA	(United States) Environmental Protection Agency
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
FSEIR	Final Subsequent Environmental Impact Report
GBUAPCD	Great Basin Unified Air Pollution Control District
GCDIS	Global Change Data and Information System
GCRIO	Global Change Research Information Office
GHG	greenhouse gas
GLO	(United States) General Land Office
HCP	Habitat Conservation Plan
Hp	Horsepower
Hwy	Highway
ICWD	Inyo County Water Department
IRP	Integrated Resources Program

IS	Initial Study
kW	kilowatt
LADWP	(City of) Los Angeles Department of Water and Power
LGP	low ground pressure
LOS	Level of Service
LUST	leaking underground storage tank
mm	millimeters
MND	Mitigated Negative Declaration
MOA	Memorandum of Agreement
MSHA	Mine Safety and Health Administration
MSL	mean sea level
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAST	National Assessment Syntheses Team
NPDES	National Pollutant Discharge Elimination System
NREL	National Renewable Energy Laboratory
NRHP	National Register of Historic Places
OLDMP	Owens Lake Dust Mitigation Program
OLHMP	Owens Lake Habitat Management Plan
OSHA	Occupational Safety and Health Administration
pc/h	passenger cars per hour
PM	particulate matter
PM_{10}	particulate matter 10 microns or less in diameter
PV	photovoltaic
RPS	Renewable Portfolio Standard
SB	Senate Bill
SCR	supplemental control requirement
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SNA	Significant Natural Areas
SPCC	Spill Prevention Control and Countermeasure

SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USCCSP	United States Climate Change Science Program
USEPA	United States Environmental Protection Agency
USGCRP	United States Global Change Research Program
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
UWMP	Urban Water Management Plan

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