Public Utilities Department

Initial Study/Mitigated Negative Declaration for the Tequesquite Landfill Photovoltaic System

August 2010

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Introduction

In accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Sections 21000–21177), this Initial Study has been prepared to determine potentially significant impacts upon the environment resulting from the proposed Tequesquite Landfill Photovoltaic System (the Project). In accordance with Section 15063 of the State *CEQA Guidelines*, this Initial Study is a preliminary analysis prepared by the City of Riverside (City) through its Public Utilities Department (RPU) as Lead Agency, in consultation with other jurisdictional agencies, to inform the City decision makers, affected agencies, and the public of potential environmental impacts associated with the implementation of the proposed Project.

Purpose and Need for the Project

The City is committed to becoming a clean, green, and sustainable community. In 2005 the City's Clean and Green Task Force was formed. This Task Force framed the Sustainable Riverside Policy Statement, approved by the City Council in 2007, with a practical emphasis on how the City could implement cleaner, greener, and more sustainable policies and programs. The City Council also directed the City Manager to take the necessary steps to become a model solar city in Southern California and supported the Mayor's endorsement of the U.S. Mayor's Climate Protection Agreement of 2005. That resulted in a 38-item Clean and Green Sustainable Riverside Action Plan (Action Plan). Successful implementation of the Action Plan will ensure sustainable growth in Riverside while preserving the health of the local environment for generations. The Action Plan is a working document to be continually reviewed with progress reports to be presented to the City Council, at least annually.

Reinforcing the blueprint set forth in the Sustainable Riverside Policy Statement and the goals of the U.S. Mayor's Climate Protection Agreement, the Action Plan highlights vital areas of city life under seven topics: Energy, Greenhouse Gas Emissions, Waste, Urban Design, Urban Nature, Transportation, and Water. Contained within the Energy topic, are five items; two of those items will be supported or addressed, at least in part, by implementing the Project. Those two items are:

Item 1: Adopt and implement a policy to increase the use of renewable energy to meet 33% of the City's electric load by 2020.

Item 3: Generate at least 10 MW (enough for 10,000 homes) of electric load from regional zero emissions sources by 2025.

The Action Plan provides a framework that goes beyond City Hall, envisioning Riverside as an environmental leader in the region and country; implementation of the Project would support and contribute to attaining Item 1 of the Action Plan and, at full Project build out, theoretically meet the goal for Item 3 of the Action Plan.

Document Process

The environmental process being undertaken as part of the proposed Project began with the initial project and environmental research. The Initial Study and Draft Mitigated Negative Declaration will be subject to a 30-day public review period. During this review period, public and agency comments on the document relative to environmental issues should be addressed to:

Blake Yamamoto, Senior Water Engineer
Riverside Public Utilities
3901 Orange Street
Riverside, California 92501
byamamoto@riversideca.gov

Comments received during that time will be considered as part of the Project's environmental review and will be included with the environmental documents for consideration by the Riverside City Council.

1. **Project Title:** **Tequesquite Landfill Photovoltaic System**

2. **Lead Agency:** City of Riverside
Attn: Public Utilities Department
3901 Orange Street
Riverside, CA 92501

3. **Contact Person:** Blake Yamamoto, Senior Water Engineer
Phone Number: (951) 826-5549

4. **Project Location:**
The Project location represents the solar panel array site, including associated appurtenances described below, and distribution line routes that will connect the solar-generated power to the City's electrical grid. The Project's solar panel array will be located on the closed Tequesquite Landfill which is generally located southeast of the Santa Ana River, west of the westerly terminus of Tequesquite Avenue, northeast of Rubidoux Avenue, and southwest of Mount Rubidoux (refer to **Figure 1, Vicinity Map** and **Figure 2, Aerial Photograph**). The site of the closed Tequesquite Landfill (Landfill) encompasses approximately 120 acres and includes Assessor's parcel numbers (APNs) 187-090-001, 187-090-003, 187-090-004, 187-090-009, and 187-090-012.

The proposed Tequesquite Landfill Photovoltaic System includes: (i) facilities that will be installed on the top of the Landfill[1]; (ii) facilities that will be constructed south of the Landfill to the east of the existing Landfill Gas Treatment Facility; (iii) the installation of new overhead wires and, where necessary, replacement of power poles on existing pole lines along portions of Dewey Avenue, Grand Avenue, Palm Avenue, Rubidoux Avenue, and Streeter Avenue; and (iv) the placement of new underground cable in existing conduits in portions of Central Avenue, Jurupa Avenue, and Magnolia Avenue (**Figures 3a and 3b, Plaza Circuit 1253 Distribution Route Options**).

5. **Project Applicant/Project Sponsor's Name and Address:**
City of Riverside Public Utilities
3901 Orange Street
Riverside, CA 92501

6. **General Plan Designation:** The Landfill site is designated Private Recreation (PR). The alignments for the Power Grid Connection Options are located within existing street rights-of-way (ROW) or within existing utility easements in areas designated as Commercial (C), Medium Density Residential (MDR), Medium High Density Residential (MDHR), High Density Residential (HDR), Mixed-Use Neighborhood (MU-N), Mixed Use-Village (MU-V), Public Facilities/Institutional (PF), and Public Park (P).

7. **Zoning:** The Landfill Site is zoned Public Facilities (PF). The alignments of the distribution route options are within the ROW of public streets or in an area zoned R-1-7000.

[1] The PV arrays will be placed on approximately 40 acres of the top surface of the Landfill.

8. **Description of Project:**
The proposed Tequesquite Landfill Photovoltaic System includes the following main components: installation of photovoltaic (PV) solar arrays, electrical conduits, and appurtenant facilities on the top surface of the closed Landfill; construction of an approximately 1,800-square foot Electric Equipment Building (EEB) east of the existing Landfill Gas Treatment Facility to contain the electrical inverters and other equipment necessary to distribute the electricity to the Riverside Public Utilities (RPU) power grid; distribution of the generated power to RPU's power grid via existing, and in some cases upgraded, aboveground and underground facilities; periodic maintenance of the PV array; and potential execution of a Power Purchase Agreement (PPA) between the City and a third-party vendor. These components are hereinafter collectively referred to as "the Project."

The proposed Project will be constructed in two or more phases. The first phase will consist of a 1 megawatt (MW) to 5 MW PV system that will serve as a pilot program for RPU. The 1 MW system will occupy a small northwestern portion of the overall Landfill as shown in **Figure 4a, Conceptual Drawings of 1 Megawatt Photovoltaic System.** Second and potential subsequent phases will consist of a 6 MW to 10 MW PV generation system that will occupy approximately 40 acres of the entire northern half of the Landfill cover (**Figure 2** and **Figure 4b, Conceptual Drawings of 10 Megawatt Photovoltaic System)**. Operation of the PV system does not require water except for periodic maintenance (i.e., washing) of the PV panels. Water will be supplied to the Landfill site via tank trunks; therefore, the Project does not include water facilities.

The following paragraphs provide additional information related to the proposed Project:

Solar Arrays

The proposed Project involves the construction of up to a 10 MW photovoltaic (i.e., solar) power generation facility, which will be constructed in at least two phases. The first will consist of a 1 MW to 5 MW system that will serve as a pilot program for RPU. The remaining 6 MW to 10 MW system will be constructed in one or more subsequent phases. Conceptual drawings of how the Landfill site will look from various angles with a 1 MW system are provided on **Figure 4a** and conceptual drawings of a 10 MW system are provided on **Figure 4b**.

The proposed PV array will be either a non-tracking fixed-axis system, that is, the array will not track the movement of the sun or a single- or double-axis system, which will track the movement of the sun. Rigid PV panels are proposed to be mounted on ballasted frames that will be installed on the surface of the Landfill. The frame ballasts will measure approximately ½ square-foot to 1 ½ square-feet each, per panel. The specific type of PV system, panels, and frames will be determined by RPU as part of the final design. The panels will be installed at an angle to accommodate vegetative growth and ongoing maintenance of the Landfill's vegetative cover. The maximum height at which the panels will be constructed above the ground surface will be 15 feet. An adjustable racking system may be used to facilitate adjustments to the array resulting from settlement of the Landfill cover. In order to avoid any penetration into the Landfill cover, all electrical lines will be contained in aboveground lightweight, light gauge steel, flexible conduit. Security fencing and lighting will be installed around the solar arrays.

Electrical Equipment Building

PV systems produce direct current (DC) power that must be converted to alternating current (AC) before entering the City's Power Grid. The electrical equipment required for this conversion may be housed and additional equipment may be stored in an approximately 1,800-square foot building (maximum footprint of 30 feet by 60 feet) that will be constructed south of the Landfill and east of the existing landfill gas treatment facility (refer to **Figure 2**). In addition to the electrical equipment to support the PV system, this building will be equipped with methane monitoring equipment as required by the *Closure-Postclosure Maintenance Plan, Tequesquite Landfill, Riverside, California (*the *Landfill Closure Plan)* and Title 27. The precise location of the EEB (within the area shown in **Figure 2**) will be determined as part of the final design of the 6 MW to 10 MW PV system.

Distribution to the Power Grid

The Project has a planned total generation capacity of 10 MW. Due to the electrical characteristics of RPU's distribution feeder and the need to maintain adequate voltage regulation for the existing electrical services interconnected with the Project, the amount of generation that can be directly interconnected is limited to a peak of 5 MW. Up to 5 MW of solar-generated power will be connected to the existing Mountain View feeder circuit 1364. In order to maintain adequate voltage regulation on the interconnected systems, the Project's remaining 6 MW to 10 MW of anticipated solar-generated power must be separately connected to a different substation feeder source.

The 6 MW to 10 MW of the Project's solar-generated power is proposed to be connected to the 12 kilovolt (kV) feeder nearest to the Landfill, Plaza circuit 1253. The Project proposes a new connection to the Plaza circuit 1253. RPU has identified four alternate routes for this proposed new connection as shown in **Figures 3a and 3b**.

The existing Plaza circuit 1253, will be extended as part of a separate Magnolia Grade Separation project, which will provide a connection from the Plaza Substation to RPU Vault #6021. Each of the distribution route options (DROs) are proposed to provide interconnection at Vault #6021. All four DROs propose to utilize existing pole line routes; however, based on the ability of any specific pole to handle the added weight, existing poles may be replaced to adequately support the existing and proposed overhead wire and structures. All replacement poles will be located within existing pole lines.

As shown in **Figures 3a and 3b**, each of the four DROs shares common sections with one another, therefore, a combination of the four DROs may be chosen by RPU. A brief description of each DRO is provided below, which corresponds with **Figures 3a and 3b**. The route for each DRO is described starting from RPU Vault #6021, which is located on Magnolia Avenue between Sunnyside Drive and Beatty Drive (refer to **Figure 3a**).

DRO 1

From the aforementioned RPU Vault #6021 interconnection, new underground cable will be placed in existing conduits heading south along Magnolia Avenue to Central Avenue and then west along Central Avenue to Palm Avenue. At the northwest corner of Central Avenue and Palm Avenue, the new underground cable will transition to new overhead wire on the existing pole line and continue north along Palm Avenue to Rubidoux Avenue. The overhead wire will continue along Rubidoux Avenue, on the existing pole line, terminating at the Landfill.

DRO 2

From the aforementioned RPU Vault #6021, new underground cable will be placed in existing conduits heading north along Magnolia Avenue to the existing railroad crossing where the existing pole line is located. On the southwest corner of Magnolia Avenue and the railroad crossing, the new underground cable will rise up and transition to new overhead wire on the existing pole line and continue west along Dewey Street to Palm Avenue. The overhead wire will continue north along Palm Avenue to Rubidoux Avenue then continue along Rubidoux Avenue on the existing pole line to the Landfill.

DRO 3

From the aforementioned RPU Vault #6021, new underground cable will be placed in existing conduits heading north along Magnolia Avenue to the existing railroad crossing where the existing pole line is located. On the southwest corner of Magnolia Avenue and the railroad crossing, the new underground cable will transition to new overhead wire on the existing pole line and continue west along Dewey Street to Streeter Avenue. The overhead wire will continue north along Streeter Avenue to Jurupa Avenue. At the southwest corner of Streeter Avenue and Jurupa Avenue, the new overhead wire will transition to new underground cable. The new underground cable will be placed in existing conduits along Jurupa Avenue from Streeter Avenue to Grand Avenue. At the northwest corner of Jurupa Avenue and Grand Avenue, the new underground cable will transition to new overhead wire on the existing pole line and continue north along Grand Avenue to Rubidoux Avenue. The overhead wire will continue along Rubidoux Avenue on the existing pole line to the Landfill site.

DRO 4

From the aforementioned RPU Vault #6021, new underground cable will be placed in existing conduits heading south along Magnolia Avenue to Central Avenue and then head west along Central Avenue to Palm Avenue. At the northwest corner of Central Avenue and Palm Avenue the new underground cable will transition to new overhead wire on the existing pole line and continue north along Palm Avenue to Jurupa Avenue. At the southwest corner of Palm Avenue and Jurupa Avenue the new overhead wire will transition to existing underground cable. The existing underground cable, within existing conduits, is located along Jurupa Avenue from Palm Avenue to Grand Avenue. At the northwest corner of Jurupa Avenue and Grand Avenue, a new portion of underground cable will transition to new overhead wire on the existing pole line and continue north along Grand Avenue to Rubidoux Avenue. The overhead wire will continue along Rubidoux Avenue on the existing pole line to the Landfill site.

Maintenance of the PV Array

The PV array will be washed on a quarterly basis or as needed. A water truck will be used to transport the water to the PV array. The minimal amount of water necessary to wash the array will be used in order to reduce runoff. The runoff will drain from the array into the existing system of drainage culverts on the Landfill. Since the Landfill cover is still undergoing settlement, maintenance will also include periodic inspections of the Landfill cover and adjustments to the solar mounting system as necessary. The PV arrays will be sited and positioned so as not to interfere with the ongoing maintenance of the Landfill cover. Additionally, the PV arrays will be constructed in a modular fashion to allow certain sections to be temporarily taken out of service and moved aside to allow any necessary maintenance work to be performed on the landfill cover in a particular area. According to the *Landfill Closure Plan,* regrading and/or placement of additional cover, revegetation, and mulching over areas in which differential settlement has occurred, is permitted cover maintenance.

Solar Power Purchase Agreement

The City has not finalized how the Project will be delivered, i.e., design/build, design, build/operate. One of the options the City may consider is the execution of a Solar Power Purchase Agreement (SPPA) with a qualified third-party developer for the installation, operation, and maintenance of the PV array. An SPPA is a financial arrangement in which a third-party developer owns, operates, and maintains the PV system, and a host customer, in this instance the City, agrees to site the system on its property and purchases the system's electric output from the solar services provider for a predetermined period. Under the terms of the SPPA, a third-party would procure, install, and operate the PV system on the Landfill and the City would enter into a long-term contract to purchase 100% of the electricity generated by the system from the system owner.

Project Construction

The Project's installation and construction activities will involve: (i) placement of the solar arrays and placement of aboveground flexible conduit and appurtenances on the surface of the Landfill; (ii) minor grading and site preparation for the EEB; (iii) construction of the EEB; (iv) the installation of new overhead wires and, where necessary, replacement of power poles on existing pole lines; and (v) the placement of new underground cable in existing conduits.

Placement of the solar arrays and appurtenances for a 1 MW system is projected to take approximately one month; beginning no earlier than October 1, 2010. Placement of the solar arrays and appurtenances for the remaining 9 MW system is expected to take approximately six months, beginning no earlier than January 1, 2012. No more than 5 heavy-duty diesel-fueled truck trips per day would be required to deliver panels and conduits/appurtenances during installation of the 1 MW system and no more than 15 heavy-duty diesel-fueled truck trips per day would be required during installation of the 9 MW system. A combination of hand and power tools will be used to place and install the PV panels and ballasts on the Landfill surface. Cutting and grinding equipment will be used during installation of steel racks. Welders may also be used.

The Landfill surface will not require grading; however, small amounts of soil, from the existing stockpile on the Landfill site, may be used to smooth the surface, i.e., fill in any depressions, prior to placement of the arrays. Equipment for smoothing portions of the Landfill surface and moving the rack component and panels into place will be limited to no more than two skid steer loaders and two all terrain forklifts. .

Because of previous site preparation work for the landfill gas treatment facility and Tequesquite Road, a minimal amount of grading and site preparation work will be required for the EEB. This work is anticipated to take approximately one week beginning no earlier than October 11, 2010. Construction equipment used for site preparation include one tractor/loader/backhoe, one rubber tired dozer, and one water truck.

Installation of the new overhead wires and replacement power poles (if necessary) for the DROs will entail the use of one line truck, one bucket truck, and one material truck. Installation of the new underground cable in existing conduits will entail the use of one tractor/loader/backhoe, one rubber tired loader, one water truck, one dump truck, and one concrete truck. Construction associated with the DROs is expected to take approximately four months.[2] These operations will take place away from the Landfill, along one or a combination of the DROs described above.

Project Design Features

The proposed Project will include design and construction features, stated below, to avoid significant impacts to the environment. Because these design features have been or will be incorporated into the design of the proposed Project, or are required by law, they are not considered to be mitigation measures.

General Measures

- The Project will comply with applicable federal, state, and City ordinances, standards, and procedures for public utility design, construction, maintenance, and operation.
- The Project will comply with all requirements to notify utility companies of impending construction, obtain relevant information regarding existing subsurface utilities, and consult with the affected utility companies regarding the preservation or relocation of such utilities, if necessary.

Aesthetics

- All Project-related security lighting will be shielded away from adjacent properties and directed downward and into the Project site.

Air Quality

- The Project will comply with the South Coast Air Quality Management District (SCAQMD) Rule 403, "Fugitive Dust Requirements for Control of Fine Particulate Matter (PM_{10})," which requires implementation of feasible measures to reduce and control fugitive dust emissions, including, but not limited to: watering on site, using soil stabilizers, utilizing wheel washers for exiting vehicles, and reducing vehicle speeds.
- The Project will comply with the requirements of SCAQMD Permit to Operate F72428[3] or any subsequent Permit to Operate issued by the SCAQMD that supersedes Permit to Operate F72428.
- Construction equipment and vehicles will be maintained and operated so as to minimize exhaust emissions. Further, during construction, trucks and vehicles on the Project site will be parked with their engines off to reduce vehicle emissions.

[2] Length of construction for DRO 3, which is considered the worst-case option since it had the longest length of conduit and/or most poles that may be replaced.

[3] Permit to Operate F72428 was issued by SCAQMD for the operation of the landfill gas and collection system.

Biological Resources

- The Project will comply with the requirements of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).
- The Project will utilize BMPs, including those required through the National Pollutant Discharge Elimination System (NPDES), to ensure that the quantity and quality of runoff discharged to the MSHCP Conservation Area is not altered in an adverse way when compared with existing conditions. BMPs will be put in place to avoid discharge of untreated surface runoff from developed and paved areas into the MSHCP Conservation Area.
- Storm water systems will be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within the MSHCP Conservation Area. Regular maintenance will occur to ensure effective operations of runoff control systems.
- Any night lighting will be directed away from the MSHCP Conservation Area to protect species from direct nighttime lighting. If nighttime lighting is required, shielding will be incorporated in the design to ensure ambient nighttime lighting is not increased in the MSHCP Conservation Area.

Geology and Soils

- All work on the Landfill Surface will be conducted in compliance with the requirements of the *Landfill Closure Plan.*
- Structures will be designed to accommodate continued settlement of the underlying Landfill material and differential settlement of the Landfill surface. Adjustable foundation connections may be utilized to achieve this.
- Periodic visual inspections will be performed to determine areas affected by settlement and other potentially adverse conditions.
- A maximum allowable foundation pressure of 1,000 pounds per square foot (psf) will be used for the surface of the Landfill.
- A maximum allowable lateral sliding coefficient of 0.20 will be utilized for the surface of the Landfill.
- Site preparation for the EEB will require:
  - A representative of the geotechnical engineer shall be present for all site clearing and grading activities in connection with the EEB.
  - The area to be graded for the EEB shall be stripped of any deleterious materials, which will be removed from the site for disposal.
  - Any existing utility lines will be traced, removed, and rerouted from the area to be graded.
  - All fill within the area of the EEB be completely removed, cleaned of significant deleterious materials, and the bottom of the excavation observed by the engineering geologist.
  - The bottom be brought to near optimum moisture content to a depth of approximately 12 inches and recompacted to at least 90 percent relative compaction prior to refilling the excavation to grade as properly compacted fill.
  - Fill to be spread in near-horizontal layers, approximately 8 inches in thickness, unless otherwise approved by the geotechnical engineer.
  - Subexcavation to remove all undocumented fills and loose soils to remove all existing fill and extend to at least two feet below foundation levels and five feet laterally beyond all foundations and slabs-on-grade.

- A maximum allowable foundation pressure of 2,000 psf and a lateral bearing of 150 psf per foot of depth below natural grade will be used for the EEB.
- An allowable coefficient of friction of 0.25 will be utilized for the EEB.
- The building materials, design, and construction methods will conform to the California Building Code (CBC), Uniform Building Code (UBC), and local building and construction standards.

Hazards

- Hazardous materials will be handled in accordance with federal, state, and City requirements.

Hydrology and Water Quality

- Prior to approval of the final design for any portion of the PV arrays, the spacing of the facilities shall be reviewed by the City to ensure that the arrays are sited in such a manner as to not increase the amount of sheet flow relative to any of the existing V-ditches.
- Prior to approval of the final design for the first phase (i.e. the 1 MW to 5 MW system) and any subsequent phases, a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and submitted to the City and Regional Water Quality Control Board for approval The SWPPP shall be implemented during installation of the PV arrays and construction of the DROs in compliance with the requirements of the General Construction Permit, Santa Ana Region, issued by the State Water Resources Control Board. The SWPPP shall identify BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges for the portion of the Project under construction. A copy of the SWPPP shall be held by the construction contractor
- Typical BMPs for erosion control will be implemented during construction of the Project pursuant to any applicable NPDES requirements. These BMPs may include, but would not be limited to, the use of mulch, erosion control blankets, or gravel bags to control erosion. The Landfill surface will not require grading; however, small amounts of soil, from the existing stockpile on the Landfill site, may be used to smooth the surface, i.e., fill in any depressions, prior to placement of the arrays.
- At no time during the installation or operation of the Project, will the existing drainage structures on the top of the Landfill (V-ditches) be blocked or relocated.

Noise

- During Project-related construction activities, Construction Contractor(s) will make sure that all fixed and mobile construction equipment is equipped with properly operating and maintained mufflers, consistent with manufacturers' standards.
- Construction Contractor(s) will place all stationary construction equipment so that emitted noise is directed away from noise sensitive receptors nearest the Project site.

Transportation/Circulation

- Construction traffic, including material deliveries and construction workers' vehicles, will use existing roads to access the Landfill site and the locations at which new overhead wires, replacement power poles (if necessary), and new underground cable will be installed.
- Project construction hours will comply with Section 7.35.010 of the Riverside Municipal Code and be limited to the hours between 7:00 a.m. and 7:00 p.m. on weekdays and 8:00 a.m. and 5:00 p.m. on Saturdays. No construction will take place on Sundays or federal holidays.

9. Existing Land Use and Setting

The PV array, flexible conduit, and appurtenant structures (e.g., security fencing and lighting) will be located within approximately 40 acres of the approximately 120-acre, Class III, closed and covered Landfill as shown in **Figure 2**. The Landfill occupies a quadrilateral mound approximately 0.7 mile on its southeast side, 0.3 mile on its southwest side, 0.4 mile on its northwest side, and 0.4 mile on its northeast side. The Landfill site is situated

south of the Santa Ana River at elevations ranging from 740 to 790 feet above mean sea level. Photographs taken from vantage points from within the Landfill are provided in **Figures 5a and 5b, Tequesquite Landfill Photos**.

There are currently no structures on the Landfill site with the exception of the relatively small landfill gas treatment facility that is located on the southwest portion of the Landfill, approximately 800 feet from the nearest residence (refer to **Figure 2**). The flare stack[4] is approximately 40 feet high and 8 feet wide. It was intended that this facility would process Landfill gas prior to the gas being piped to the Water Quality Control Plant for use as a fuel. However, since the quality of the Landfill gas is not suitable for use in engines, no gas has been piped to the Water Quality Control Plant. An enclosed landfill gas flare at the facility disposes of the landfill gas. The flare stack is fully enclosed, self-supporting, and includes a flame arrestor to prevent backflash from the flare.

Brief Landfill History[5]

Historical maps show that during the mid-1800s, the landfill area lay partially within the "East Branch" of the Santa Ana River channel. At that time, a road that ran from Rincon[6] to the Louis Roubidoux homestead, located roughly a mile to the northwest, was the only man-made feature noted in the vicinity. By the late 1800s, a number of roads and scattered buildings, most of them presumably farmsteads, had appeared near the landfill area, mostly to the south. Maps from the 1940s to 1970s indicate that the landfill area remained vacant during that period and historical accounts indicate that it had become a favored trash burning place as early as 1910. The history of the area as a dump site was summarized in 1995 by an archaeologist as follows:

> *The 125-acre landfill area was used as the Riverside City Dump beginning perhaps as early as 1910 or so; trash was hauled down to the old floodplain of the Santa Ana River and burned on the surface of the sand and gravel. Periodic inundations of this open-burn area flushed the unburned light and much of the heavy fraction of the garbage downstream, removing earlier deposits and mixing early and late glass, metal, chinaware, etc., in the bed of the Santa Ana River for miles downstream to the west. Local residents remember one of the greatest such floods, which took place in the later 1930s (probably 1938), which was said to have "scoured the river bottom completely clean," having removed all visible garbage dumped up to this point. The pattern of open dumping and burning continued until 1947, when the rapid post-war upsurge in the Riverside County population demanded a more efficient method of garbage disposal. From 1948 until 1958, garbage was buried in trenches bulldozed for that purpose; from 1958 until 1981, garbage was dumped via the ramp and area method, leading to a massive buildup of refuse over the entire 125-acre dump as high as 45 feet in places above the original ground surface. Garbage dumping ceased in 1981, and from this time until 1985, the old dump was used as a Class III sanitary landfill. At the end of this final episode of use, thin cap of sterile dirt or "clean fill" was brought in to cover the old, underlying garbage deposit. In 1985, the landfill was closed, after a soil cover of 6" depth was spread over it so as to encourage vegetational growth and stabilization.*[7]

Class III landfills accept primarily non hazardous residential and commercial/industrial municipal solid waste. In 1997, the City of Riverside sought state assistance in appropriating 13.8 million dollars necessary to abate groundwater contamination from the landfill, a program that included creating and compacting a new landfill "cap" covering, installation of a gas extraction system to remove contaminants, and construction of levees to prevent runoff from flowing into the Santa Ana River to the north. The closure was completed on December 3, 1998.

According to City records since 1960, the total in-place waste volume at the Landfill is estimated to be approximately 4.8 million cubic yards. Based on data collected from borings, the interior part of the Landfill

[4] The flare stack is an elevated vertical conveyance, typically made of metal or concrete, used to eliminate waste gas, which is otherwise not feasible to use or transport.

[5] *Historical/Archaeological Resources Survey, Tequesquite Photovoltaic Energy Farm Project*, June 18, 2010 (Appendix D of this Initial Study)

[6] A small community that was located in the Corona/Norco area.

[7] Ibid., pg. 6

reached depths of 35 to 43 feet; the average waste depth at the Landfill is estimated to be 30 feet[8]. Closure of the Landfill was performed to provide protection of public health and safety, and the environment while minimizing postclosure maintenance requirements.

Landfill Cover

There is a minimum four-foot thick low-permeability monolithic final cover over the Landfill that has been engineered to control water runoff via grading, soil types, and the use of vegetation. The top deck of the Landfill is sloped from the center in all directions at 3.0 percent; side slopes have a maximum horizontal to vertical ratio of 3 to 1. The Landfill's monolithic cover is an engineered alternative to the standard clay cap prescribed by the California Code of Regulations.[9] The Landfill's four-foot thick monolithic cover is more effective in limiting landfill gas emissions through the cover than standard clay cap covers for several reasons which include climatic conditions, soil characteristics, and settlement rates at the Landfill site.

Landfill Security

The Landfill site is fenced on all sides; additionally, the Santa Ana River precludes ordinary vehicular access from the north. Vehicular access to the Landfill is provided via locked gates from the east by Tequesquite Avenue and from the south by Rubidoux Avenue. Tequesquite Avenue continues along the south side of the Landfill as an asphalt bike path until it intersects with Rubidoux Avenue at the southwest corner of the Landfill. A sign stating that the Landfill is closed and dumping is prohibited is posted at the Tequesquite Avenue site entrance. Photos taken at the Landfill are provided in **Figures 5a and 5b**.

Vicinity Weather Conditions

The weather in the Project vicinity, as well as in most of inland southern California, is influenced by the Pacific Ocean, which results in dry, warm to hot summers, and moderate, cool winters. The inland area generally experiences sunny days during most of the year, with early morning and late evening low clouds in the autumn as well as in the late spring. Generally, light to moderate winds result from large-scale circulation weather patterns from the eastern Pacific Ocean, although gusty Santa Ana wind conditions occasionally occur in the autumn and summer. Winds are predominantly from the west and southwest, with wind velocities rarely exceeding 30 miles per hour. Historic recordings of wind velocity and direction at the Ontario Airport, located approximately 13 miles northwest of the Landfill, indicate directions most frequently from the west, and less frequently from the west-southwest and north.

Landfill Biological Conditions[10]

The entire Landfill site is disturbed as a result of the landfill activities, but since the closure and covering of the Landfill, the site has become vegetated with a mix of native and non-native plant species, with a predominance of non-native, invasive species. The Landfill site is periodically mowed, preventing extensive native habitats from establishing.

Approximately 55.36 acres of the Landfill site is located within Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Subunit 1 (Santa Ana River South) of the cities of Riverside and Norco Area Plan, specifically within Criteria Cell 534 (refer to **Figure 6, MSHCP Overlay Map**). According to the MSHCP, conservation within Cell 534 focuses on grassland, riparian scrub, woodland and forest habitat expanding existing conserved wetland habitat along the Santa Ana River, in order to contribute to the assembly of

[8] City of Riverside, Department of Public Works – Engineering Division, *Closure-Postclosure Maintenance Plan, Tequesquite Landfill, Riverside, California*, April 1996.

[9] Title 23, *California Code of Regulations*, Chapter 15, Section 2581 (a).

[10] Glenn Lukos Associates, Inc., *Biological Technical Report for the Tequesquite Landfill Photovoltaic System*, June 22, 2010 (Appendix C of this Initial Study)

Existing Core A (Prado Basin and the Santa Ana River). Conservation within Cell 534 will range from 15 to 25 percent, focusing on the southwestern portion. The Cell Criteria targets areas of habitat located to the south of the Landfill, and not the Landfill itself, which occurs in the northern portion of Cell 534. The majority of the Subunit 1 Planning Species is associated with riparian habitat and the Santa Ana River itself, and is not associated with the Landfill site. A few Planning Species, such as the loggerhead shrike, Cooper's hawk, and Peregrine falcon have some potential to forage on site. The burrowing owl has some potential to breed on site.

A small portion of the Landfill site is located within the Narrow Endemic Plant Species Survey Area (NEPPSA), and the burrowing owl survey area. NEPPSA target-species include San Diego ambrosia (*Ambrosia pumila*), Brand's phacelia (*Phacelia stellaris*), and San Miguel savory (*Satureja chandleri*). Within designated Survey Areas, the MSHCP requires habitat assessments and focused surveys within areas of suitable habitat. For locations with positive survey results, the MSHCP requires that 90 percent of those portions of the property that provide for long-term conservation value for the identified species shall be avoided until it is demonstrated that conservation goals for the particular species have been met throughout the MSHCP. Findings of equivalency shall be made demonstrating that the 90 percent standard has been met, if applicable. If equivalency findings cannot be demonstrated, then "biologically equivalent or superior preservation" must be provided.

At the time the MSHCP was adopted, the majority of the Landfill site was designated as Public/Quasi-Public (PQP) lands. In 2009, the Regional Conservation Authority (RCA) removed from the list of PQP parcels City-owned lands identified for future infrastructure and utilities expansions, water treatment or distribution, solar or other power generation, including the Tequesquite Landfill.[11] Therefore, restrictions associated with PQP lands do not apply to the Project.

The Landfill site supports a predominance of non-native herbaceous plant species, including long-stemmed filaree (*Erodium botrys*), Russian thistle (*Salsola tragus*), tocalote (*Centaurea melitensis*), Australian saltbush (*Atriplex semibaccata*), horseweed (*Conyza* sp.), summer mustard (*Brassica geniculata*), red brome (*Bromus madritensis* ssp. *rubens*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), and narrowleaved filago (*Filago gallica*). The site intermittently supports sparse Riversidean sage scrub species. Based on the short stature of shrubs on the Landfill surface, the site had last been mowed one to two years ago. Native species observed on the Landfill surface included California buckwheat (*Eriogonum fasciculatum*), desert brittlebush (*Encelia farinosa*), sapphire woolly-star (*Eriastrum sapphirinum*), alkali heliotrope (*Heliotropium curassavicum*), annual burweed (*Ambrosia acanthicarpa*), telegraph weed (*Heterotheca grandiflora*), and slender pectocarya (*Pectocarya linearis*).

The Landfill site does not contain any riparian habitats, although extensive habitats occur adjacent to the site associated with the Santa Ana River.

No special status plants were observed on the Landfill site, and none are expected to occur on site due to a lack of suitable habitat and the level/nature of disturbance.

The Landfill site occurs within Survey Area 7 for the Narrow Endemic Plants, which includes San Diego ambrosia, Brand's phacelia, and San Miguel Savory as target species. The Landfill site does not contain suitable habitat for any of these species.

Two special-status animals were observed within the boundaries of the Landfill site during general and focused biological surveys. These include the California horned lark (*Eremophila alpestris actia*) and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*). In general, special-status animals are not expected to occur on site due to a lack of suitable habitat. In addition to those animals detected on site, special-status animals with a potential to occur are those that may use the site for foraging, including loggerhead shrike (*Lanius ludovicianus*) and various raptor species.

[11] August 18, 2009 letter from Regional Conservation Authority (Charles Landry, Executive Director) to City of Riverside (Scott Barber, Community Development Director)

Although not detected on site during focused surveys, the burrowing owl has some potential to use the site for breeding and foraging. Several special-status bird species were detected off site within the Santa Ana River through vocalization and/or observation. These include the federally- and state-listed least Bell's vireo (*Vireo bellii pusillus*). The least Bell's vireo was heard vocalizing from several off-site locations within adjacent riparian habitat. However, the Project site does not contain any riparian habitat. As such, none of riparian species detected off site (including the least Bell's vireo) would occur within the Project site.

During the focused burrowing owl surveys, none were detected on site. The site contains a number of suitable burrows, with the majority of them scattered around the edge of the property, associated with the existing concrete V-ditches. No diagnostic owl sign (e.g., pellets, excrement, bones, feathers) was detected at any of the burrows. Although burrowing owls were not detected on site during focused surveys, there is some potential for burrowing owls to occur on site in the future based on the presence of suitable habitat, including suitable burrows.

The Landfill site has the potential to support nesting birds. The Migratory Bird Treaty Act (MBTA) and California Fish and Game Code prohibit impacts to nesting birds.[12] Since the Landfill site does not contain trees or large shrubs, the potential for nesting birds is limited to those birds that build nests on the open ground, or on the ground amongst the herbaceous vegetation. This includes the California horned lark, killdeer, savannah sparrow, and western meadowlark, all of which were observed on site (though, not observed nesting).

The Landfill site provides foraging habitat for a number of raptor species, including special-status raptors. Raptors identified on site during general and focused surveys include the red-tailed hawk and American kestrel. However, due to the nature of the site and level of disturbance, the foraging opportunities are marginal.

The Landfill site does not contain any MSHCP riparian/riverine areas or vernal pools; however, it does contain a network of concrete V-ditches constructed to convey runoff. The V-ditches are not considered to be "riverine" features, as the ditches were artificially constructed and do not provide functions for species addressed under *Volume I, Section 6.1.2* of the MSHCP.

The Landfill site does not contain any waters subject to the jurisdiction of the Army Corps of Engineers and/or California Department of Fish and Game (CDFG). As noted above, the site contains a series of concrete V-ditches. The ditches are man-made features that were excavated in uplands for the purpose of conveying runoff from the site. The ditches do not support any riparian vegetation/wetlands. As such, the ditches are not regulated by the resource agencies.

Landfill Visual Character[13]

The Landfill is covered with an approximately four foot thick monolithic cover, which is sloped in all directions from its center at approximately three percent. As part of the closure requirements, the Landfill was seeded with a native plant mix; however subsequent to its closure, the Landfill has become vegetated with a mix of native and non-native, invasive species, which much of the year appears to be brown when viewed from a distance. This gives the Landfill the appearance of being a field with a small amount of topographic relief as seen in **Figures 5a and 5b** and **Figure 7, Photographs from Mount Rubidoux**.

The most prominent feature on the Landfill when viewed from a distance is a series of concrete V-ditches that were constructed to convey runoff. The top of the V-ditches are at grade with the Landfill surface. These drainage

[12] The Migratory Bird Treaty Act makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R. 21). In addition, sections 3505, 3505.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs.

[13] Albert. A. Webb Associates, *Visual Impact Assessment of Tequesquite Landfill Photovoltaic Solar System*, June 2010 (included as Appendix A to this Initial Study).

features are long, linear, manmade concrete structures that, when viewed from the side as shown in **Figures 5a and 5b**, are not readily visible. The V-ditches are particularly prominent when the viewer is looking down on the Landfill as indicated in **Figure 7**. Above-ground utility poles and lines cross the northern portion of the Landfill in an east-west direction. In addition to the V-ditches and utility poles and lines, landfill gas extraction wells, which are 36 inches in diameter and extend approximately six inches above the Landfill grade, are visible to viewers in close proximity to the Landfill.

Landfill Flood/Erosion Control

According to the *Landfill Closure Plan*, due to historical inundation of the Landfill by floodwaters from the Santa Ana River, a retaining levee of concrete demolition debris was constructed along the northwestern boundary of the Landfill in 1948. More concrete debris and large boulders were added to reinforce and extend the retaining levee to the east in 1967; the debris and boulders were reportedly designed to protect the Landfill from a 100-year storm event.

Landfill Water Quality

The Landfill is currently monitored for water quality under a Detection Monitoring Program[14]. The Landfill water quality monitoring and reporting project is managed on behalf of the City by a contracted engineering firm, as are field sampling services, data evaluation, and report preparation. Groundwater monitoring wells and surface water sampling locations are analyzed for general chemistry constituents (chloride, nitrate as nitrogen, sulfate, and total dissolved solids); frequently, surface water samples are also tested for an extended list of general chemistry parameters and Title 22 metals. Water quality monitoring was originally performed quarterly but, since approval by the Regional Water Quality Control Board in 2009, it has since been reduced in frequency to semi-annually, taking place during the second and fourth quarters of each year. Additionally, as part of that reduction in monitoring, the number of groundwater monitoring wells that are sampled was reduced from 20 to 12. Groundwater elevations at the Landfill are measured quarterly.

Although limited new historical intrawell maximum concentrations can be identified in groundwater samples, a comparison of current results with historical monitoring data reveal that many of the most significant increases between new and previous historical intrawell maximum concentrations were measured at upgradient wells. While statistical anomalies continue to be calculated for inorganic and organic constituents in samples from downgradient wells, inspection of historical data suggests that most concentrations are not increasing over time. In fact, groundwater chemistry upgradient of the landfill continues to yield the highest concentrations of volatile organic compounds (VOCs) at the Landfill site.

Landfill Relationship to Nearby Airports

The Landfill is located within the Airport Influence Area and Compatibility Zone E for both Flabob and Riverside Municipal airports, but not within any of the designated safety zones, as shown on **Figure 8, Airport Compatibility Zones**. The Airport Influence Area[15] is an area in which current or future airport-related noise, overflight, safety, or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses. An Airport Influence Area is defined by the Airport Land Use Commission (ALUC) as the outer boundary created by overlaying the Federal Aviation Regulation (FAR) Part 77 surfaces, the 60 dB CNEL noise contour and the airport safety zones. The requirements associated with compatibility zones are defined in *Table 2A, Basic Compatibility Criteria*, of the *Riverside County Airport Land Use Compatibility Plan Policy Document (Adopted October 2004)* which was utilized by the City Planning Division as part of the *Riverside County Airport Land Use*

[14] Established by Order No. 98-99, Monitoring and Reporting Program No. 98-99-06, and a letter (dated July 21, 2009) issued by the Santa Ana River Basin Regional Water Quality Control Board.

[15] An area within which the Riverside County Airport Land Use Commission exercises its responsibilities under the California Public Utilities Code, Chapter 4, Article 3.5, Section 21670 et seq.

Compatibility Plan Staff Checklist for Review performed for the Project. The City concluded that the proposed Project is consistent with the provisions of the *Riverside County Airport Land Use Compatibility Plan*.

Landfill Gas

Bacteria in a landfill break down the trash in the absence of oxygen (anaerobic) because the landfill is essentially airtight. A byproduct of this anaerobic breakdown is landfill gas which contains approximately 50 percent methane and 50 percent carbon dioxide, with small amounts of nitrogen and oxygen. Since the ability of a final cover to limit a landfill's gas emissions is primarily dependent on the porosity and thickness of the cover's soils, the Landfill's four-foot thick monolithic cover is more effective in limiting landfill gas emissions through the cover than standard clay cap covers for several reasons which include climatic conditions, soil characteristics, and settlement rates at the Landfill site.

During May 1996, the City submitted the *Landfill Closure Plan* to the Integrated Waste Management Board and the Regional Water Quality Control Board (revised January 1997). Comments on the *Landfill Closure Plan* detailed the gas collection and monitoring system needed for compliance. It also discussed the beneficial uses of methane from landfill gas at the Co-Generation Plan which drove the installation of the gas collecting system. Permits to Construct, obtained from South Coast Air Quality Management District (SCAQMD), provided the requirements and direction for installation. The City contracted with an engineering firm[16] to develop a compliance-monitoring plan and to conduct the compliance monitoring, report development and maintenance at the Landfill; the primary work effort is focused on monitoring and maintenance of the Landfill gas extraction system, needed for environmental compliance. The contracted engineering firm produces monthly Progress Reports for the City that present data gathered from the landfill gas collection system. The Progress Reports with landfill gas sampling data have followed the proposed 1150.1 Monitoring Plan[17] submitted to the City for approval in January 2004 and SCAQMD in March 2005. The monthly Progress Reports include elements such as Observations, New Items That Need to Be Reported and Addressed, Actions Taken, Recommended Actions, Well Readings, Surface Emissions Monitoring, Condensate Trap Monitoring, Probe Monitoring, Concentration Maps, and Flare and Plant Weekly Call Log. In addition, the Progress Reports include photographs of key observations made on the site.

Landfill Settlement and Surface Geology

Indications of differential settlement of the Landfill surface were observed during the field surveys conducted for the Preliminary Geotechnical Investigation[18], including arcuate/concentric vegetational alignments, closed topographic depressions, and a repair of a concrete drainage swale in the western corner of the Landfill. Surface depressions, localized fissures, rodent burrows, and surface cracking were noted in the Maintenance and Monitoring Progress Reports prepared by Landtec, Incorporated for the time period from January 2006 through April 2010.

Landfill settlement may occur from consolidation of fill under surcharge (overlying waste and soil materials and Landfill traffic) and continuing consolidation caused by decomposition of the organic matter within the fill. Surface settlement at a municipal solid waste landfill, having average compaction, may exceed 30 percent of the original fill depth; however, most of this settlement occurs within five years of fill placement. Given the time period over which waste was deposited and the length of time the Landfill has been closed, most of the anticipated settlement should have occurred.

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[16] The City currently contracts with LANDTEC, North American to conduct the compliance monitoring, compliance reporting, and maintenance at the Tequesquite Landfill.

[17] The 1150.1 Compliance Plan is intended to assure compliance and satisfy the requirements of Rule 1150.1, as amended on March 17, 2000. The Tequesquite Landfill / CR 1150.1 Monitoring Plan (Application No: 443996) was approved by SCAQMD on February 16, 2006, with the submitted alternatives.

[18] CHJ, Inc., *Preliminary Geotechnical Investigation, Proposed Solar Panel Project*, June 17, 2010.

As mentioned in the Project Description above, cover material repairs may include local regrading and/or placement of additional cover, revegetation, and mulching over areas that have been eroded or where the potential for water ponding exists because of differential settlement. All cover material placed during repairs must be moisture conditioned and compacted to at least 90 percent optimum. Any repairs to the cover that are recommended in inspection reports are performed in a timely manner, prior to the next rainy season.

The area proposed for the EEB consists of fill ranging from 4.5 to 6 feet in depth. The fill is composed of silty sand (SM) and sand (SP) overlain native soil consisting of poorly graded sand (SP).

10. Surrounding Land Uses and Setting: Briefly describe the project's surroundings:

Adjacent Existing Land Use:
Land uses Adjacent to the Landfill site:

North: Santa Ana River and Jurupa Regional Park

East: Natural open space, historic Tequesquite Arroyo to the southeast. The City's proposed Tequesquite Park is northeast of the Project site. Approximately 1,500 feet east of the Project site are existing single-family residences.

South: Natural open space. South/southeast of the Project site are existing single-family residences ranging in approximate distances of 500 to 800 feet from the Project site.

West: Natural open space. Approximately 5,600 feet west of the Project site, beyond the natural open space area, are existing single-family residences.

Land uses along the DRO alignments: commercial, residential, public facility, and institutional.

Adjacent zoning and General Plan Land Use Designation:
Zoning and General Plan Land Use designations adjacent to the Landfill site:

	Zoning	**General Plan Designation**
North:	Public Facilities (PF) and Riverside County Zone W1 (Watercourse, Watershed, and Conservation Area)	Private Recreation (PR) and Riverside County General Plan, OS-W (Open Space-Water)
East:	Public Facilities (PF)	Private Recreation (PR)
South:	Public Facilities (PF)	Private Recreation and Public Park (P)
West:	Public Facilities (PF)	Private Recreation and Public Park (P)

Zoning and General Plan Land use designations in the vicinity of the DROs include: commercial, residential, public facility, and institutional.

11. Other Public Agencies who's Approval is Required (e.g., permits, financial approval, or participation agreement):

a. Regional Water Quality Control Board – approval of revised Waste Discharge Requirements and an amendment to the *Landfill Closure Plan*

b. South Coast Air Quality Management District – approval of amendment to the *Landfill Closure Plan*

12. Other Environmental Reviews Referenced in this Review:

a. General Plan 2025

b. GP 2025 FPEIR

c. *Tequesquite Landfill Closure-Postclosure Plan,* City of Riverside Department of Public Works Engineering Division, April 1996

13. Acronyms and Chemical Abbreviations

ALUC	Airport Land Use Commission
AQMP	Air Quality Management Plan
BMPs	Best Management Practices
CBC	California Building Code
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
CO	Carbon monoxide
dbA	A-weighted decibel
DROs	Distribution Route Option(s)
FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FPEIR	GP 2025 Final Programmatic Environmental Impact Report
GP 2025	General Plan 2025
HCP	Habitat Conservation Plan
JPR	Joint Project Review
kV	Kilovolt
Lbs/day	Pounds per day
LFG	Landfill gas
MBTA	Migratory Bird Treaty Act
MSHCP	Western Riverside County Multiple-Species Habitat Conservation Plan
$MTCO_2$	Metric Tonnes of Carbon Dioxide
MW	Megawatt
NCCP	Natural Communities Conservation Plan
NEPSSA	Narrow Endemic Plant Species Study Area
NO_X	Oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
PM-2.5	Particulate matter less than 2.5 microns in diameter
PM-10	Particulate matter less than 10 microns in diameter
ppm	Parts per million
PQP	Public/Quasi Public
PRC	Public Resources Code
psf	Pounds per square foot
RCA	Regional Conservation Authority
RCALUC	Riverside County Airport Land Use Commission
RCALUCP	Riverside County Airport Land Use Compatibility Plan

ROW	Right-of-way
RPU	Riverside Public Utilities
RWQCB	Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SO_2	Sulfur dioxide
SPPA	Solar Power Purchase Agreement
SWPPP	Storm Water Pollution Prevention Plan
TLCPP	Tequesquite Landfill Closure-Postclosure Plan
VIA	Visual Impact Assessment
VOCs	Volatile Organic Compounds
UBC	Uniform Building Code
WQMP	Water Quality Management Plan

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation which reflects the independent judgment of the City of Riverside, it is recommended that:

The City of Riverside finds that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ☐

The City of Riverside finds that although the proposed 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 project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared. ☒

The City of Riverside finds that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ☐

The City of Riverside finds that the proposed 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. ☐

The City of Riverside finds that although the proposed 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 proposed project, nothing further is required. ☐

Signature David H. Wright Date 8/2/2010

Printed Name & Title David H. Wright, Public Utilities General Manager For City of Riverside

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a. **Earlier Analysis Used.** Identify and state where they are available for review.
    b. **Impacts Adequately Addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. **Mitigation Measures.** For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measure which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) The explanation of each issue should identify:

    a. the significance criteria or threshold, if any, used to evaluate each question; and
    b. the mitigation measure identified, if any, to reduce the impact to less than significance.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AESTHETICS. Would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐

1a. Response: ***(Source: General Plan 2025 Figure CCM-4 – Master Plan of Roadways, General Plan 2025 FPEIR Figure 5.1-1 – Scenic and Special Boulevards and Parkways, Table 5.1-A – Scenic and Special Boulevards, and Table 5.1-B – Scenic Parkways, General Plan FPEIR, VIA, Site Visit)***

The General Plan 2025 Final Programmatic Environmental Impact Report (FPEIR) states that although the majority of city is urbanized, hills and ridgelines surrounding the city provide scenic vistas to residents consisting of long distance views of natural terrain. Vista points are located throughout the City, both as viewed from urban areas toward the hills and from wilderness areas toward the City. The La Sierra/Norco Hills, Sycamore Canyon Wilderness Park, and Box Springs Mountain Regional Park constitute the most notable scenic vistas in the city. The La Sierra/Norco Hills, Mount Rubidoux, Box Springs Mountain, Sycamore Canyon and smaller hills in the city provide a visual backdrop when viewed from streets, buildings, and open spaces. Nearly every neighborhood in Riverside features some areas of local hills, which create vistas from local streets and even residents' back yards.

Another prominent scenic resource in the city is the Santa Ana River watercourse and riverbed, which extends along the city's and Project's northern edge. In addition to being a place of natural beauty and a prominent visual landmark for visitors and residents, the Santa Ana River provides natural habitat for many bird and animal species as discussed in the responses to items 4a, 4d, and 4f (Biological Resources).

The peaks of Box Springs Mountain, Mt. Rubidoux, Arlington Mountain, Alessandro Heights, and the La Sierra/Norco Hills provide scenic views of the city and the region.

The visual resources in the vicinity of the Project site are Mount Rubidoux and the Santa Ana River; therefore, this discussion will focus on the Landfill site components (i.e., solar arrays, EEB) of the proposed Project, since the Landfill is in proximity to these resources. The above ground portions of the DROs will be located within existing pole lines and the underground portions of the DROs will use existing conduits and not be visible after construction is completed.

The Landfill is visible from the backyards of residences located southwest of the Landfill. Homes on Grand Avenue, Old Ranch Road, and Pinehurst Drive have views of the Landfill. **Figures 9a and 9b, Panorama Photographs from Residences on the Bluff – Existing Conditions** present representative views from residences on these streets. The Landfill is also highly visible from the top of and trails on the western side of Mount Rubidoux as shown in **Figure 9c, Photographs from Mount Rubidoux – Existing Conditions**. Views of the Landfill from the Rancho Jurupa Park, north of the Santa Ana River, are constrained by the large trees on either side of the Santa Ana River (**Figure 2**).

As discussed in the Project Description, the Project proposes a first phase that will install a 1 MW to 5 MW solar panel array. The first MW is anticipated to be installed on the northwest corner of the Landfill surface (**Figure 4a**). A subsequent phase (or phases) will build out the remaining 9 MW solar panel array, which will occupy most of the remaining northern half of the Landfill cover (**Figure 4b**). The Landfill's cover is sloped from the center to the sides at three percent for drainage purposes. Being blocked by the Landfill cover's peak near the center of the cover, the majority of the northern half of the Landfill's surface area is not visible from locations to the south.

A Visual Impact Assessment (VIA) was performed for the Project to determine potential impacts to the Landfill site, as a scenic resource, and its surrounding areas. The overall conclusion of the VIA, which is included as Appendix A to this Initial Study, is impacts would be less than significant. This was established by performing an analysis of the Landfill site's existing visual character and potentially affected viewers, and hypothetically implementing the Project using visual and contextual descriptions.

With respect to the view of the Landfill from the residences to the southwest, it was determined that the area of view that would be affected by the Project within the Landfill site would conservatively be less than 2% of the overall view, without taking any of the skyline into account in the ratio. Taking even a portion of the skyline into account would reduce the percentages to even lower levels. Additionally, the solar panel arrays will not be a dense array of equipment but rather, by necessity of engineering and maintenance requirements the arrays will be spaced out, leaving much of the existing ground surface visible. Furthermore, the

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

panels, at a maximum height of 15 feet, may likely not even be visible from the residences on the bluff to the south of the site and will not encroach on any of the distant views of the mountains to the north from the bluff to the south; conceptual views have been generated (refer to **Figures 10a and 10b, Panorama Photographs from Residences on the Bluff – With Project Conditions**).

The EEB will be a maximum of 30 feet by 60 feet and will be located towards the southwest corner of the Landfill site. Due primarily to the natural growth within the Conservation Area, the EEB area is the least visible Project component to the residences on the bluff to the south, which have the most prominent view of the Landfill site from the immediate vicinity, and observers on Mount Rubidoux.

The City's *General Plan Open Space and Conservation Element* lists the peak of Mount Rubidoux, located approximately 3,400 feet northeast from the closest point of the Landfill site, as a vista point. The Landfill cover is highly visible from the top of Mount Rubidoux and from the trails on the western side of the mountain. As shown in **Figure 9c**, when viewed from the bench located slightly more than three-fourths of a mile up the trail at Mount Rubidoux; the Landfill comprises approximately 25% of the mid-distance views. **Figure 9c** also shows the Landfill as viewed from the bridge on the western side of Mount Rubidoux. The installation of the solar arrays will change the overall appearance of the Landfill from a dirt field to a series of solar arrays. The amount of change will be a function of the number of arrays ultimately installed, which depending upon placement and spacing, may appear as straight lines across the surface of the Landfill as shown in **Figure 10c, Photographs from Mount Rubidoux – With Project Conditions,** covering most of the top of the northern half of the Landfill as shown in **Figure 4b**. This view of the Landfill is visible for several minutes, depending on the speed of the hiker, jogger or bicyclist, by persons descending Mount Rubidoux until the trail turns north. However, as described below, this change in the appearance of the Landfill does not constitute an adverse impact to the view from Mount Rubidoux.

The VIA concludes that glare is not an issue because the reflectivity of a PV solar panel surface is less than or equal to the reflectivity of many other common surfaces such as dirt and rock.

The *Open Space and Conservation Element* lists Objectives with Policies in order to protect the City's resources, such as scenic views in this case. The Project will not be in conflict with any of the Objectives or Policies.

Therefore, for the reasons discussed above, the potential for substantial adverse impacts to a scenic vista are considered to be less than significant.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

1b. Response: ***(Source: General Plan 2025 Figure CCM-4 – Master Plan of Roadways, Parkways, Table 5.1-A – Scenic and Special Boulevards, Table 5.1-B – Scenic Parkways, the City's Urban Forest Tree Policy Manual)***

The Santa Ana River watercourse and riverbed, which extends along the City's and Project's northern edge, and Mount Rubidoux, located east of the Landfill site, are prominent scenic resources. The scenic views from and of these resources are discussed in the response for item 1a, above. With regards to damaging a scenic resource within a state highway, the Landfill site is not near a scenic highway. According to *GP 2025* and *GP 2025 EIR*, the nearest general plan-designated scenic highway is Magnolia Avenue, which is located approximately one mile to the southeast of the Landfill site. The Landfill is not visible from Magnolia Avenue. The Santa Ana River watercourse and riverbed are not visible from Magnolia Avenue. Mount Rubidoux is visible from portions of Magnolia Avenue; however, the views of Mount Rubidoux from Magnolia Avenue will not be affected by the Project. All four DROs propose the installation of new underground cable in existing conduits in Magnolia Avenue; however, once installation of these underground facilities is complete, Magnolia Avenue will be restored to its original condition. Thus, construction and long-term operation of the Project will not substantially damage scenic resources, as there are none identified within areas that will be with the Project; therefore, no impacts will occur.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐

1c. Response: ***(Source: General Plan 2025, VIA, General Plan 2025 FPEIR, Zoning Code, Citywide Design and Sign Guidelines,)***

Since the DROs will utilize existing pole lines and underground facilities, this discussion will focus on the Landfill site component of the Project (i.e., solar panel array and EEB) as the DROs will not have any potential adverse aesthetic impacts. Additionally, much of this discussion is related to the response for item 1a, above.

The existing visual character is summarized in the Project's VIA (included as Appendix A to this Initial Study) as essentially appearing as a large dirt mound within the natural Conservation Area. Native vegetation, or any vegetation for that matter, is not allowed to become too established on the Landfill's surface because of closure requirements that mandate periodic mowing.

At this location, the visual character is likely most critical to those residences located on the bluff to the south of the Landfill site, which have a permanent view of the Landfill. Another important view of the Landfill would be from Mount Rubidoux, where the Landfill is visible from the top and from portions of the trail on the west side of the mount. The VIA includes photographs from various vantage points within residence backyards along the bluff and from Mount Rubidoux (refer to **Figures 9a, 9b, and 9c**) and superimposed solar panels onto them (refer to **Figures 10a, 10b, and 10c**. Apart from occupying 2% or less of the overall viewed area, not including that of the skyline, the visual character or quality of the closed Landfill, or the surrounding features, is not substantially degraded. Therefore, the potential for impacts that would substantially degrade the existing visual character or quality of the Landfill site and its surroundings is less than significant.

d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

1d. Response: ***(Source: Project Description)***

With regards to potential temporary impacts, Project construction will occur during the daytime hours; thus, the use of lighting for construction activities, other than security lighting at the PV array on the Landfill, is not anticipated. With regards to potential long-term impacts, artificial lighting will not be a significant source of light or glare from the Project site as no lighted signage and no substantial safety or security lighting will be installed. No lighting is associated with the DROs.

As described under Project Design Features, above, all Project-related lighting (which will be for security purposes only) will be shielded away from adjacent properties and directed downward and into the Project site.

Glare was found not to be an issue through a reflectivity comparison of a PV solar panel surface to that of many other common surfaces such as dirt and rock, like that comprising the existing surface of the Landfill site, and was found to be equal to or less than the other surfaces. Additionally, examples were provided of substantially larger PV solar panel projects being installed adjacent to runways and on terminal rooftops at commercial and military airports that are highly sensitive to glare.

With regards to glare or reflectivity upon airport operations, the *Riverside County Airport Land Use Compatibility Plan Policy Document (Adopted October 2004),* was utilized by the City Planning Department as part of the *Riverside County Airport Land Use Compatibility Plan Staff Checklist for Review.* Based on this review, the City concluded that the proposed Project would not be in conflict with the *Airport Land Use Compatibility Plan.* Unlike concentrating-type solar power units that reflect the sun's light in order to boil water which is then used to generate electric power, PV solar panels are arrays of cells containing a solar photovoltaic material that convert solar radiation into direct current electricity. PV solar panels are specifically designed to absorb maximum amounts of impacting light; any light that is reflected and not absorbed is considered lost energy that could otherwise be converted into electricity. In order to best absorb light, a low reflectivity, non-glare surface is required, such as that found on the surface of PV solar panels. Overall, the reflectivity of the solar panels will not be substantially different from that of the existing terrain on the Landfill surface.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

According to research performed on the reflectivity of various surfaces[19], soil (e.g., clay, loam) has an average reflectivity value of 0.14; crushed rock surfaces and dry grass have a reflectivity value of 0.20; and dead leaves have a reflectivity value of 0.30. For comparison, the proposed PV solar panel surfaces will reflect approximately 5 to 17% of impacting light[20]. Furthermore, solar panel facilities have been successfully installed at Nellis Air Force Base, Oakland International Airport, San Jose International Airport, and San Francisco International Airport. Additionally, PV solar panels do not reflect sufficient amounts of light which could result in adverse glare upon cyclists on the nearby bike path or residences on the nearby bluff to the south. Furthermore, there is no substantial source of light in the vicinity of the Landfill that could cause a nighttime glare as a result of a reflection from the proposed solar panels. Therefore, PV solar panel glare or reflectivity is not anticipated to be a concern at the proposed location and less than significant impacts will occur with regards to creating a new source of substantial light or glare that would adversely affect day or nighttime views in the area, including those upon aircraft, cyclists, and residences.

2. AGRICULTURE and FORESTRY RESOURCES:				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest Range Assessment Project and the Forest Legacy Assessment project; and the forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. 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?	☐	☐	☐	☒

2a. Response: ***(Source: General Plan 2025 – Figure OS-2 – Agricultural Suitability)***

The Landfill site is located on land identified in *GP 2025* as being Farmland of Local Importance but not Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Furthermore, the Landfill has not been used for farming purposes for decades since it was in use from at least 1910 as a burn dump and then a trench-method landfill in 1947. The Landfill operated and accepted waste until 1985. The proposed Project will not change the characteristics or use of the land in terms of agricultural suitability. Additionally, the DROs by which the Project's solar-generated power will be routed to the power grid will be through either new wire in existing underground conduits or new wire on existing pole lines, none of which are located in areas designated as Farmland. Therefore, no impact related to the conversion of land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use is anticipated by Project implementation.

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

2b. Response: ***(Source: General Plan 2025 – Figure OS-3 – Williamson Act Preserves, General Plan 2025 FPEIR – Figure 5.2-4 – Proposed Zones Permitting Agricultural Uses, & Title 19)***

[19] Hunn, B.D., and D.O. Calafell, Determination of Average Ground Reflectivity for Solar Collectors, *Sol. Energy*, vol. 19, p. 87, 1977; see also R.J. List, "Smithsonian Meteorological Tables," 6th ed., Smithsonian Institution Press, pp. 442-443, 1949.

[20] US Solar Holdings, *Solar Reflectivity*, April 8, 2010.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

According to *GP 2025*, the Project site is not zoned for agricultural use and is not located on land under a Williamson Act contract. Additionally, the routes by which the Project's solar-generated power will be connected to the power grid are either in existing underground conduits, or along existing pole lines. Therefore, no impact is anticipated with regard to agricultural zoning or Williamson Act contracts.

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526)?	☐	☐	☐	☒

2c. Response: ***(Source: Site Visit, Public Resources Code)***

Forest land, as defined in Public Resources Code (PRC) section 12220(g) is land that can support 10 percent of native tree cover of any species under natural conditions and that allows for the management of one or more forest resources. Timberland, as defined in PRC section 4526, means land other than land owned by the federal government and land designated as experimental forest land, which is capable of growing a crop of trees for any commercial species, including Christmas trees. The Project site does not contain forest land or timberland. The Project site is not zoned for forest land or timberland. Additionally, due to the Landfill site's historic use and the restrictions in place relative to the monolithic cover, it is unlikely that the Landfill site will ever be used for timberland and the DROs are located in developed areas of the City. For these reasons, implementation of the Project will not conflict with zoning of forest land or timberland and there will be no impacts in this regard.

d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

2d. Response: ***(Source: Site Visit, Public Resources Code)***

As discussed in the response to time 2c, above, the Project site does not contain forest land or timberland nor is it zoned for forest land or timberland. The proposed Project is a solar power generating facility and electrical facilities to connect the solar generation to the City's Power Grid, development of which is on already-disturbed and cleared land. Implementation of the Project will not influence any land use changes. For these reasons, implementation of the Project will not result in the loss of forest land or the conversion of forest land to non-forest uses, and there will be no impacts in this regard.

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?	☐	☐	☐	☒

2e. Response: ***(Source: General Plan – Figure OS-2 – Agricultural Suitability, Figure OS-3 – Williamson Act Preserves, Figure LU-10 – Land Use Policy Map)***

Due to the Project site's historical nature as a landfill and the restrictions in place relative to the monolithic cover, there is little chance that the Project site would be utilized in the future as farmland or for any agricultural use. According to *General Plan 2025*, the Project site is located on land identified as being Farmland of Local Importance; *GP 2025* describes Farmland of Local Importance as being non-irrigated properties that are either currently producing crops or had the capacity to produce crops. *GP 2025* states, "areas identified as important farmland are in fact largely developed or planned for other uses" and "it would not be desirable in most cases to reintroduce agriculture into these areas." The Project site does not contain forest land.

Additionally, the Landfill site is located on and surrounded by land with a designated use of Private Recreation (PR), a land use not typically associated with agriculture. No other aspect of the Project, including the DROs by which the Project's solar-generated power is connected to the power grid, could result in conversion of Farmland to non-agricultural use. Therefore, no impact is anticipated in regards to a change in the environment which could result in the conversion of Farmland to non-agricultural use or the conversion of forest land to non-forest use, as a result of Project implementation.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒

3a. Response: ***(Source: South Coast Air Quality Management District's 2007 Air Quality Management Plan (AQMP))***

The *Air Quality Management Plan* (AQMP) for the South Coast Air Basin (SCAB) sets forth a comprehensive program that will lead the SCAB into compliance with all federal and state air quality standards. The AQMP control measures and related emission reduction estimates are based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments. Accordingly, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections.

As indicated on *GP 2025* Figure LU-10, the Project site has a land use designation of Private Recreation (PR). As indicated on the City's zoning map, the Project site is zoned as Public Facilities (PF). According to the *GP 2025 Land Use Element*, the PF designation provides for utility-related uses such as the Project's proposed solar power generation facility and therefore, is consistent with the City's designation. Since the proposed Project is a solar power generation facility that in and of itself will not result in any changes to the existing land use patterns in the Project area, the Project does not conflict with or obstruct implementation of the AQMP. Therefore, no impacts are anticipated.

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐

3b. Response: ***(Source: General Plan 2025 FPEIR Table 5.3-B SCAQMD CEQA Regional Significance Thresholds, Appendix B – AQMA)***

The short-term construction emissions of criteria pollutants from this Project were modeled using URBEMIS 2007, Version 9.2.4 for Windows computer program in the Project-specific air analysis (Appendix B of the Initial Study). Construction of the proposed Project will occur in two or more consecutive phases beginning no sooner than October 2010. Maximum daily emissions from construction of a 1 MW system, which is assumed to be Phase 1 for air quality modeling purposes (see Air Quality Modeling Assumptions in Appendix B), are estimated to be 25.18 pounds per day (lbs/day) for volatile organic compounds (VOCs), 51.54 lbs/day for oxides of nitrogen (NO_X), 29.60 lbs/day for carbon monoxide (CO), 0.01 lbs/day for sulfur dioxide (SO_2), 65.12 lbs/day for particulate matter less than 10 microns (PM-10), and 15.65 lbs/day for particulate matter less than 2.5 microns (PM-2.5) which do not exceed the regional thresholds set by SCAQMD. Maximum daily emissions from construction of the remaining 9 MW system, which is assumed to be Phase 2 for air quality modeling purposes (Appendix B), are estimated to be 10.58 lbs/day for VOCs, 86.16 lbs/day for NO_X, 44.32 lbs/day for CO, 0.04 lbs/day for SO_2, 56.65lbs/day for PM-10, and 15.10 lbs/day for PM-2.5 which do not exceed the regional thresholds set by SCAQMD. The short-term emissions do not exceed SCAQMD's localized significance thresholds either. Therefore, the impacts to air quality from construction of this Project will be less than significant.

The long-term operational emissions from this Project are a result of the routine maintenance of the site, including the usage of a water truck for washing the panels on an as needed basis. As routine maintenance activities will be infrequent and short in duration, operational emissions would be negligible, and would have a less than significant effect on air quality.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	☐	☐	☒	☐

3c. Response: ***(Source: South Coast Air Quality Management District's 2007 Air Quality Management Plan, Appendix B – AQMA)***

The portion of the South Coast Air Basin within which the Project is located is designated as a non-attainment area for ozone, PM-10, and PM-2.5 under both state and federal standards. Since the proposed Project does not conflict with any land use designations, it is in conformance with the AQMP, and the Project's short-term and long-term emissions do not exceed the SCAQMD established thresholds of significance; the Project's net increase in criteria pollutant emissions for which the Project region is non-attainment is not cumulatively considerable.

d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

3d. Response: ***(Source: Appendix B – AQMA)***

The proposed solar arrays and appurtenances are located on the closed Landfill (or adjacent to it) and the DROs are located adjacent to local neighborhood streets. As detailed in Appendix B, the closest sensitive receptors are the residences directly adjacent to these local area streets.

Short-term emissions will only be generated in the Project area during construction of the Project and have been found to be less than significant (see Air Quality Modeling Assumptions in Appendix B of this Initial Study). In addition, the operational emissions were also found to be less than significant, as indicated above, hence the Project will not expose sensitive receptors to substantial pollutant concentrations.

e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

3e. Response: ***(Source: Project Proposal, Appendix B – AQMA)***

The Project presents the potential for generation of objectionable odors in the form of diesel exhaust during construction in the immediate vicinity of the Project site. Once the Project is operation, minimal routine maintenance will occur, in the form of water trucks washing the solar arrays. Recognizing the short-term duration and quantity of emissions in the Project area, the Project will result in less than significant impact relating to objectionable odors.

4. BIOLOGICAL RESOURCES.

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 Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

4a. Response: ***(Source: site-specific Biological Technical Report, prepared by Glenn Lukos Associates, Inc. on June 22, 2010)***

No special-status plants were observed on site, and none are expected to occur on site due to a lack of suitable habitat and the level/nature of disturbance. The Landfill site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Survey Area 7 for the Narrow Endemic Plants, which includes San Diego ambrosia, (*Ambrosia pumila*), Brand's phacelia, (*Phacelia stellaris*), and San Miguel savory (*Satureja chandleri*) as target species. The Landfill site does not contain suitable habitat for species. The Project will not impact special-status plants.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

Two special-status animals were observed within the boundaries of the Landfill site during general and focused surveys. These include the California horned lark (*Eremophila alpestris actia*) and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*). In general, special-status animals are not expected to occur on site due to a lack of suitable habitat. In addition to those animals detected on site, special-status animals with a potential to occur are those that may use the site for foraging, including loggerhead shrike (*Lanius ludovicianus*) and various raptor species. The Project will eliminate foraging habitat for a number of special-status animals observed on site, or with the potential to occur on site. This includes the California horned lark, loggerhead shrike (*Lanius ludovicianus*), burrowing owl (*Athene cunicularia hypugaea*) and several special status raptors. However, due to the level of disturbance at the site, the quality of habitat for these special-status wildlife species is marginal. As such, the Project will not have a significant indirect impact on them. However, the Project has the potential to impact ground nesting birds if grading or mowing is conducted during the nesting season (February 1 to August 31). Adherence to mitigation measure **MM Biological 1**, which requires a preconstruction survey if mowing associated with the maintenance of the PV system must take place during the nesting season, will reduce potential impacts to ground nesting birds to below the level of significance.

Although not detected on site during focused surveys, the burrowing owl has some potential to use the site for breeding and foraging. Burrowing owls were not detected on site during focused surveys; however, burrowing owls have some potential to occur in the future, based on the presence of suitable habitat. Objective 6 of the MSHCP conservation objectives for the burrowing owl states that pre-construction presence/absence surveys for burrowing owl, within the survey area where suitable habitat is present, will be conducted within 30 days prior to disturbance. Adherence to mitigation measure **MM Biological 2**, which requires a preconstruction survey for burrowing owls and identifies the actions to be taken in the event burrowing owls are detected, will reduce potential impacts to burrowing owls to below the level of significance.

Several special-status bird species were detected off site within the Santa Ana River though vocalization and/or observation. These include the federally and state listed least Bell's vireo (*Vireo bellii pusillus*). The least Bell's vireo was heard vocalizing from several off site locations within adjacent riparian habitat. However, the Landfill site does not contain any riparian habitat. As such, none of the riparian species detected off site (including the least Bell's vireo) would occur within the Landfill site. However, the Project may have the potential to result in indirect impacts on special-status wildlife within the adjacent riparian habitat associated with the Santa Ana River. Project design features in Section 8, Project Description outline how potential indirect impacts associated with storm water runoff and lighting from the site on the adjacent Santa Ana River and associated riparian habitat will be addressed. The more likely impacts would result from noise generation by construction activities. Adherence to mitigation measure **MM Biological 3**, which requires maintenance of a buffer from the adjacent riparian habitats if construction takes place during the period the special-status wildlife species associated with the Santa Ana River are present, will reduce the effect of construction noise on these special-status wildlife species to below the level of significance.

MM Biological 1: All mowing, associated with the construction and maintenance of the PV system shall be conducted outside of the nesting season (February 1 through August 31), to the extent feasible. If these activities must be conducted during the nesting season, a qualified biologist will first conduct a nesting bird survey. Surveys will be conducted no more than three (3) days prior to scheduled activities. If active nests are identified, the biologist will establish buffers around the active nest (500 feet for raptors and 200 feet for non raptors). The active nest will not be removed, and no grading will occur within the established buffer, until a qualified biologist has determined that the nest is no longer active (i.e., the juveniles are surviving independent from the nest). If clearing is not conducted within three days of a negativity survey, the nesting survey must be repeated to confirm the absence of nesting birds.

MM Biological 2: No more than 30 days prior to ground disturbance associated with clearing, grading, etc., a qualified biologist will conduct a pre-construction burrowing owl survey to satisfy Objective Number 6 of the MSHCP species-specific objectives for the burrowing owl. If burrowing owls are detected within the Landfill site, the owls will be relocated from the site following accepted protocols. In order to avoid the disruption of breeding owls, active nests will be avoided, and relocations will be conducted outside of the nesting season, identified as ranging from February 1 through August 31.

MM Biological 3: To avoid any potential indirect impacts on special-status wildlife species associated with the Santa Ana River adjacent to the site, a 300-foot buffer from the adjacent riparian habitats will be maintained for construction activities during the period of March 15 to August 31.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

There are no habitats that support 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 Game or U.S. Fish and Wildlife Service along the DRO alignments.

Potential direct and indirect impacts to special-status wildlife species will be reduced to below the level of significance with adherence to the mitigation measures and Project Design Features outlined in Section 8, Project Description.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

4b. Response: ***(Source: site-specific Biological Technical Report, prepared by Glenn Lukos Associates, Inc. on June 22, 2010)***

Although extensive riparian habitats occur adjacent to the Landfill site, the Landfill site does not contain any riparian /riverine areas. To avoid any potential indirect impacts upon adjacent habitats, mitigation measure **MM Biological 3**, which requires a 300-foot buffer from said habitats be maintained for construction activities during the period of March 15 to August 31, will be implemented. There are no habitats in the vicinity of the DRO alignments. Therefore, with implementation of mitigation measure **MM Biological 3** and Project Design Features, potential impacts to the riparian habitats adjacent to the Landfill site are considered to be less than significant.

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

4c. Response: ***(Source: site-specific Biological Technical Report, prepared by Glenn Lukos Associates, Inc. on June 22, 2010)***

The Landfill site does not contain any MSHCP riparian/riverine areas or vernal pools. The site contains a network of concrete V-ditches constructed to convey runoff from the site; however, the V-ditches are not considered to be "riverine" features, as the ditches were artificially constructed and do not provide functions for species addressed under the MSHCP. There are no wetlands in the vicinity of the DRO alignments. Therefore, no impacts will occur.

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 native wildlife nursery sites?	☐	☒	☐	☐

4d. Response: ***(Source: site-specific Biological Technical Report, prepared by Glenn Lukos Associates, Inc. on June 22, 2010)***

The Landfill site is not located within established native resident or migratory wildlife corridors. Additionally, the Landfill site is a highly disturbed site that undergoes routine inspections and mowing, and has security fencing that precludes access to the site by many animals. The Landfill site does not contain suitable habitat that would support a native wildlife nursery site. The adjacent Santa Ana River and associated habitat does serve as a wildlife corridor. Noise generation from construction activities could indirectly impact sensitive-wildlife species using it. There are no wildlife corridors along the DRO alignments. Adherence to mitigation measure **MM Biological 3** will reduce the effect of construction noise on special-status wildlife species associated with the Santa Ana River to below the level of significance.

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

4e. Response: ***(Source: MSHCP, Title 16 Section 16.72.040 – Establishing the Western Riverside County MSHCP Mitigation Fee, Title 16 Section 16.40.040 – Establishing a Threatened and Endangered Species Fees)***

The Project is not subject to any local policies or ordinances protecting biological resources other than the MSHCP. As the City is a permittee of the MSHCP, the Project is required to be consistent with the plan. The consistency of the proposed Project with the MSHCP is discussed in item 4f below. The Project will not conflict with other local policies or ordinances protecting the biological resources and potential impacts are less than significant.

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?	☐	☒	☐	☐

4f. Response: ***(Source: Source: site-specific Biological Technical Report, prepared by Glenn Lukos Associates, Inc. on June 22, 2010)***

As described above in the Project Description, approximately 55.36 acres of the Landfill site are located within Subunit 1 of the Cities of Riverside and Norco Area Plan, specifically within Criteria Cell 534; of which approximately 21.76 acres are within the Potential Solar Panel Location Limits (refer to **Figure 2**). The Cell Criteria appears to target areas of habitat located to the south of the Landfill site, and not the Landfill site itself, which occurs in the northern portion of Cell 534. The majority of the Subunit 1 Planning Species are associated with riparian habitat and the Santa Ana River itself, and are not associated with the Landfill site. Although the Landfill site is not targeted by the Cell Criteria, the Project is still subject to Joint Project Review (JPR) by the Regional Conservation Authority (RCA).

The Landfill site does not contain any MSHCP riparian/riverine areas or vernal pools, and does not contain habitat for riparian/vernal pool species with survey requirements, including the least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo, Riverside fairy shrimp, and vernal pool fairy shrimp. No additional focused surveys or conservation are required. As such, the Project will be compliant with Section 6.1.2 of the MSHCP.

A small portion of the Landfill site occurs within Narrow Endemic Plant Species Survey Area (NEPSSA) 7, which includes the following target plant species: San Diego ambrosia, Brand's phacelia, and San Miguel savory. None of the NEPSSA species are expected to occur within the Landfill site due to the absence of suitable habitat, and none were observed on site during biological surveys. No additional focused surveys or conservation are required. As such, the Project will be compliant with Section 6.1.3 of the MSHCP.

The MSHCP *Urban/Wildland Interface Guidelines* are intended to address indirect effects associated with locating development in proximity to the MSHCP Conservation Area. The Landfill site is located adjacent to the MSHCP Conservation Area. Development in proximity to the MSHCP Conservation Area may result in edge effects with the potential to adversely affect biological resources within the Conservation Area. As discussed in the Project Description applicable design features as well as mitigation measures **MM Biological 1-3** will be implemented to minimize any adverse indirect impacts on special-status resources within the Conservation Area. As such, the Project will be compliant with Section 6.1.4 of the MSHCP.

The Landfill site does not occur within the Criteria Area Plant Species Survey Area or special animal species survey areas for amphibians or mammals. A small portion of the Landfill site occurs within the burrowing owl survey area. Focused burrowing owl surveys were conducted and no burrowing owls were detected. A pre-construction burrowing owl survey is required and outlined in mitigation measure **MM Biological 2** above. No additional focused surveys or conservation are required. As such, the Project will be compliant with Section 6.3.2 of the MSHCP.

The Project is located within the Habitat Conservation Plan for the Stephens' Kangaroo Rat in western Riverside County. The project is not located within a Core Reserve and additional focused surveys or conservation is not required. The City will pay applicable mitigation fees for the proposed Project.

Therefore, as discussed above, because the Project will be compliant with the biological requirements of the MSHCP and Stephens' Kangaroo Rat HCP impacts are considered less than significant.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

5. CULTURAL RESOURCES.

Would the project:

a. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☐	☒

5a. Response: ***(Source: GP 2025 FPEIR Table 5.5-A Historical Districts and Neighborhood Conservation Areas & Appendix D, Title 20 of the Riverside Municipal Code, and site-specific Cultural Resources Survey prepared by CRM Tech on June 18, 2010, LCP, LFSI)***

Due to the historical use of the Landfill site as a landfill and its current condition as a closed landfill with a final cover having been constructed over the top, there is very low to no potential for the discovery of a historical resource as defined in § 15064.5, or any resulting adverse change in the significance of a historical resource. Additionally, the results of the site-specific Historical/Archeological survey have established that no potential "historical resources"[21] were previously recorded within or adjacent to the Landfill area, including the approximately 1,800-square foot EEB site, and none was encountered during the Project's survey. Furthermore, prior to the levee being constructed the Landfill was within the floodplain of the Santa Ana River, and was subject to frequent and extensive disturbances by the natural forces of the river, including periodic flooding. In light of these conditions, the Landfill area and its immediate vicinity would not have been a desirable location for prehistoric habitation or offer a likely environment for any archeological deposits to be preserved.

Installation of the PV array on the surface of the Landfill will not involve any substantial grading activities since the proposed solar arrays will be installed above ground using weighted bases for anchoring. A limited amount of site preparation will be required for the EEB; however, as stated above, based on the findings in the site-specific Cultural Resources Survey (Appendix D of this Initial Study), there are no historical resources that would be affected by construction of this structure. The methods by which the Project's solar-generated power will be connected to the power grid will utilize existing underground conduits for subterranean line distribution and existing pole lines for aboveground distribution. Therefore, with regards to a substantial adverse change in the significance of a historical resource as defined in §15064.5, no impacts are anticipated.

b. Cause a substantial adverse change in the significance of an archeological resource pursuant to § 15064.5?	☐	☒	☐	☐

5b. Response: ***(Source: GP 2025 FPEIR Figure 5.5-1 – Archaeological Sensitivity and Figure 5.5-2 – Prehistoric Cultural Resources Sensitivity, Appendix D – Cultural Resources Study and specify if applicable: site-specific Cultural Resources Survey prepared by CRM Tech on June 18, 2010)***

Due to the historical use of the Landfill site as a landfill and its current status as a closed and covered landfill, undiscovered archeological resources, as described in §15064.5, are not likely to be discovered during Project construction or long-term use.

The sacred lands and record search conducted by the Native American Heritage Commission (NAHC) did not identify the presence of Native American cultural resources within a half-mile radius of the Project site, but recommended that local Native American groups be contacted. The NAHC recommended contacting the following local Native American groups or representatives: Cahuilla Band of Indians, Gabrielino Tongva Nation, Gabrieleno/Tongva San Gabriel Band of Mission Indians, Kupa Cultural Center (Pala Band), Morongo Band of Mission Indians, Pechanga Band of Mission Indians, Ramona Band of Cahuilla Mission Indians, San Manuel Band of Mission Indians, Santa Rosa Band of Mission Indians, Serrano Nation of Indians, Soboba Band of Luiseño Indians, Ramona Band of Cahuilla Mission Indians, and Willie Pink (Luiseño), in addition to the Cultural Resources Coordinator for the Ramona Band of Cahuilla Indians and the Environmental Director for the Santa Rosa Band of Mission Indians. Two of the 17 parties contacted responded as summarized in the following table.

[21] PRC §5020.1(j) and Title 14 CCR §15064.5(a)(1)-(3)

Native American Group (Individual Responding)	Comment
Gabrielino Tongva Nation (Samuel Dunlap, Chairperson)	• The Project area is within the traditional tribal areas of the Gabrielino Tongva Nation • Recommends Native American Monitoring with a monitor selected from the Gabrielino Tongva Nation
Pechanga Band of Luiseño Mission Indians (Anna Hoover, Cultural Analyst)	• The Project area is part of the tribe's ancestral lands. • The tribe is not interested in participating in the Project at this time due to the high amount of previous disturbances to the Project site. • Requests copies of all applicable Project-related archaeological reports and site records. • Requests consultation with the City/RPU regarding the treatment and disposition of any artifacts in the event subsurface cultural resources are identified.
Source: *Historical/Archaeological Resources Survey Report, Tequesquite Photovoltaic Energy Farm Project, City of Riverside, Riverside County CA*, pg. 5	

The results of the site-specific Historical/Archeological survey have established that no evidence of any cultural resources of prehistoric origin was found within the Project area. Activities associated with the Landfill operations and subsequent "capping" upon its closure has produced a highly disturbed ground surface that retains little potential for any intact archeological resources to be encountered, at least on the ground surface. As discussed above, the Landfill lies within the historic floodplain of the Santa Ana River, and was subject to frequent and extensive disturbances by the natural forces of the river, including periodic flooding.

With respect to the potential for the Project to disturb subsurface Native American resources, it is highly unlikely that any such resources, if present, will be disturbed. In 1947 the Landfill adopted a trench method for solid waste disposal, which entailed digging trenches into which the garbage was buried. Any resources within the area trenched would have been destroyed. Excavation for garbage disposal at the Landfill ceased in 1958 when the ramp and area method of disposal was used, in which solid waste was spread over the entire Landfill site. By 1985, when the Landfill ceased operations, the depth in the interior part of the site (the original ground level) is from approximately 35 to 43 feet (LCP, pg. 4).

The ground surface in the future site of the EEB, although not "capped," has also been greatly disturbed by past activities associated with the Landfill and construction of the landfill gas treatment facility. Additionally, as previously discussed in Existing Land Use and Setting, under the subheading Landfill Settlement and Surface Geology, there is approximately 4.5 to 6 feet of fill in the area in which the EEB will be located. This fill will be excavated to native soils and replaced as necessary. However, construction of the EEB will not require excavation into native soils.

Factors further reducing any potential for the Project to result in an adverse change in the significance of archeological or Native American cultural resources are: (i) the limited nature of the Project's anticipated construction process that will not involve extensive grading or any excavation on the Landfill top, (ii) the depth from the Landfill top (minimum 35 feet) to any potential Native American cultural resources, and (iii) no native soils will be disturbed in construction of the EEB. Additionally, the methods by which the Project's solar-generated power will be connected to the power grid will utilize existing underground conduits for subterranean line distribution and existing pole lines for aboveground distribution, which will not entail excavation into native soils. Nonetheless, the potential exists for archaeological resources to be uncovered during construction of the EEB; however, because it is highly unlikely that any Native American resource will be uncovered or disturbed, Native American monitoring is not required. Adherence to mitigation measure, **MM Cultural 1,** which requires work to be stopped and any finds evaluated, will reduce potential impacts to archaeological resources to below the level of significance.

MM Cultural 1: Should any cultural and/or archaeological resources be accidentally discovered during construction, construction activities in the vicinity of the find shall be halted and construction shall be moved to other parts of the project site until a qualified archaeologist (or cultural resources professional approved by the City Historic Preservation Officer) retained by the City (or its designee) determines the significance of these resources. If the find is determined to be a historical or unique archaeological resource, as defined in Section 15064.5 of the California Code of Regulations (State *CEQA Guidelines*), avoidance or other appropriate measures shall be implemented; as recommended by the archaeologist (or cultural resources professional).

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

5c. Response: ***(Source: General Plan 2025 Policy HP-1.3)***

Due to the historical use of the Landfill site as a landfill and its current status as a closed and covered landfill, undiscovered paleontological resources or sites, or unique geologic features are not present on the Landfill top. Therefore, these resources are not likely to be discovered during installation of the PV array or its long-term operation. Further reducing any potential for the Project to result in the destruction of a unique paleontological resource or site or unique geologic feature is the limited nature of the anticipated construction process that will not involve any grading or excavation of the Landfill top and only involve limited site preparation for the EEB. Additionally, the methods by which the Project's solar-generated power will be connected to the power grid will utilize existing underground conduits for subterranean line distribution and existing pole lines for aboveground distribution, which will not entail excavation into native soils. In the unlikely event that paleontological resources are unearthed during site preparation for the EEB, implementation of mitigation measure **MM Cultural 2** will reduce potential impacts to unknown resources to below the level of significance.

MM Cultural 2: Should construction activities uncover paleontological resources, work in the vicinity of the find shall be halted and construction shall be moved to other parts of the Project site until a qualified paleontologist retained by the City (or its designee) determine the significance of these resources. If the find is determined to be significant, avoidance or other appropriate measures shall be implemented. Appropriate measures would include that a qualified paleontologist be permitted to recover, evaluate, and curate the find(s) in accordance with current standards and guidelines.

Therefore, with regards to the Project directly or indirectly destroying a unique paleontological resource or site or geologic feature, no impacts are anticipated.

d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

5d. Response: ***(Source: GP 2025 FPEIR Figure 5.5-1 – Archaeological Sensitivity and Figure 5.5-2 – Prehistoric Cultural Resources Sensitivity)***

Due to the historical use of the Landfill site as a landfill and its current status as a closed and covered landfill, undiscovered human remains are not likely to be discovered during Project construction or long-term operation. Further reducing any potential for the Project to result in the disturbance of any human remains is the limited nature of the Project's anticipated construction process which will not involve any grading or excavation of the Landfill top and will involve only minor site preparation for the EEB. Additionally, the methods by which the Project's solar-generated power will be connected to the power grid will utilize existing underground conduits for subterranean line distribution and existing pole lines for aboveground distribution, which will not entail excavation into any native soils. However, in the event of an accidental discovery of human remains, the Project proponent, in this instance the City or a third party vendor, shall comply with Health and Safety Code §7050.5, State *CEQA Guidelines* §15064.5(e) and Public Resources Code §5097.98. Therefore, there will not be any impacts to human remains.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
6. GEOLOGY AND SOILS. 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.	☐	☐	☐	☒

6a.i. Response: ***(Source: General Plan 2025 Figure PS-1 – Regional Fault Zones)***

According to Figure PS-1 of *GP 2025*, the Project site is not located on or near to an earthquake fault or fault zone. The nearest known earthquake fault is located approximately four and one-half miles east of the Landfill site. The nearest fault zone is located approximately 10 miles to the east of the Landfill site. Additionally, implementation of the Project does not entail the construction of any structure that will be occupied on a regular basis. Therefore, although the Project site is subject to the potential effects of earthquakes, with regards to the exposure of people or structures to potential substantial adverse effects associated with the rupture of a known earthquake fault, no impacts are anticipated.

ii. Strong seismic ground shaking?	☐	☐	☒	☐

6a.ii. Response: ***(Source: General Plan 2025 FPEIR Appendix E – Geotechnical Report)***

While Appendix E of the FPEIR does not provide specific details on the potential for substantial adverse effects related to strong seismic ground shaking, it does provide general information. According to FPEIR, Appendix E, "the effect of an earthquake originating on any given fault will depend primarily upon its distance from the [receiver] and the size earthquake (amount of energy release) that the fault is likely to generate. In general, the more distant the fault is and the smaller the potential earthquake, the less effect." The Landfill site is located approximately four and one-half miles from the nearest fault and approximately 10 miles from the nearest fault zone.

As with most construction projects occurring within Southern California, the proposed Project falls within a seismically-active region and may be subject to ground shaking and other geologic hazards while in operation. The proposed solar power generation facility includes the construction of solar panels but does not involve any substantive structures or structures for human habitation. The solar panels would be constructed in compliance with applicable building codes using flexible aboveground conduit, which would reduce the risk of structural damage due to strong shaking during a major seismic event. Additionally, the methods by which the Project's solar-generated power will be connected to the power grid will utilize existing underground conduits for subterranean line distribution and existing pole lines for aboveground distribution. This component of the Project will not introduce underground or overhead electrical distribution wires along routes that are not already being utilized for such. Based upon an existing pole's ability to support weight, some existing power poles may need to be upgraded to newer, stronger poles; however, this will further reduce the possibility of potential impacts related to strong seismic ground shaking.

During normal operation of a PV array, no sparks are generated. Sparking may result during maintenance of the panel or if a PV panel or array is damaged. In the event the PV equipment or conduit is damaged during a seismic event and such damage results in electrical sparking, there is a slight potential the spark could come in contact with methane gas on the surface of the landfill and result in a fire. However, as discussed in item 14a, Public Services, the potential for a fire to result is remote. The nearest structure to which the fire could spread is the landfill gas treatment facility and, once it is constructed, the EEB. The EEB will be a steel building constructed on a concrete slab, and equipped with a fire extinguisher. The only flammable component of the EEB, will be the insulation around the wires and cabling leading into the building. Additionally, the EEB will be unmanned and used mostly for storage.

Therefore, with regards to exposing people or structures to potential substantial adverse effects associated with strong seismic ground shaking, with adherence to existing codes and standards impacts are anticipated to be less than significant.

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
iii. Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐

6a.iii.Response: ***(Source: General Plan 2025 Figure PS-1 – Regional Fault Zones, Figure PS-2 – Liquefaction Zones, General Plan 2025 Public Safety Element, Geo Technical Report)***

According to Figure PS-1 of *GP 2025*, the Landfill is not located on or near to an earthquake fault or fault zone. The nearest known earthquake fault is located approximately four and one-half miles east of the Landfill site. The nearest fault zone is located approximately 10 miles to the east of the Landfill. However, Figure PS-2 of *GP 2025* indicates that the Landfill is located within an area identified as having a very high susceptibility to liquefaction. Figure PS-2 of *GP 2025* indicates that the alignments for the DROs are within an area identified as having a low susceptibility to liquefaction. According to the *GP 2025* Public Safety Element, liquefaction occurs when ground shaking causes water-saturated soils to become fluid and lose strength. The refuse layer, below the surface cover-layers of the landfill, extends approximately 30 to 50 feet deep; this layer of refuse has replaced the native soils that were identified as being highly susceptible to liquefaction. Above the refuse layer is an engineered low permeability monolithic cover primarily comprised of silty sand with gravel, with relative compaction ranging from 83 to 93 percent. The cap is designed to direct water over the top of the landfill and off to the sides, thereby preventing moisture from seeping into the refuse portion of the Landfill; a layer of topsoil and native vegetation were added to further reduce the chances of water infiltration. These measures reduce the potential for soils to become water-saturated, a condition necessary for liquefaction.

The EEB will be constructed adjacent to the existing landfill gas treatment facility in an area subject to liquefaction. Although this steel building will be constructed on a concrete slab and unmanned, the potential for liquefaction exists. To reduce this potential for damage to the EEB, mitigation measure MM Geology 1 shall be implemented.

MM Geology 1: As part of the final Project design and siting of the EEB, a design-level geotechnical study shall be prepared to identify the specific location of any underground methane gas collection lines and to identify the specific design parameters for the foundation system for the EEB and the specific site preparation requirements. The recommendations of the design-level geotechnical study relative to final siting, foundation, and materials, shall be incorporated into the EEB.

Therefore, with regards to impacts related to exposing people or structures to potential substantial adverse effects associated with seismic-related ground failure, including liquefaction, because the proposed solar power generation facility includes the installation of solar arrays and appurtenances, does not involve any substantive structures or structures for human occupation, and the Project will implement mitigation measure **MM Geology 1**, potential impacts relative to seismic-related ground failure will be less than significant with mitigation.

iv. Landslides?	☐	☐	☐	☒

6a.iv. Response: ***(Source: General Plan 2025 FPEIR Figure 5.6-1 – Areas Underlain by Steep Slope, General Plan 2025 Public Safety Element, TLCPP)***

The Geology and Soils section of FPEIR states that "areas of high susceptibility to seismically induced landslides and rockfalls correspond to steep slopes in excess of 30 percent." Figure 5.6-1 of the FPEIR indicates that the Project area is located on land identified as having a zero to ten percent slope, which is the lowest of the four potential categories. Additionally, the *Landfill Closure Plan* states that the top deck of the final cover is sloped 3.0 percent in all directions, from the center, for facilitating water runoff; not characteristic of the slopes necessary for a landslide. The Project's component for connecting to the power grid will follow established power lines located above and underground in already developed areas in the City. Therefore, with regards to impacts related to exposing people or structures to potential substantial adverse effects associated with landslides, no impacts are anticipated.

b. Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐

6b. Response: ***(Source: General Plan 2025 FPEIR Figure 5.6-1 – Areas Underlain by Steep Slope, Figure 5.6-4 – Soils, Table 5.6-B – Soil Types, TLCPP)***

According to Figure 5.6-1 of the FPEIR, the Project site is located in a region identified as having a zero to ten percent slope; the lowest category of slope identified on that map. The *Landfill Closure Plan* states that the Landfill's four-foot thick, low-permeability final cover is graded to a 3.0 percent slope and that final grading, compaction, vegetation, and engineered drainage improvements limit erosion of the Landfill's cover. The *Landfill Closure Plan* also states that the final slope faces are maintained and include

drainage structures that minimize erosion. Vegetation was selected on the basis of rooting depth not exceeding the cover layer's depth (four feet), soil type, resistance, climate, rapidity of germination and growth, self-persistence, and maintenance requirements. After placement of the final cover layer, the finished grades were seeded and mulched to establish the plant growth. The City Public Works department conducts routine maintenance of the Landfill cover including repair and replacement of the Landfill's concrete drainage ditches.

The *Landfill Closure Plan* requires that there be a minimum of 80% vegetative cover on the top of the Landfill. To maintain this cover, the solar arrays will be sited and installed at an angle, such that vegetation may continue to grow under the panels and the current maintenance regime may continue. Mitigation measure **MM Geology 2** requires the final design of the PV array be reviewed by the City Public Works Department, the department currently charged with maintenance of the Landfill, to ensure that installation and operation will not interfere with landfill maintenance.

MM Geology 2: The City Public Works Department shall review the final design of the PV arrays, including, but not limited to, the location and spacing of the PV arrays, the area covered by the ballasts, and the angle at which the panels will be installed to ensure that the maintenance and compliance monitoring activities identified in the *Landfill Closure Plan* and the existing drainage pattern of the Landfill site will not be impaired. The recommendations of the Public Works Department relative to the design of the PV arrays shall be taken into consideration by the City Public Utilities Department when approving the final design.

Implementation of the proposed solar power generation facility will not substantially increase the potential for soil erosion or the loss of topsoil since implementation of Project Design features relative to siting the PV arrays and mitigation measure **MM Geology 2** will not substantially alter drainage patterns, vegetative growth intended to aid water absorption, or require grading activities, other than movement of small quantities of soil to smooth out depressions on the surface of the Landfill. Since the solar panel units, flexible conduit, and appurtenant structures will be installed on top of the Landfill surface; anchoring of the PV units will be achieved through the use of weighted bases. No penetration of the Landfill cover will take place and the proposed Project will not substantially alter the existing graded conditions of the site. Construction of the 1,800-SF EEB will introduce a small amount of impervious surface to an already graded area adjacent to the Landfill Flare Station. The methods by which the Project's solar-generated power will be routed to the power grid will be through either new wire in existing underground conduits or new wire on existing pole lines in existing ROWs in paved areas.

With implementation of Project Design features and mitigation measure **MM Geology 2** relative to siting the arrays and implementation of BMPS as required by the Project's SWPPP, potential impacts related to substantial soil erosion or the loss of top soil resulting from Project implementation are considered to be less than significant.

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?	☐	☐	☒	☐

6c. Response: ***(Source: General Plan 2025 Figure PS-1 – Regional Fault Zones, Figure PS-2 – Liquefaction Zones, General Plan 2025 FPEIR Figure PS-3 – Soils with High Shrink-Swell Potential, Figure 5.6-1 – Areas Underlain by Steep Slope, Figure 5.6-4 – Soils, Geo Technical Report, LFSI)***

According to Figure PS-1 of *GP 2025*, the nearest known earthquake fault is located approximately four and one-half miles east of the Project site; the nearest fault zone is located approximately 10 miles to the east of the site. Figure PS-2 of *GP 2025* indicates that the Project site is located within an area identified as having a very high susceptibility to liquefaction; however, as discussed under item 6a.iii above, this map is not indicative of the Project site's specific susceptibility to liquefaction due to the engineered nature of the site and the non-native surface and subsurface material composition in the landfill. Figure PS-3 of *GP 2025* indicates that the Project site is not located in an area with soils identified as having a high shrink-swell potential. The Project site is not located in an area with steep slopes that could result in a landslide, as indicated on Figure 5.6-1 of the FPEIR and discussed in item 6a.4 above.

While the settling of refuse in landfills is a known occurrence that affects the surface contours, this happens over long periods of time and, typically, at a very gradual pace. In addition to the current maintenance program under the direction of the City Public Works Department, it is anticipated that there will be regular maintenance of the solar panels. Maintenance personnel that will regularly clean the solar panels would also report any irregular, new or unexpected settling that might occur on the site. Because of

ISSUES (AND SUPPORTING INFORMATION SOURCES):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

the gradual nature of the settling, the chances of it resulting in substantial impacts is minimal. Additionally, the Project does not propose any substantive structures or components that would add unanticipated weight on the landfill. Furthermore, according to the Project-specific geotechnical report, the surface soils on the Landfill cap will, in their present condition, provide adequate support for the proposed solar energy collection structures that will be mounted on ballast block foundations and rest on the surface of the Landfill cap. The geotechnical report also stated that settlement of the existing cap soil from the addition of the solar energy collection structure loads should not be significant when compared to the settlement of the underlying landfill debris. With respect to the EEB, the results of the *Limited Fill Search Investigation* (Appendix E.2) indicates its general location consists of approximately 4.5 to 6 feet of fill, consisting of silty sand and sand underlain by native soil consisting of poorly graded sand. The EEB is in an area subject to liquefaction. However, given the small size of the EEB, its construction would not increase the instability of the Landfill site.

Therefore, since the Landfill site is not located on or near to a known earthquake fault or fault zone, the site-specific nature of the soils on the Landfill cap make liquefaction unlikely and the EEB (although it will be constructed in an area subject to liquefaction) will be a small unoccupied structure, the soils on the site do not have a high shrink-swell potential, and the site does not include any steep slopes, potential impacts related to being located on a geologic unit or soil that is unstable, or that could become unstable as a result of the Project are considered less than significant.

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?	☐	☐	☒	☐

6d. Response: ***(Source: General Plan 2025 FPEIR Figure 5.6-4 – Soils, General Plan 2025 Figure PS-3 – Soils with High Shrink-Swell Potential, Geo Technical Report, LFSI)***

Figure PS-3 of the *GP 2025* indicates that the Project site is not located in an area with soils that have a high shrink-swell potential, thereby substantially reducing the potential for adverse impacts related to being located on expansive soils. As discussed above, the solar panels will be installed on a closed landfill that has an engineered cap and covering of top soil and sparse vegetation; thus the native soil types and associated descriptions do not fully apply on this topic. In addition, according to UBC Standard Method 18-2 testing practices that were performed on the Landfill's surface, the surface material is found to be non-expansive. With respect to the EEB, the *Limited Fill Search Investigation* indicates the soils on its site are silty sand and sand, underlain by poorly graded sand. These soils are not expansive.

Furthermore, the proposed solar power generation facility does not propose any substantive or habitable structures that could be put at risk. The method by which the Project's solar-generated power will be routed to power grid, will be through either new wire in existing underground conduits or new wire on existing pole lines. Therefore, potential impacts related to locating the Project on expansive soil that could create substantial risks to life or property, are considered less than significant.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

6e. Response: ***(Source: Project Description)***

The proposed Project does not include any component that would require the use of septic tanks or waste water disposal systems since it will not generate waste water. Therefore, with respect to septic tanks and alternative waste water disposal systems, no impacts are anticipated.