

Appendix A

Mitigated Negative Declaration



Mitigated Negative Declaration

Alameda Municipal Power Solar Project

1. Name of Project:	Alameda Municipal Power Solar Project (PLN19-0601)
2. Project location – Identify street address and cross streets or attach a map showing the project site (preferably a USGS 7½' or 15' topographical map identified by quadrangle name):	<p>The Project site is located northwest of the intersection of Doolittle Drive and Harbor Bay Parkway in the northeastern area of Bay Farm Island within the City of Alameda, Alameda County at the City-owned Doolittle Landfill Site</p> <p>Section 14, Township 2 South, Range 3 West, Mount Diablo B&M 37° 44' 49.24" N, -122° 13' 53.61" W Assessor's Parcel Number 074-1040-001-00</p>
3. Entity or Person undertaking project:	
A. Lead Agency	
(1) Name:	City of Alameda
(2) Address:	2263 Santa Clara Avenue, Alameda, California 94501
B. Project Sponsor	
(1) Name:	Alameda Municipal Power
(2) Address:	2000 Grand Street, Alameda, California 94501
<p>Project Description: The project consists of the construction and operation of a 2.0 megawatt photovoltaic solar facility on an 11-acre portion of the 33.2-acre site, located northwest of the intersection of Doolittle Drive and Harbor Bay Parkway, in the northeastern area of Bay Farm Island in Alameda. The proposed technology type for the solar project is fixed-tilt solar array and will contain approximately 7,830 solar modules on site. The subject site is currently owned and maintained by the City of Alameda and contains the closed Doolittle solid waste landfill. The Doolittle Class III solid waste landfill began operation in 1953 and was closed in 1985. The property is located within the M-2, General Industrial Zoning District. The property is designated as Parks and Public Open Space by the General Plan, and is planned to be the future</p>	

location of an open space park. The project will require approval of a use permit, lease of city land, and a power purchase agreement. The term of the approvals is anticipated to be for up to 25 years. At the end of life of the project all equipment would be removed to allow the City to develop the open space park at this site.

The Director of the Planning, Building and Transportation Department finds the project described above will not have a significant effect on the environment. The initial study identifies one potentially significant effect on the environment that can be mitigated to less than significant with the implementation of Mitigation Measure **MM-BIO-1**.

Summary of Findings:

3.5 Aesthetics

Aesthetics a. Would the project have a substantial adverse effect on a scenic vista? **Answer: No Impact.**

Aesthetics b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? **Answer: No Impact.**

Aesthetics c. In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? **Answer: No Impact.**

Aesthetics d. Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area? **Answer: Less than Significant.**

3.6 Agriculture and Forestry Resources

Agriculture and Forestry Resources. a. Would the project 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? **Answer: No Impact.**

Agriculture and Forestry Resources. b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract? **Answer: No Impact.**

Agriculture and Forestry Resources. c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526),

or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? **Answer: No Impact**

Agriculture and Forestry Resources. d. Would the project result in the loss of forest land or conversion of forest land to non-forest use? **Answer: No Impact.**

Agriculture and Forestry Resources. e. Would the project 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?

Answer: No Impact.

3.7 Air Quality

Air Quality. a. Would the project conflict with or obstruct implementation of the applicable air quality plan? **Answer: Less than Significant.**

Air Quality. b. Would the project result in 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? **Answer: Less than Significant.**

Air Quality. c. Would the project expose sensitive receptors to substantial pollutant concentrations? **Answer: Less than Significant.**

Air Quality. d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? **Answer: Less than Significant.**

3.8 Biological Resources

Biological Resources. a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? **Answer: Less than significant with mitigation incorporated.**

MM-BIO-1:

If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds shall be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest

is discovered during the pre-construction clearance survey, construction activities should stay outside of a no-disturbance buffer. The size of the no-disturbance buffer will be determined by the wildlife biologist and will depend on the level of noise and/or surrounding anthropogenic disturbances, line of sight between the nest and the construction activity, type and duration of construction activity, ambient noise, species habituation, and topographical barriers. These factors will be evaluated on a case-by-case basis when developing buffer distances. Limits of construction to avoid an active nest will be established in the field with flagging, fencing, or other appropriate barriers; and construction personnel will be instructed on the sensitivity of nest areas. A biological monitor should be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.

Biological Resources. b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? **Answer: No Impact.**

Biological Resources. c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? **Answer: No Impact.**

Biological Resources. d. Would the project 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? **Answer: No Impact.**

Biological Resources. e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? **Answer: No Impact.**

Biological Resources. f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan? **Answer: No Impact.**

3.9 Cultural Resources

Cultural Resources. a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? **Answer: No Impact.**

Cultural Resources. b. Would the project cause a substantial adverse change in the significance of an archeological resource pursuant to §15064.5? **Answer: Less than Significant.**

Cultural Resources. c. Would the project disturb any human remains, including those interred outside of formal cemeteries? **Answer: Less than Significant.**

3.10 Energy

Energy. a. Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? **Answer: No Impact.**

Energy. b. Would the project conflict or obstruct a state or local plan for renewable energy or energy efficiency? **Answer: No Impact.**

3.11 Geology and Soils

Geology and Soils. a. i. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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. **Answer: No impact.**

Geology and Soils. a. ii. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking? **Answer: Less than Significant.**

Geology and Soils. a. iii. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction? **Answer: Less than Significant.**

Geology and Soils. a. iv. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides? **Answer: No Impact.**

Geology and Soils. b. Would the project result in substantial soil erosion or the loss of topsoil? **Answer: No Impact.**

Geology and Soils. c. Would the project 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? **Answer: No Impact.**

Geology and Soils. d. Would the project 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? **Answer: No Impact.**

Geology and Soils. e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? **Answer: No Impact.**

Geology and Soils. f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? **Answer: Less than Significant.**

3.12 Greenhouse Gas Emissions

Greenhouse Gas Emissions. a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance? **Answer: Less than Significant.**

Greenhouse Gas Emissions. b. Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emission of greenhouse gases? **Answer: No Impact.**

3.13 Hazards and Hazardous Materials

Hazards and Hazardous Materials. a. Would the project create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials? **Answer: Less than Significant.**

Hazards and Hazardous Materials. b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? **Answer: Less than Significant.**

Hazards and Hazardous Materials. c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? **Answer: Less than Significant.**

Hazards and Hazardous Materials. d. Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? **Answer: Less than Significant.**

Hazards and Hazardous Materials. e. Would the project be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? **Answer: Less than Significant.**

Hazards and Hazardous Materials. f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? **Answer: No Impact.**

Hazards and Hazardous Materials. g. Would the project expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires? **Answer: No Impact.**

3.14 Hydrology and Water Quality

Hydrology and Water Quality. a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? **Answer: Less than Significant.**

Hydrology and Water Quality. b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable ground management of the basin? **Answer: No Impact.**

Hydrology and Water Quality. c.i. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site? **Answer: No Impact.**

Hydrology and Water Quality. c.ii. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? **Answer: No Impact.**

Hydrology and Water Quality. c.iii. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff? **Answer: No Impact.**

Hydrology and Water Quality. c.iv. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces in a manner which would impede or redirect flood flows? **Answer: No Impact.**

Hydrology and Water Quality. d. Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? **Answer: No Impact.**

Hydrology and Water Quality. e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? **Answer: No Impact.**

3.15 Land Use and Planning

Land Use and Planning. a. Would the project physically divide an established community? **Answer: No Impact.**

Land Use and Planning. b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? **Answer: No Impact.**

3.16 Mineral Resources

Mineral Resources. a. Would the project result in the loss of availability of a known resource that would be of value to the region and the residents of the state? **Answer: No Impact.**

Mineral Resources. b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? **Answer: No Impact.**

3.17 Noise

Noise. a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? **Answer: No Impact.**

Noise. b. Would the project result in generation of excessive groundbourne vibration or groundbourne noise levels? **Answer: No Impact.**

Noise. c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport, would the project expose people residing or working in the project area to excessive noise levels? **Answer: No Impact.**

3.18 Population and Housing

Population and Housing. a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? **Answer: No Impact.**

Population and Housing. b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? **Answer: No Impact.**

3.19 Public Services

Public Services. a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for **fire protection services**? **Answer: No Impact.**

Public Services. a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for **police protection services**? **Answer: No Impact.**

Public Services. a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives **for schools**? **Answer: No Impact.**

Public Services. a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives **for parks**? **Answer: No Impact.**

Public Services. a.5. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction

of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for **other public facilities**? **Answer: No Impact.**

3.20 Recreation

Recreation. a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? **Answer: No Impact.**

Recreation. b. Would the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? **Answer: No Impact.**

3.21 Transportation

Transportation/Traffic. a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? **Answer: No Impact.**

Transportation/Traffic. b. For a land use project, would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)? **Answer: No Impact.**

Transportation/Traffic. c. For a transportation project, would the project conflict with CEQA Guidelines section 15064.3, subdivision (b)(3)? **Answer: No Impact.**

Transportation/Traffic. d. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? **Answer: No Impact.**

Transportation/Traffic. e. Would the project result in inadequate emergency access? **Answer: No Impact.**

3.22 Tribal Cultural Resources

Tribal Cultural Resources. 1). Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code §5020.1(k). **Answer: No Impact.**

Tribal Cultural Resources. 2). Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code §5024.1(c), and considering the significance of the resource to a California Native American tribe.
Answer: No Impact.

3.23 Utilities and Service Systems

Utilities and Service Systems. a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?
Answer: No Impact.

Utilities and Service Systems. b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? **Answer: No Impact.**

Utilities and Service Systems. c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? **Answer: No Impact.**

Utilities and Service Systems. d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? **Answer: No Impact.**

Utilities and Service Systems. e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?
Answer: No Impact.

3.24 Wildfire

Wildfire. a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan? **Answer: No Impact.**

Wildfire. b. Would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? **Answer: No Impact.**

Wildfire. c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risks or that may result in temporary or ongoing impacts to the environment? **Answer: No Impact.**

Wildfire. d. Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? **Answer: No Impact.**

3.25 Mandatory Findings of Significance

Mandatory Findings of Significance. a. Would the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? **Answer: Less than Significant with Mitigation Incorporated.**

Mandatory Findings of Significance. b. Would the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) **Answer: Less than Significant with Mitigation Incorporated.**

Mandatory Findings of Significance. c. Would the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? **Answer: Less than Significant.**

The City of Alameda finds that the Initial Study/Mitigated Negative Declaration reflects its independent judgment. A copy of the Initial Study and Mitigation Monitoring and Reporting Program can be found at Planning Building and Transportation Department or accessed online at <https://www.alamedaca.gov/Departments/Planning-Building-and-Transportation/Planning-Division/Major-Planning-Projects>. Please scroll down to the Alameda Municipal Power Solar Project when accessing the linked website.

The location and custodian of the documents and any other materials which constitute the record of proceedings upon which the City of Alameda based its decision to adopt this Initial Study/Mitigated Negative Declaration are as follows:

Custodian:	Andrew Thomas, Planning Director	Location:	Planning, Building & Transportation Department 2263 Santa Clara Avenue, Room 190 Alameda, California 9401-4477
Phone:	(510) 747-6800		
Date:		Signature:	

Appendix B
Burns & McDonnell Phase 2C Report

Alameda Landfill Site Plan Development



Northern California Power Agency

**Alameda Landfill Site
Project No. 107642**

**Revision 2
5/16/2019**

Alameda Landfill Site Plan Development

prepared for

**Northern California Power Agency
Alameda Landfill Site
Alameda, California**

Project No. 107642

**Revision 2
5/16/2019**

prepared by

**Burns & McDonnell Engineering Company, Inc.
Phoenix, Arizona**

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TABLE OF CONTENTS

	<u>Page No.</u>
1.0 SITE DESCRIPTION	1-1
1.1 Site Development Evaluation	1-1
1.2 Constructability Evaluation	1-3
1.3 Project Development Evaluation	1-4
2.0 TECHNOLOGY RECOMMENDATION	2-1
2.1 Solar PV Modules	2-1
2.2 Solar PV Racking.....	2-1
2.3 Inverters	2-2
3.0 CONCEPTUAL LAYOUT	3-1
3.1 Solar PV Layout.....	3-1
3.2 Electrical Layout.....	3-1
4.0 CONCEPTUAL SINGLE-LINE DIAGRAM	4-1
5.0 SITE PREPARATION REQUIREMENTS.....	5-1
5.1 Cultural Resources	5-1
5.2 Landfill Site Maintenance.....	5-1
6.0 PERMITTING	6-1
6.1 Wildlife Concerns	6-1
6.2 Permit Matrix	6-1
 ATTACHMENT 1 – SITE LAYOUT	
ATTACHMENT 2 – SINGLE LINE ELECTRICAL DIAGRAM	
ATTACHMENT 3 – ALUCP MAPS	
ATTACHMENT 4 – LANDFILL GAS WELL AND CONTOUR MAP	
ATTACHMENT 5 – DETAILED DOOLITTLE CONTOUR MAP	
ATTACHMENT 6 – CA NATURAL DIVERSITY DATABASE MAP	
ATTACHMENT 7 – PERMIT MATRIX	

LIST OF TABLES**Page No.**

Table 3-1: Preliminary PV Design Parameters	3-1
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LIST OF FIGURES

	<u>Page No.</u>
Figure 1-1: Project Overview Map	1-1
Figure 1-2: Photo of Project Site	1-3
Figure 2-1: Map Displaying Contour and Landfill Gas Wells	2-1
Figure 2-2: Landfill PV Array Example	2-2
Figure 3-1: Available Interconnection Points	3-2

LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
ALUCP	Airport Land Use Compatibility Plan
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
CEQA	California Environmental Quality Act
City	City of Alameda
CNDDB	California Natural Diversity Database
FAA	Federal Aviation Administration
kV	Kilovolt
MWac	Megawatts Alternating Current
POI	Point of Interconnection
Project	Alameda Landfill Solar Photovoltaic Site
PV	Photovoltaic
W	Watt

1.0 SITE DESCRIPTION

The Alameda landfill solar photovoltaic site (“Project”) is located on a closed Class III solid waste disposal site, known as Alameda Doolittle Landfill, in the northeastern area of Bay Farm Island. The Project’s coordinates are 122°13'53.61"W, 37°44'49.34"N. The Project site is comprised of approximately 33.2 acres. The Alameda Doolittle Landfill began operation in 1953 and was closed in 1985. The Project, shown in Figure 1-1 below, is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive, and on the east by Martin Luther King Jr. Regional Shoreline Park on Doolittle Pond.

Figure 1-1: Project Overview Map



Source: NCPA

A detailed site layout can be seen in Attachment 1.

1.1 Site Development Evaluation

The Project team did not discover any obvious fatal flaws during high-level environmental analyses utilizing GIS and publicly available data.

The Project is located in an area with minimal flood hazard, which according to the Federal Emergency Management Administration flood zone designations is an area above the 500-year flood level. The

nearest hydrologic feature is the San Leandro Bay, a body of water in the San Francisco Bay which borders the Project to the north. According to National Wetlands Inventory data, riverine wetlands are present across the Project. However, the wetlands appear to directly align with the gas collection piping that currently exists above grade.

The Project team did not discover any obvious fatal flaws during the site development analyses. The Project is not located on Williamson Act governed land. The Chuck Corica Municipal Golf Complex is located approximately 130 feet across Doolittle Drive to the south, and the property line on the northwest edge of Oakland International Airport is 320 feet to the southeast. Amelia Earhart Elementary School is located approximately 1,000 feet to the southwest of the Project and the nearest residence sits west of the Project, opposite Doolittle Drive, approximately 320 feet away. The elevation of the site should serve to screen the Project from the residential area and thus is not considered to be a major concern. The land is currently owned and operated by the City of Alameda (“City”) and is zoned as industrial due to the off-gassing from the existing landfill. Upon further development of the Project, consultation with including but not limited to the City, Federal Aviation Administration (“FAA”), and Bay Area Air Quality Management District will be necessary.

According to the Airport Land Use Compatibility Plan (“ALUCP”), the Project lies within the Airport Influence Area and is subject to ALUCP airspace protection policies as well as regulations enacted by FAA and the State of California. The ALUCP for Oakland International Airport presents the criteria, maps, and policies to be utilized by the Alameda County Airport Land Use Commission and other local jurisdictions. Local agencies are expected to be in support of this Project as solar photovoltaic (“PV”) panels are in operation at the Oakland International Airport.

Most of the Project is located within Safety Compatibility Zone 6 Traffic Pattern Zone, while the eastern side is within Zone 4 Outer Approach/Departure Zone. The Project location is classified as an Aviation Easement Zone, which may require limitations on noise or other effects that could impact aircraft operations. The Project also falls within the imaginary surfaces defined for the Oakland International Airport in accordance with Federal Aviation Regulation, also known as FAR, Part 77. The solar developers PV site layout must be informed by a glint-glare analysis conducted by the City. See Attachment 3 for maps related to FAA compliance. Solar developers are responsible for understanding and complying with current and applicable FAA regulations.

The site can be accessed at the intersection of Doolittle Dr. and Harbor Bay Parkway. There is a public parking lot adjacent to the Project that is shared with a public recreation area. Material storage will be

limited on-site as potential damage to the landfill cap must be minimized. The existing landfill lines must also be considered during site development.

1.2 Constructability Evaluation

Evaluation categories for the constructability criteria included an analysis of the existing terrain, site access availability, presence of trees, and existing soils present at the site of the Project. Burns & McDonnell Engineering Company, Inc (“Burns & McDonnell”) reviewed each category at a high-level, using GIS and publicly available data.

The Project team did not discover any obvious fatal flaws during the constructability analyses. Since the site is already developed, there is no tree clearing required. While solar developers are expected to control vegetation levels as part of the operations and maintenance of the Project, no significant weed abatement or clearing is expected prior to construction. See Figure 1-2 for a photo of the Project site.

Figure 1-2: Photo of Project Site



Source: Burns & McDonnell

The Project is located on a landfill with a low grade at the crown and higher grades at the perimeter of the parcel. Steep slopes are present at both the north and south edges of the property. A contour map can be seen in Attachment 4 and a more detailed version is provided in Attachment 5. Additive grading was analyzed by the Project team, though this is not recommended because it will add a considerable amount of cost to the Project and require additional runoff prevention measures to ensure the grade is kept stable and stormwater runoff is controlled accordingly. Since the Project was previously utilized as a landfill, it is recommended to minimize disturbance of the terrain to mitigate any risk of damaging the existing landfill gas system and/or the landfill cap. Solar developers are responsible for containing the risk of damaging the landfill gas system during construction and operations, and maintenance and would be responsible for any damages to the landfill gas system. An independent structural analysis will need to be completed to evaluate the impact of a PV system under resting load, dynamic load (during construction and operations and maintenance), wind conditions, and seismic events.

The current landfill cap is approximately four feet thick, which requires the solar panels to be ballasted and rack mounted (cast-in place concrete anchors at grade). Ballasted rack mounted systems require a fixed-panel design and low site grade as steep slopes pose a risk for the panels to slide. Boundaries of the Project are steeply sloped, so it is recommended that panels only be installed on the flat inner portion of the site.

Areas with grading greater than 15% should be avoided. The array size could be increased if modules were placed on areas of site with steeper grade. However, operations and maintenance could be prohibitively expensive for these sections, thus, it is recommended to only install modules on the relatively flat upper portion of the landfill gas site.

PV arrays should be arranged around gas lines, considering the requirements of operations and maintenance of the landfill gas system. This topic is discussed on a conceptual level in Section 5.2.

1.3 Project Development Evaluation

Evaluation categories for the project development criteria included analysis of solar resource potential, panel performance, technology suitability, and electrical interconnection. Burns & McDonnell reviewed the Project against each category at a high-level, using GIS and publicly available data.

The Project team did not discover any obvious fatal flaws during the project development analyses. The Project has a below average potential for dust and dirt accumulation. As the site is elevated with no tall structures adjacent, near shading is expected to be minimal.

Burns & McDonnell received data identifying the location of the point of interconnection (“POI”) along with some additional site-specific information. The selected POI is located on feeder 4214 adjacent to the Project site at the southeast entry gate, near the adjacent public recreation area. The Project team concluded that, based on the conductor ratings, a maximum power output of 2.7 MVA can be injected at the POI.

2.0 TECHNOLOGY RECOMMENDATION

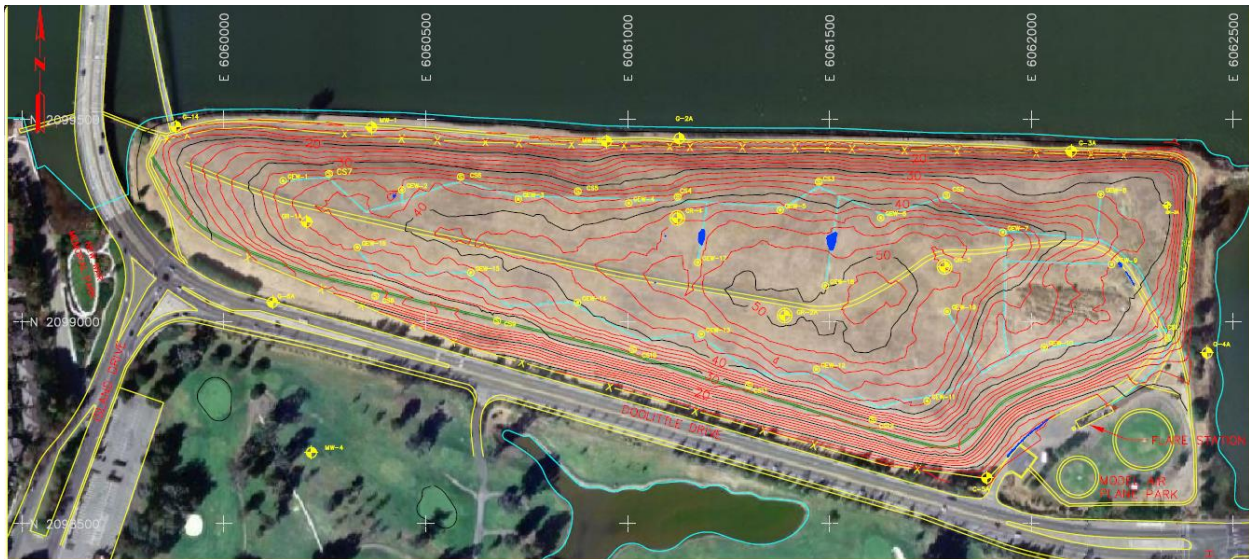
2.1 Solar PV Modules

For the conceptual Project layout, 340-Watt (“W”) PV modules were considered. Although this module capacity was considered as part of the preliminary site selection, higher efficiency modules should be considered by the developer. It is the developer’s responsibility to determine the appropriate module technology that would maximize annual energy production and provide the lowest price for energy to the City.

2.2 Solar PV Racking

The proposed array design at this location is a fixed-tilt solar array system. A ballasted racking system installed at grade is recommended to prevent disturbance of the landfill gas system and/or landfill cap that is installed at a four-foot depth. The racking system must not negatively impact the underground gas lines shown below in Figure 2-1 in light blue. The map below is provided in a larger format for clarity in Attachment 4.

Figure 2-1: Map Displaying Contour and Landfill Gas Wells



Source: Public Waste Services Inc.

A different detailed contour drawing is provided in Attachment 5. The conceptual PV site layout in Attachment 1 was modeled to avoid steep slopes and gas lines and should be considered preliminary in nature. It is the developer’s responsibility to determine the appropriate racking technology that would maximize annual energy production and provide the lowest price for energy to the City.

The images in Figure 2-2 show an example of a ballasted fixed-tilt PV on a landfill gas site. These images are provided for conceptual purposes.

Figure 2-2: Landfill PV Array Example



Source: PV Magazine

2.3 Inverters

String inverters are the preferred technology given the size of the Project and were considered in the conceptual single-line diagram. This general arrangement is recommended as a cost-effective approach to converting DC power to AC power, but other arrangements could be considered. It is the developer's responsibility to determine the most economic inverter(s) to utilize for this Project.

3.0 CONCEPTUAL LAYOUT

3.1 Solar PV Layout

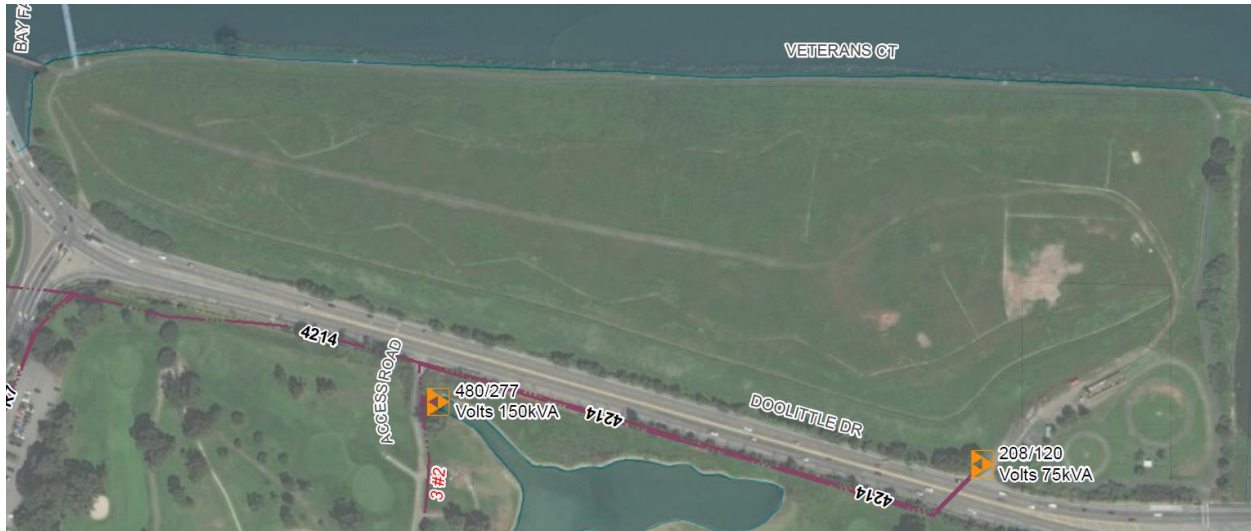
See Attachment 1 for a preliminary PV array layout. A summary of the preliminary Project layout design parameters is provided in Table 3-1.

Table 3-1: Preliminary PV Design Parameters

Parameter	Content
Project Buildable Area	33.2 Acres
Approximate PV Project Area	11.2 Acres
Estimated Project Size (DC)	2.6 MWdc
Estimated Project Size (AC)	2.0 MWac
Target DC:AC Ratio	1.3
POI Voltage	12.47 kilovolt (“kV”)
Overhead Distribution Line Setback	N/A
Wetland Setback	50 Feet
Site Access Buffer from Perimeter to Array	30 Feet
Security and Fencing	Upgrade existing to 6-foot chain link fence
Module Size	Minimum 340 W
Racking System	Fixed Tilt between 30-33° south facing. Avoid slopes >15%
Inverters	String Inverters

3.2 Electrical Layout

The power from the Project will be injected into a POI onsite at the southeast corner gate entry. Figure 3-1 below shows the circuit Feeder 4214.

Figure 3-1: Available Interconnection Points

Source: Alameda Municipal Power

The transformer shown in Figure 3-1 on the southeast area of the Project is not a suitable POI. The developer will furnish and install a new 2.5 mega-volt ampere (“MVA”) pad-mounted transformer. To minimize cost, it is recommended to locate the new transformer near the existing one. It is recommended that the existing primary box located near the existing transformer be used to feed the new transformer. The developer will provide and install a separate two-way pad-mounted switch with two incoming terminations to maintain the loop configuration of the existing electrical distribution system. The two-way switch will be owned by Alameda Municipal Power. The City will be responsible for terminating the conductors from the transformer to the two-way switch. A custody transfer meter will be installed on the 12.47 kV side of the transformer. Underground cabling, if required, must not penetrate or damage the landfill liner.

4.0 CONCEPTUAL SINGLE-LINE DIAGRAM

See Attachment 2 for a conceptual single-line electrical diagram. The single-line diagram is provided for reference only. The developer will be responsible for the final design and all appropriate design documents required for the Project.

5.0 SITE PREPARATION REQUIREMENTS

5.1 Cultural Resources

As the Project is located on a built-up landfill, there is no potential for cultural resources.

5.2 Landfill Site Maintenance

The solar PV array should be designed, operated and maintained without interrupting the operations and on-going maintenance of the landfill gas system located on-site. The solar developer must consult the City and/or landfill gas plant operations team to understand the tasks performed on the landfill gas system. All operations and maintenance tasks by the solar developer must comply with the requirements of the landfill gas system operators during the operations and maintenance of the Project.

As part of regulatory and permit requirements, the City is required to extract methane from the landfill. This task is accomplished through an extensive network of heavy-duty plastic pipes and wells, which collect the gas and deliver it to a flare structure, where it is incinerated. The flare structure is operated a minimum of eight hours a day, seven days a week. The landfill gas system operators may require access to the gas pipe, wells, and other areas of the Project to perform air quality operations and maintenance during the construction period and throughout the Project's life.

Some of the tasks the solar developer must consider when constructing and maintaining the Project may include but are not limited to:

1. Bi-weekly monitoring and maintenance of the landfill gas collection, extraction, and flare system.
2. Bi-monthly site observations and completion of the Systems Management Plan observations report as required by RWQCB Work Order 95- 189.
3. Quarterly inspections for site security and drainage, erosion, and litter control.
4. Re-grading the landfill surface to eliminate ponding and ensure proper drainage profile.
5. Annual mowing of weeds for fire control.
6. Annual system evaluation and site inspection with personnel and preparation of findings report, including implementation of corrective actions, as required.
7. Provide system repairs, materials, special projects, and other related work on an as-needed basis.

8. Emergency call-outs to meet the regulatory requirement to limit downtime to less than four hours whenever the flare shuts down.

6.0 PERMITTING

6.1 Wildlife Concerns

According to the Golden Gate Audubon, Burrowing Owls have been seen near the site at the Martin Luther King Jr. Shoreline Park. Burrowing Owls are protected by the Migratory Bird Treaty Act. The owls occupy burrows excavated by California Ground Squirrels. Additional burrowing should be prevented, as this could impact the structural stability of the solar PV racking system.

The California Natural Diversity Database (“CNDDDB”) map in Attachment 6 additional species within the Project boundary. The species identified on the CNDDDB within the Project boundary are protected under State and Federal laws. Solar developers should understand the applicable environmental regulations to consider how construction activities could impact wildlife and habitats.

Mitigation measures must be implemented to deter or prevent all birds from landing, perching and/or nesting on the arrays, in ways that do not entrap or otherwise harm wildlife. The solar developer will be responsible for implementing and monitoring the mitigation measures dictated by the California Environmental Quality Act (“CEQA”) document and any subsequent environmental permits. The City will provide any CEQA required permits.

6.2 Permit Matrix

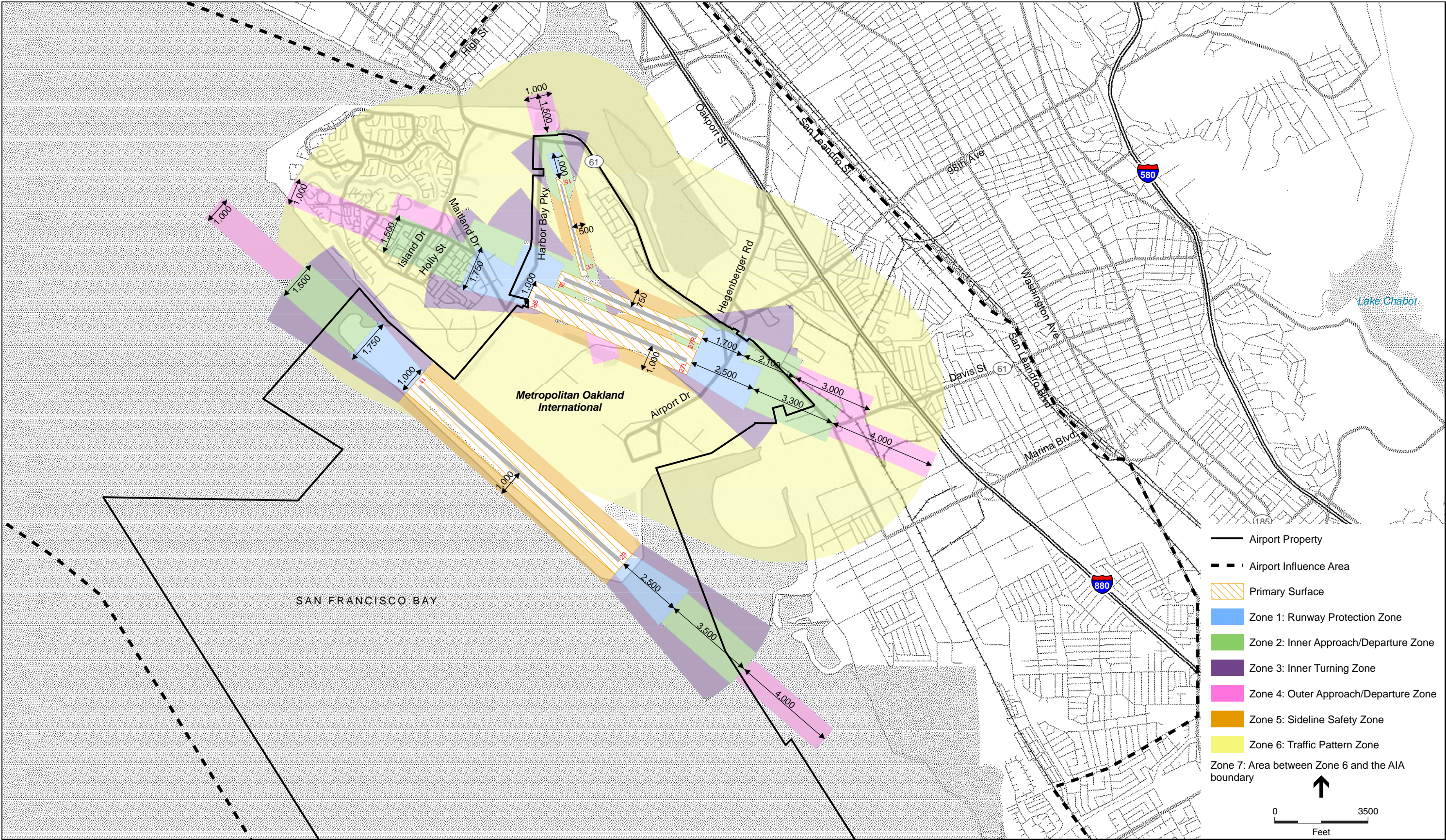
See Attachment 7 for the Permit Matrix. The solar developer will be responsible for all permits except for the CEQA required permits provided by NCPA.

ATTACHMENT 1 – SITE LAYOUT

—

ATTACHMENT 2 – SINGLE LINE ELECTRICAL DIAGRAM

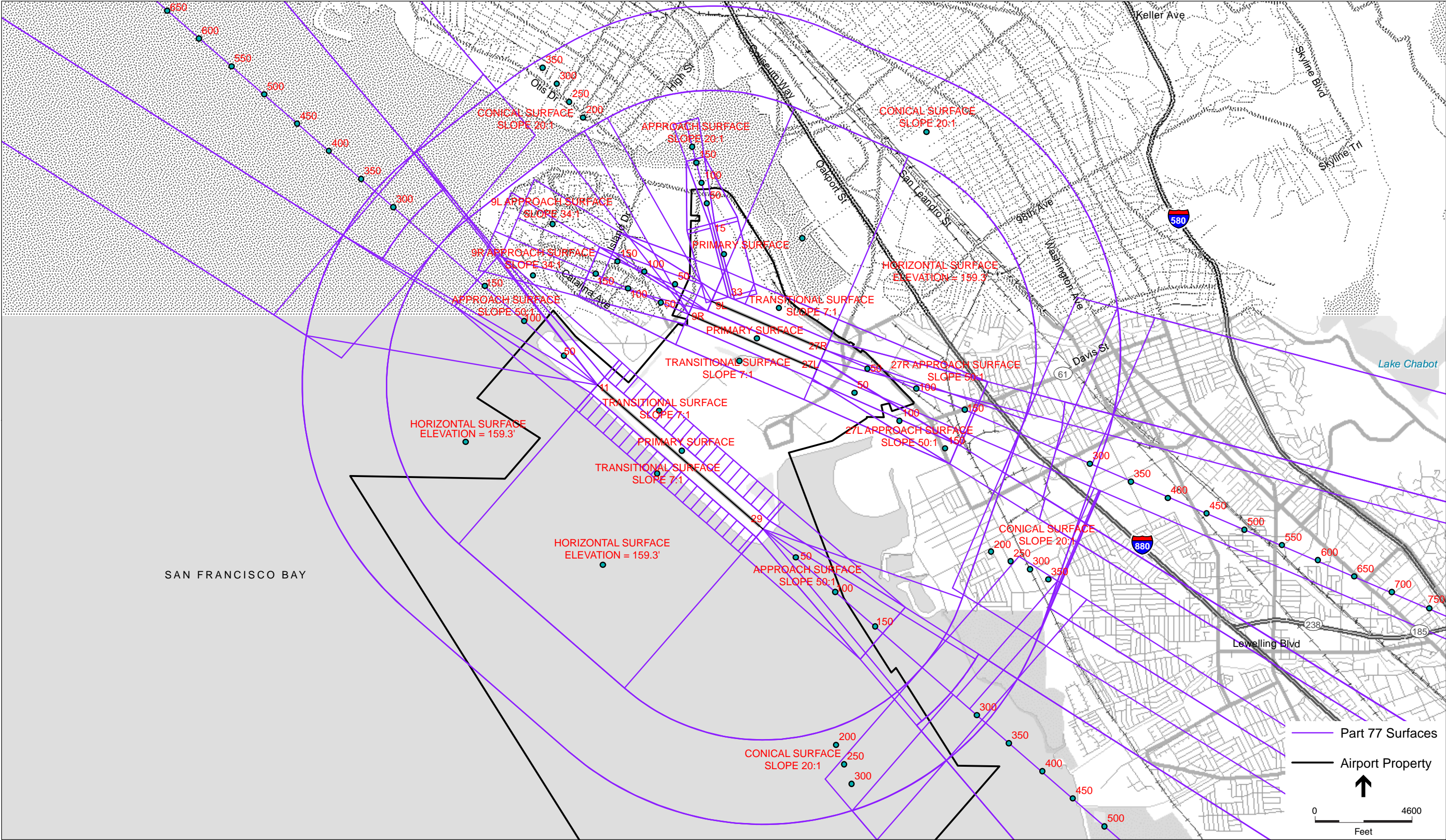
ATTACHMENT 3 – ALUCP MAPS



SOURCE: ESA Airports, ESRI, OAK Airport Master Plan, 2006, Caltrans California Airport Land Use Planning Handbook, 2002

Figure 3-4
Safety Compatibility Zones

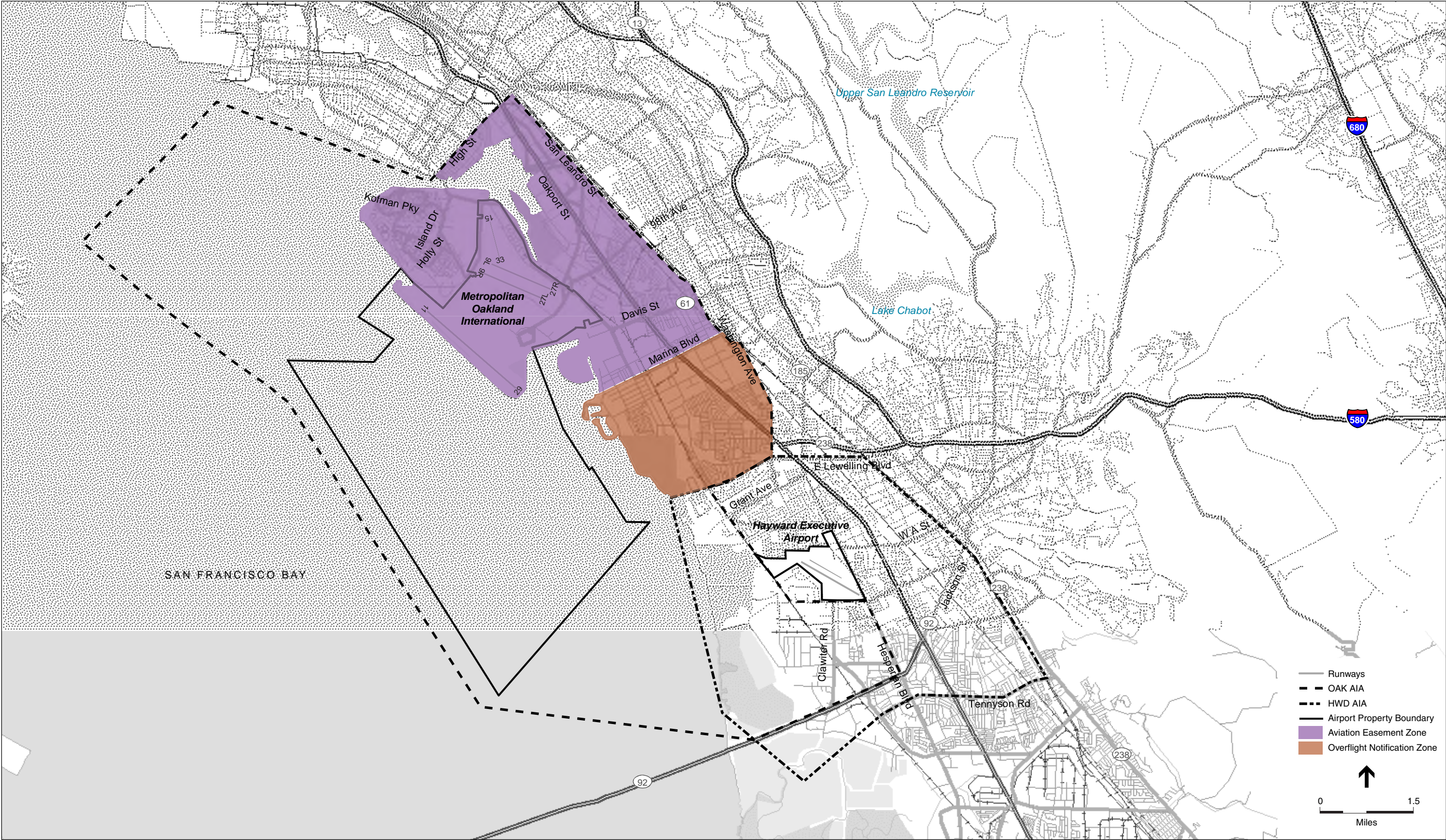
APPENDIX C - ALUCP MAPS



SOURCE: ESA Airports, ESRI, OAK Airport Master Plan, 2006

Figure 3-5
Oakland International Airport FAR Part 77 Sufaces

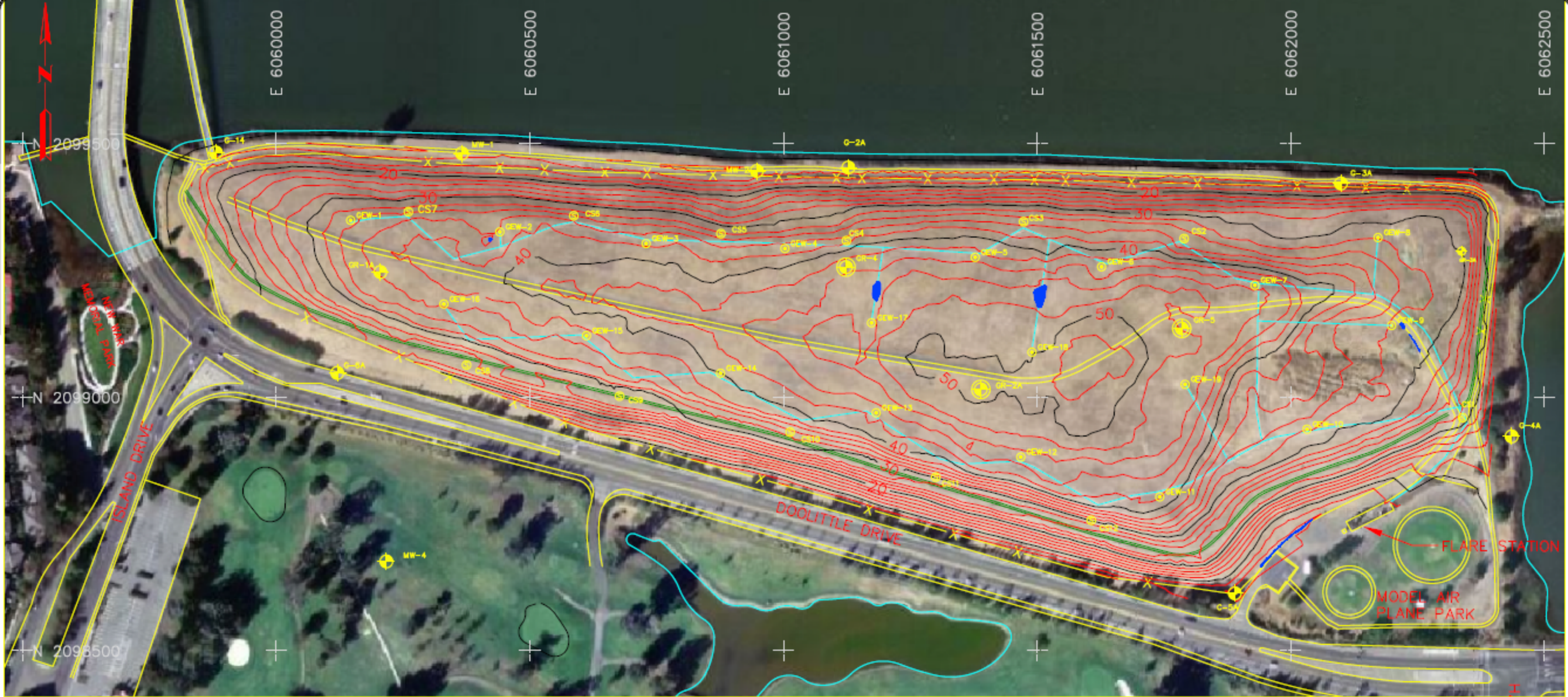
APPENDIX C - ALUCP MAPS



SOURCE: ESA Airports, ESRI, OAK Airport Master Plan, 2006

Figure 3-6
OAK Overflight Compatibility Zones

ATTACHMENT 4 – LANDFILL GAS WELL AND CONTOUR MAP



LEGEND

- | | | | |
|--|------------------------------------|--|--|
| | LANDFILL GAS WELL | | INDEX CONTOUR |
| | CONDENSATE SUMP | | INTERVAL CONTOUR |
| | GROUND WATER MONITORING WELL | | PONDED WATER OBSERVED ON 2-22-17
PER RWQCB WDR WEEKLY OBSERVATION REPORT #4 |
| | GROUND LEACHATE MONITORING WELL | | |
| | ABANDONED LEACHATE MONITORING WELL | | |

NOTES:

BASE MAP BY P.W.S. GPS SURVEY DATED 3-14-14

ATTACHMENT 5 – DETAILED DOOLITTLE CONTOUR MAP

SAN LEANDRO BAY



DRAWING SCALE: 1 IN.= 100 FT.
08/17/2017

TOPOGRAPHICAL MAP OF
DOOLITTLE LANDFILL

CONTOUR SOURCE:
NOAA OFFICE FOR COASTAL MANAGEMENT
DATA ACCESS VIEWER

ATTACHMENT 6 – CA NATURAL DIVERSITY DATABASE MAP

Path: H:\dwholder\NCPA_SolarProject\1\ArcDocs\NCPA_Alameda_ProjectData_CNDDB.mxd dwholder 7/3/2018
COPYRIGHT © 2018 BURNS & MCDONNELL ENGINEERING COMPANY, INC.
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



CNDDB

Alameda song sparrow

California Ridgway's rail

California black rail

Marin knotweed

Point Reyes salty bird's-beak

dark-eyed gilia

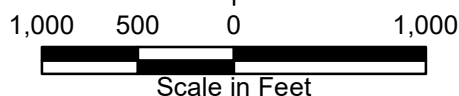
longfin smelt

mimic tryonia (=California brackishwater snail)

western snowy plover

Legend

- Site Parcel Boundary
- City Boundary



NCPA Solar Project 1
Phase 2B Site Screening/
Fatal Flaw Analysis
Alameda Site
Alameda County, CA

ATTACHMENT 7 – PERMIT MATRIX

**Alameda Site Solar
Major Permits**

Item No.	Permit/Approval	Description	Regulatory Entity	Comments	Estimated Agency Review Time
Federal					
1	Section 404 Dredge & Fill Permit	Depending upon the quantity and quality of jurisdictional wetland or other waters of the U.S. impacts, a Section 404 permit may be required from the USACE.	United States Army Corps of Engineers (USACE)	Depending upon the extent of impacts to wetlands or other waters of the U.S., a preconstruction notification, Nationwide Permit (NWP), or Individual Permit (IP) could be required for the project. A wetland delineation is necessary to determine if wetlands or other waters of the U.S. exist and if they'll be impacted by the project.	30-45 days for NWP; 6 months or more for IP
2	Form FAA 7460-1 - Notice of Proposed Construction or Alteration	The site falls within the imaginary surfaces defined for the Airport in accordance with Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace.	Federal Aviation Administration (FAA)	For off-airport projects, local governments, solar developers, and other stakeholders in the vicinity of an airport have the responsibility to inform the FAA about proposed projects so that the agency can determine if the project, especially if large, presents any safety or navigational problems.	The FAA will conduct an aeronautical study of the project and will issue a determination of hazard or no hazard. The timeline for these approvals is typically 30-45 days.
State					
3	California Environmental Quality Act (CEQA) Compliance	CEQA compliance is triggered by projects that require discretionary approval by a public agency and that are not exempt.	CEQA Lead Agency - NCPA	Given the existing conditions on the proposed site of development, the lead agency would likely recommend CEQA compliance in the form of an Initial Study/Mitigated Negative Declaration (IS/MND). An IS/MND is typically used when a lead agency prepares an initial study and determines that the projects' impacts may be potentially significant, but the agency can apply mitigation measures to avoid or reduce those impacts to a less-than-significant level. In this case, the MND would require mitigation to reduce significant adverse impacts identified in the Initial Study to less-than-significant levels. The applicant would be required to agree in writing to the mitigation measures, otherwise an Environmental Impact Report must be prepared.	6-8 months
4	Section 401 - Water Quality Certification (WQC)	Depending upon the quantity and quality of jurisdictional wetland or other waters of the U.S. a Section 401 water quality certification may be required from the Regional Water Quality Control Board.	Regional Water Quality Control Board (RWQCB)/ACOE	Section 401 WQCs are typically issued along with the certain ACOE NWPs; if an IP is required from the ACOE, a separate 401 WQC may be required from the RWQCB. A request for 401 WQC is prepared and submitted by the RWQCB. Information required is nearly identical to information required for 404 permit. NPDES permits require the submission to a Storm Water Pollution Prevention Plan.	30-45 days for NWP; 6 months or more for IP
5	California Department of Fish and Wildlife (CDFW) Section 2080 Take Permit	Required if the project has the potential to result in take of a state-only listed endangered or threatened species	California Department of Fish and Wildlife (CDFW)	Should a biological resources reconnaissance confirm that state listed species exists onsite and could be impacted, the applicant would submit application to CDFW and identify mitigation measures to reduce avoid and minimize potential for take.	Timeline for authorization is approximately 30 to 90 days depending on the species involved and the complexity of the project.
6	NPDES Construction Permit & Stormwater Pollution Prevention Plan (SWPPP)	Land disturbances over 1 acre will require the project to comply with Section 402 and be required to obtain a General Permit for discharging construction-related stormwater. As part of this permit a SWPPP will need to be prepared.	SWRCB	No public participation is required for this general permit. Submittal information includes the completed application forms to SWRCB. The SWPPP must be prepared and on-site when land disturbing activities commence.	30 days
Local					
7	Encroachment Permit	Must acquire permits from the City to utilize city-owned ROW, including to cross with utilities or to develop a driveway/access road.	City	Must acquire permits from the City before utilizing City ROW, should this be the case. Prior to any person performing work or encumbering the City's public right of way an Encroachment Permit shall be obtained from the Public Works Department.	Varies
8	Authority to Construct	This is a pre-construction permit that is issued before equipment is installed. An A/C may require the permit holder to meet certain conditions before operation can begin.	Bay Area Air Quality Management District (BAAQMD)	The Air District is responsible for the issuance of air quality permits for stationary equipment in the Bay Area and the management of the resulting air emissions (pollutants). An air quality permit is a document that gives the permit holder authorization to build equipment and/or to operate that equipment. Each project is evaluated before a business can build and operate their equipment to ensure that all air quality requirements are met.	Typically 30 to 90 days after submittal of a complete application.
9	Conditional Use Permit	A conditional use, which requires a Conditional Use Permit, is allowed in a zoning district, subject to certain criteria are met.	City	The M-2, General Industrial (Manufacturing) District doesn't explicitly permit solar development.	Varies
10	Building Permit(s)	Depending upon the structures being proposed for the project, a building permit may be required from the City.	City	The Building Division accepts building permit applications, reviews plans and inspects all building-related activities within the city limits to ensure compliance with adopted codes.	1 month



CREATE AMAZING.

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Appendix C
Burns & McDonnell Glint & Glare Report



October 21, 2019

Mr. Ron Yuen
Northern California Power Agency
651 Commerce Drive
Roseville, CA 95678

Re: Glare Study for Alameda Landfill

Dear Mr. Yuen:

Burns & McDonnell conducted a glare study for the 2.0 MWac Alameda Landfill (“Project”) site located in Alameda, CA and notes the following conclusions:

- The Air Traffic Control Tower (“ATCT”) did not experience glare from the Project.
- Runways 12, 15, 28L, 28R, 30, and 33 did not experience glare from the Project.
- Runway 10L experienced 793 minutes of low potential for afterimage (“Green glare”) over the period of a year from the Project. The glare occurred for the months of April thru August between the hours of 6:30 AM and 7:30 AM. The daily duration of the glare lasts less than 10 minutes a day and is visible from approximately 1.3 to 2 miles out on the landing approach.
- Runway 10R experienced 553 minutes of low potential for afterimage (“Green glare”) over the period of a year from the Project. The glare occurred for the months of April thru August between the hours of 6:30 AM and 7:30 AM. The daily duration of the glare lasts less than 10 minutes a day and is visible from approximately 1.3 to 2 miles out on the landing approach.
- This study indicates that glare will be visible from the Project at the runway approach paths for Runway 10L and 10R. However, the solar facility is in compliance with the 2013 U.S. FAA Interim Policy 78 FR 63276 as the potential for afterimage from the glare meets FAA guidelines.



Mr. Ron Yuen
Northern California Power Agency
October 21, 2019
Page 2

Sincerely,

A handwritten signature in blue ink, reading "Nestor S. Lopez". The signature is fluid and cursive, with a prominent loop at the end.

Nestor S. Lopez,
Analyst – Utility Consulting

Attachments:

- Attachment 1 – Alameda Landfill Glare Study Report
- Attachment 2 – Alameda Landfill Preliminary Site Layout

ATTACHMENT 1 – ALAMEDA LANDFILL GLARE STUDY REPORT

FORGESOLAR GLARE ANALYSIS

Project: **NCPA Alameda Glare Study**

Site configuration: **NCPA Alameda Glare Study**

Analysis conducted by Nestor Lopez (nslopez@burnsmcd.com) at 18:26 on 18 Oct, 2019.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	PASS	Receptor(s) marked as ATCT do not receive glare

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at <https://www.federalregister.gov/d/2013-24729>

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m²
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 32244.5906



PV Array(s)

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 31.0°
Orientation: 180.0°
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.747151	-122.228398	47.20	4.00	51.20
2	37.747140	-122.227502	34.26	4.00	38.27
3	37.746726	-122.227494	32.77	4.00	36.77
4	37.746586	-122.228403	37.01	4.00	41.01

Name: PV array 2

Axis tracking: Fixed (no rotation)

Tilt: 31.0°

Orientation: 180.0°

Rated power: -

Panel material: Smooth glass without AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.747452	-122.233922	41.68	4.00	45.68
2	37.747619	-122.233201	41.05	4.00	45.05
3	37.747354	-122.228606	50.82	4.00	54.82
4	37.746909	-122.228611	42.86	4.00	46.86
5	37.746412	-122.228810	40.62	4.00	44.62
6	37.746438	-122.230065	48.80	4.00	52.80
7	37.747214	-122.233934	40.34	4.00	44.34

Flight Path Receptor(s)

Name: Runway 10L

Description:

Threshold height: 50 ft

Direction: 112.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.730365	-122.221854	5.46	50.00	55.46
Two-mile	37.741196	-122.255789	5.06	603.85	608.91

Name: Runway 10R

Description:

Threshold height: 50 ft

Direction: 112.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.728608	-122.225587	8.11	50.00	58.12
Two-mile	37.739439	-122.259521	3.58	607.99	611.57

Name: Runway 12

Description:

Threshold height: 50 ft

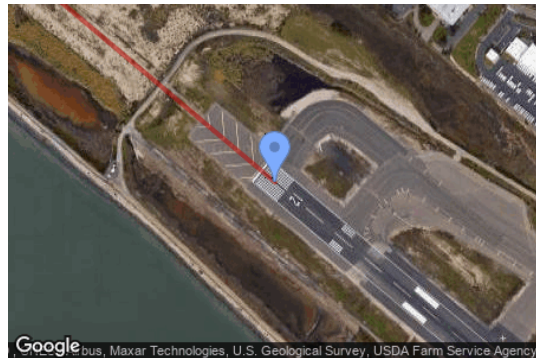
Direction: 130.0°

Glide slope: 2.75°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.719904	-122.241884	6.10	50.00	56.11
Two-mile	37.738488	-122.269917	-22.00	585.37	563.37

Name: Runway 15

Description:

Threshold height: 50 ft

Direction: 164.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.739926	-122.222695	1.13	50.00	51.13
Two-mile	37.767718	-122.232784	15.65	588.93	604.59

Name: Runway 28L

Description:

Threshold height: 50 ft

Direction: 292.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.722401	-122.206379	7.90	50.00	57.90
Two-mile	37.711570	-122.172448	34.86	576.50	611.36

Name: Runway 28R

Description:

Threshold height: 50 ft

Direction: 292.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.724931	-122.205076	5.81	50.00	55.81
Two-mile	37.714100	-122.171144	34.87	574.40	609.26

Name: Runway 30

Description:

Threshold height: 50 ft

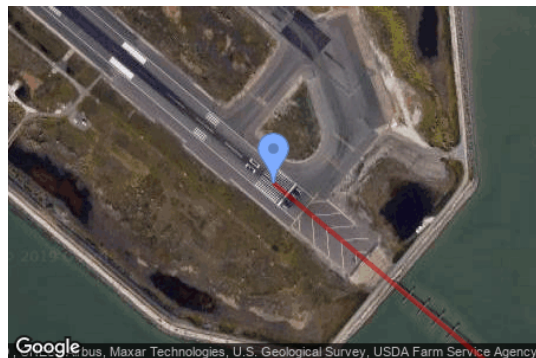
Direction: 310.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.701871	-122.214835	8.25	50.00	58.25
Two-mile	37.683286	-122.186809	-0.56	612.27	611.71

Name: Runway 33

Description:

Threshold height: 50 ft

Direction: 344.0°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.731524	-122.219747	3.75	50.00	53.75
Two-mile	37.703731	-122.209659	-0.03	607.24	607.21

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
1-ATCT	1	37.719591	-122.221903	7.28	236.01

Map image of 1-ATCT



GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt	Orient	"Green" Glare	"Yellow" Glare	Energy
	(°)	(°)	min	min	kWh
PV array 1	31.0	180.0	908	0	-
PV array 2	31.0	180.0	1,346	0	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
Runway 10L	1318	0
Runway 10R	936	0
Runway 12	0	0
Runway 15	0	0
Runway 28L	0	0
Runway 28R	0	0
Runway 30	0	0
Runway 33	0	0
1-ATCT	0	0

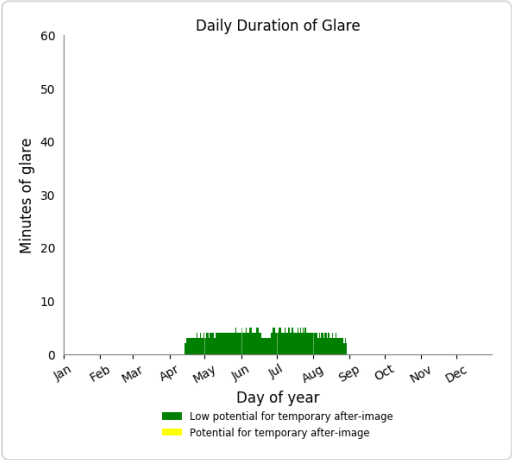
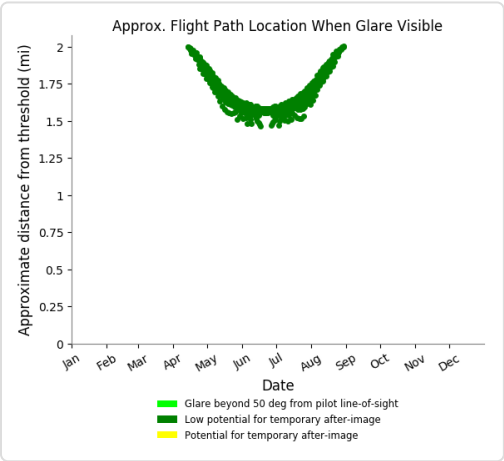
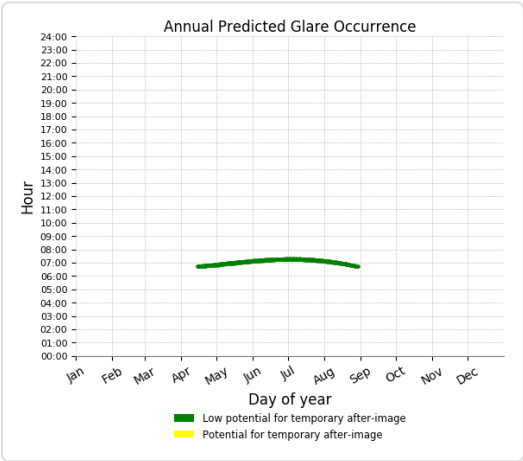
Results for: PV array 1

Receptor	Green Glare (min)	Yellow Glare (min)
Runway 10L	525	0
Runway 10R	383	0
Runway 12	0	0
Runway 15	0	0
Runway 28L	0	0
Runway 28R	0	0
Runway 30	0	0
Runway 33	0	0
1-ATCT	0	0

Flight Path: Runway 10L

0 minutes of yellow glare

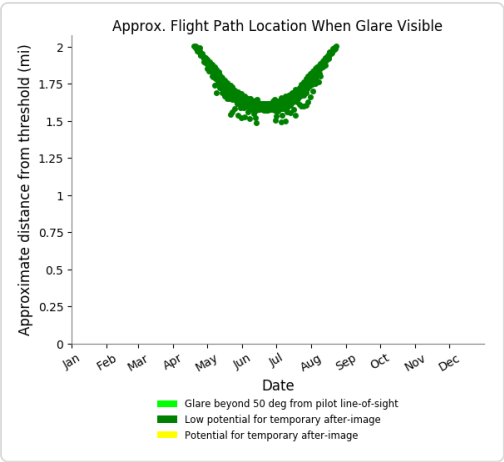
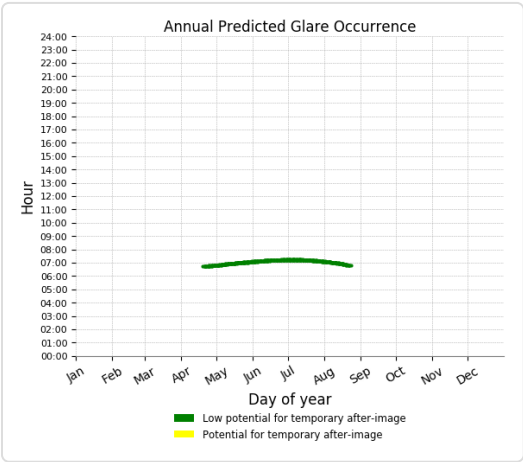
525 minutes of green glare

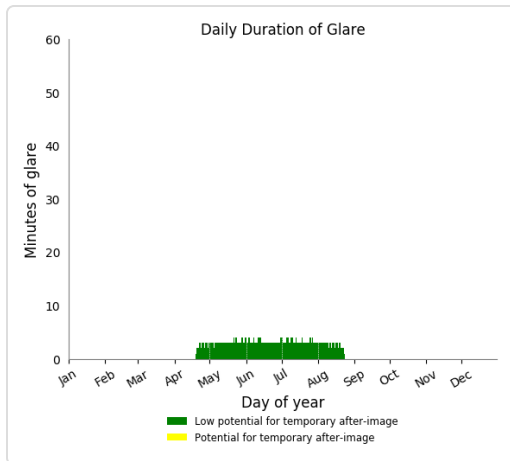


Flight Path: Runway 10R

0 minutes of yellow glare

383 minutes of green glare





Flight Path: Runway 12

0 minutes of yellow glare

0 minutes of green glare

Flight Path: Runway 15

0 minutes of yellow glare

0 minutes of green glare

Flight Path: Runway 28L

0 minutes of yellow glare

0 minutes of green glare

Flight Path: Runway 28R

0 minutes of yellow glare

0 minutes of green glare

Flight Path: Runway 30

0 minutes of yellow glare

0 minutes of green glare

Flight Path: Runway 33

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: 1-ATCT

0 minutes of yellow glare

0 minutes of green glare

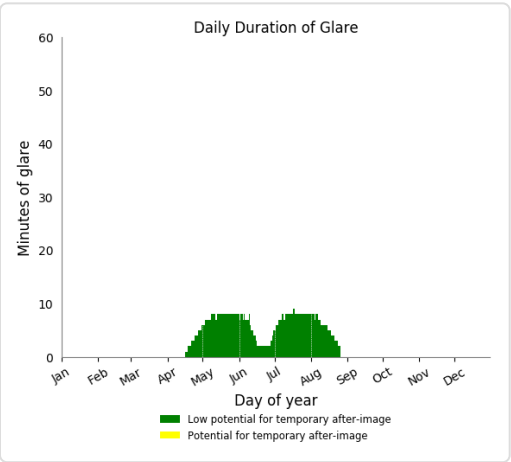
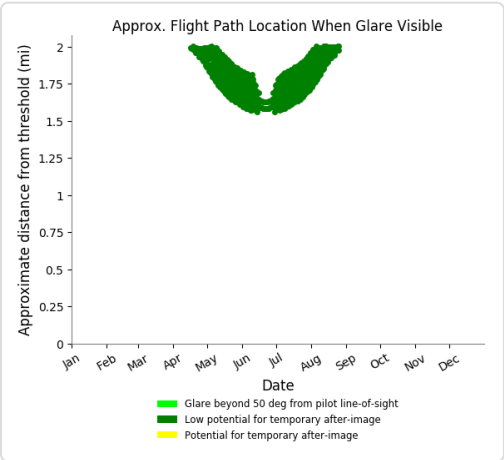
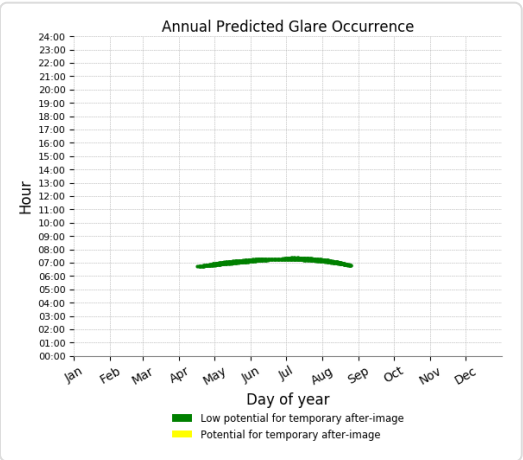
Results for: PV array 2

Receptor	Green Glare (min)	Yellow Glare (min)
Runway 10L	793	0
Runway 10R	553	0
Runway 12	0	0
Runway 15	0	0
Runway 28L	0	0
Runway 28R	0	0
Runway 30	0	0
Runway 33	0	0
1-ATCT	0	0

Flight Path: Runway 10L

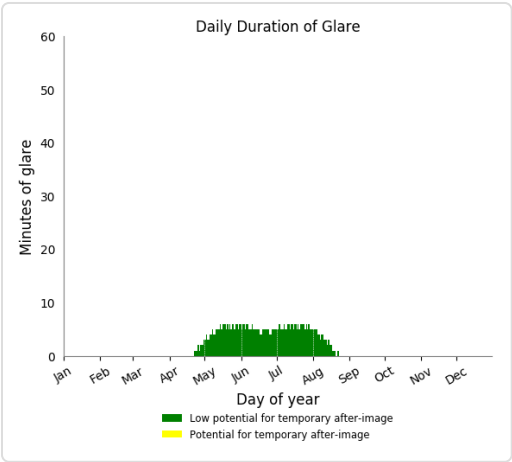
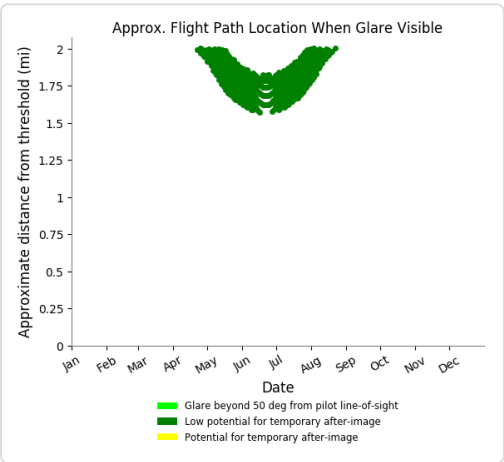
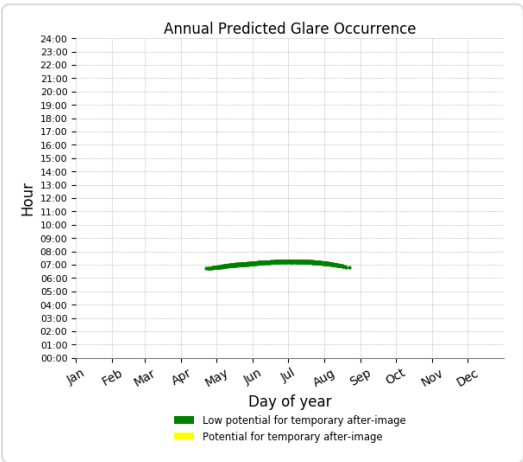
0 minutes of yellow glare

793 minutes of green glare



Flight Path: Runway 10R

0 minutes of yellow glare
553 minutes of green glare



Flight Path: Runway 12

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Runway 15

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Runway 28L

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Runway 28R

0 minutes of yellow glare

0 minutes of green glare

Flight Path: Runway 30

0 minutes of yellow glare

0 minutes of green glare

Flight Path: Runway 33

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: 1-ATCT

0 minutes of yellow glare

0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size.

Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

ATTACHMENT 2 – ALAMEDA LANDFILL PRELIMINARY SITE LAYOUT

Appendix D

Air Quality Modeling Results

NCPA Solar Project 1 Alameda Doolittle Landfill Site
Northern California Power Agency
Estimated Construction Emissions from Off-Road Heavy Duty Construction Equipment During Solar Equipment Installation

2019 Construction Year

Equipment	Emission Factor		Number	horsepower	load factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
	gr/hp-hr	lb/hp-hr						
Reactive Organic Gases (ROG)								
Compressor	0.538	0.00118502	1	106	0.48	8	0.48	
Crane	0.3491	0.00076894	2	399	0.43	8	2.11	
Sweeper	0.2347	0.00051696	1	500	0.68	2	0.35	
Tractors/Backhoes/Loaders	0.3678	0.00081013	2	108	0.55	4	0.38	
Utility Trucks	0.2635	0.00058040	1	479	0.57	4	0.63	
Water Trucks	0.2635	0.00058040	1	500	0.5	2	0.29	
Totals							4.25	

Equipment	Emission Factor		Number	horsepower	load factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
	gr/hp-hr	lb/hp-hr						
Carbon Monoxide (CO)								
Compressor	3.718	0.00818943	1	106	0.48	8	3.33	
Crane	2.96983	0.00654148	2	399	0.43	8	17.96	
Sweeper	1.23013	0.00270954	1	500	0.68	2	1.84	
Tractors/Backhoes/Loaders	3.63777	0.00801271	2	108	0.55	4	3.81	
Utility Trucks	1.48346	0.00326753	1	479	0.57	4	3.57	
Water Trucks	1.48346	0.00326753	1	500	0.5	2	1.63	
Totals							32.14	

Equipment	Emission Factor		Number	horsepower	load factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
	gr/hp-hr	lb/hp-hr						
Oxides of Nitrogen (NO _x)								
Compressor	3.706	0.00816300	1	106	0.48	8	3.32	2.82
Crane	4.29654	0.00946374	2	399	0.43	8	25.98	22.08
Sweeper	2.86598	0.00631273	1	500	0.68	2	4.29	3.65
Tractors/Backhoes/Loaders	3.69287	0.00813407	2	108	0.55	4	3.87	3.29
Utility Trucks	2.66851	0.00587778	1	479	0.57	4	6.42	5.46
Water Trucks	2.66851	0.00587778	1	500	0.5	2	2.94	2.50
Totals							46.82	39.80

Equipment	Emission Factor		Number	horsepower	load factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
	gr/hp-hr	lb/hp-hr						
Oxides of Sulfur (SO _x)								
Compressor	0.007	0.00001542	1	106	0.48	8	0.01	
Crane	0.0049	0.00001079	2	399	0.43	8	0.03	
Sweeper	0.0049	0.00001079	1	500	0.68	2	0.01	
Tractors/Backhoes/Loaders	0.0049	0.00001079	2	108	0.55	4	0.01	
Utility Trucks	0.0049	0.00001079	1	479	0.57	4	0.01	
Water Trucks	0.0049	0.00001079	1	500	0.5	2	0.01	
Totals							0.07	

Equipment	Emission Factor		Number	horsepower	load factor	hours/day	Emissions	Mitigated Emissions
	gr/hp-hr	lb/hp-hr					pounds per day	pounds per day
Respirable Particulate Matter (PM ₁₀)								
Compressor	0.287	0.00063216	1	106	0.48	8	0.26	0.04
Crane	0.173	0.00038106	2	399	0.43	8	1.05	0.16
Sweeper	0.0989	0.00021784	1	500	0.68	2	0.15	0.02
Tractors/Backhoes/Loaders	0.2465	0.00054295	2	108	0.55	4	0.26	0.04
Utility Trucks	0.097	0.00021366	1	479	0.57	4	0.23	0.04
Water Trucks	0.097	0.00021366	1	500	0.5	2	0.11	0.02
Totals							2.05	0.31

Equipment	Emission Factor		Number	horsepower	load factor	hours/day	Emissions	Mitigated Emissions
	gr/hp-hr	lb/hp-hr					pounds per day	pounds per day
Fine Particulate Matter (PM _{2.5})								
Compressor	0.287	0.00063216	1	106	0.48	8	0.26	0.04
Crane	0.1592	0.00035066	2	399	0.43	8	0.96	0.14
Sweeper	0.091	0.00020044	1	500	0.68	2	0.14	0.02
Tractors/Backhoes/Loaders	0.2268	0.00049956	2	108	0.55	4	0.24	0.04
Utility Trucks	0.0893	0.00019670	1	479	0.57	4	0.21	0.03
Water Trucks	0.0893	0.00019670	1	500	0.5	2	0.10	0.01
Totals							1.91	0.29

Equipment	Emission Factor		Number	horsepower	load factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
	gr/hp-hr	lb/hp-hr						
Carbon Dioxide (CO ₂)								
Compressor	568.299	1.25175991	1	106	0.48	8	510	
Crane	483.1422	1.06418987	2	399	0.43	8	2,921	
Sweeper	480.5735	1.05853194	1	500	0.68	2	720	
Tractors/Backhoes/Loaders	486.8508	1.07235859	2	108	0.55	4	510	
Utility Trucks	485.3832	1.06912599	1	479	0.57	4	1,168	
Water Trucks	485.3832	1.06912599	1	500	0.5	2	535	
Totals							6,362	

Equipment	Emission Factor		Number	horsepower	load factor	hours/day	Emissions pounds per day	Mitigated Emissions pounds per day
	gr/hp-hr	lb/hp-hr						
Methane (CH ₄)								
Compressor	0.101	0.00022247	1	106	0.48	8	0.09	
Crane	0.1529	0.00033678	2	399	0.43	8	0.92	
Sweeper	0.152	0.00033480	1	500	0.68	2	0.23	
Tractors/Backhoes/Loaders	0.1537	0.00033855	2	108	0.55	4	0.16	
Utility Trucks	0.1536	0.00033833	1	479	0.57	4	0.37	
Water Trucks	0.1536	0.00033833	1	500	0.5	2	0.17	
Totals							1.94	

Appendix E

Biological Resources Technical Report



July 12, 2019

K.S. DUNBAR & ASSOCIATES

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**SUBJECT: Habitat and Jurisdictional Assessment for the Northern California Power Agency
Solar Project 1 – Alameda Landfill Located in the City of Alameda, Alameda County,
California**

Introduction

This report contains the findings of ELMT Consulting's (ELMT) habitat and jurisdictional assessment for the Northern California Power Agency (NCPA) Solar Project 1 – Alameda Landfill project (project site or site) located in the City of Alameda, Alameda County, California. The habitat and jurisdictional assessment was conducted by biologist Travis J. McGill on July 9, 2019 to document baseline conditions and assess the potential for special-status¹ plant and wildlife species to occur within the project site that could pose a constraint to implementation of the proposed project. Special attention was given to the suitability of the project site to support special-status plant and wildlife species identified by the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), and other electronic databases as potentially occurring in the general vicinity of the project site.

Project Location

The project site is generally located west of Interstate 880, north of State Route 61, west of San Francisco Bay, and south of San Leandro Bay in the City of Alameda, Alameda County, California. The project site is depicted on the San Leandro quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series within an unsectioned portion of Township 2 South, Range 3 West. Specifically, the project site is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive (State Route 61), and on the east by Martin Luther King Regional Shoreline Park and Doolittle Pond on the northern extent of Bay Farm Island. Refer to Exhibits 1 thru 3 in Attachment A.

Project Description

The proposed project site is comprised of approximately 33.2 acres. The selected point of interconnection ("POI") is located on feeder 4214 adjacent to the project site at the southeast entry gate, near the adjacent public recreation area. Burns & McDonnell concluded that, based on the conductor ratings, a maximum power output of 2.7 MVA (Mega Volt Amp) can be injected at the POI.

¹ As used in this report, "special-status" refers to plant and wildlife species that are federally and State listed, proposed, or candidates; plant species that have been designated with a California Native Plant Society Rare Plant Rank; wildlife species that are designated by the CDFW as fully protected, species of special concern, or watch list species; and specially protected natural vegetation communities as designated by the CDFW.

The proposed array design for this project site is a fixed-tilt solar array system. A ballasted racking system installed at grade is recommended to prevent disturbance of the landfill gas system and/or landfill cap that is installed at a four-foot depth. The boundaries of the project site are steeply sloped, so it is recommended that panels only be installed on the flat inner portion of the site. The racking system must not negatively impact the underground gas lines. The photovoltaic (“PV”) site layout will need to avoid steep slopes and gas lines. For the conceptual project layout, 340-Watt (“W”) solar PV modules were considered. Although this module capacity was considered as part of the preliminary site selection, higher efficiency modules should be considered by the developer.

Methodology

A literature review and records search were conducted to determine which special-status biological resources have the potential to occur on or within the general vicinity of the project site. In addition to the literature review, a general habitat assessment or field investigation of the project site was conducted to document existing conditions and assess the potential for special-status biological resources to occur within the project site.

Literature Review

Prior to conducting the field investigation, a literature review and records search was conducted for special-status biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of special-status plant and wildlife species and their proximity to the project site were determined through a query of the CDFW’s QuickView Tool in the Biogeographic Information and Observation System (BIOS), CNDDDB Rarefind 5, the California Native Plant Society’s (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of special-status species published by CDFW, and the United States Fish and Wildlife Service (USFWS) species listings.

All available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the project site were reviewed to understand existing site conditions and note the extent of any disturbances that have occurred within the project site that would otherwise limit the distribution of special-status biological resources. Standard field guides and texts were reviewed for specific habitat requirements of special-status and non-special-status biological resources, as well as the following resources:

- Google Earth Pro historic aerial imagery (1993-2018);
- National Oceanic and Atmospheric Administration (NOAA) Essential Fish Habitat;
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Soil Survey²;
- USFWS Critical Habitat designations for Threatened and Endangered Species; and
- USFWS Endangered Species Profiles.

2 A soil series is defined as a group of soils with similar profiles developed from similar parent materials under comparable climatic and vegetation conditions. These profiles include major horizons with similar thickness, arrangement, and other important characteristics, which may promote favorable conditions for certain biological resources.

The literature review provided a baseline from which to inventory the biological resources potentially occurring within the project site. The CNDDB database was used, in conjunction with ArcGIS software, to locate the nearest recorded occurrences of special-status species and determine the distance from the project site.

Habitat Assessment/Field Investigation

Following the literature review, biologist Travis J. McGill inventoried and evaluated the condition of the habitat within the project site on July 9, 2019. Plant communities and land cover types identified on aerial photographs during the literature review were verified by walking meandering transects throughout the project site. In addition, aerial photography was reviewed prior to the site investigation to locate potential natural corridors and linkages that may support the movement of wildlife through the area. These areas identified on aerial photography were then walked during the field investigation.

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Plant species observed during the field investigation were identified by visual characteristics and morphology in the field. Unusual and less familiar plant species were photographed during the field investigation and identified in the laboratory using taxonomical guides. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities and land cover types, and presence of potential jurisdictional drainage and/or wetland features were noted.

Soil Series Assessment

On-site and adjoining soils were researched prior to the field investigation using the USDA NRCS Soil Survey for Alameda County, California. In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes that the project site have undergone.

Plant Communities

Plant communities were mapped using 7.5-minute USGS topographic base maps and aerial photography. The plant communities were classified in accordance with Sawyer, Keeler-Wolf and Evens (2009), delineated on an aerial photograph, and then digitized into GIS Arcview. The Arcview application was used to compute the area of each plant community and/or land cover type in acres.

Plants

Common plant species observed during the field investigation were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less familiar plants were photographed in the field and identified in the laboratory using taxonomic guides. Taxonomic nomenclature used in this study follows the 2012 Jepson Manual (Hickman 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only).

Wildlife

Wildlife species detected during the field investigation by sight, calls, tracks, scat, or other sign were recorded during surveys in a field notebook. Field guides used to assist with identification of wildlife species during the survey included The Sibley Field Guide to the Birds of Western North America (Sibley 2003), A Field Guide to Western Reptiles and Amphibians (Stebbins 2003), and A Field Guide to Mammals of North America (Reid 2006). Although common names of wildlife species are well standardized, scientific names are provided immediately following common names in this report (first reference only).

Jurisdictional Drainages and Wetlands

Aerial photography was reviewed prior to conducting a field investigation in order to locate and inspect any potential natural drainage features, ponded areas, or water bodies that may fall under the jurisdiction of the United States Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), or CDFW. In general, surface drainage features indicated as blue-line streams on USGS maps that are observed or expected to exhibit evidence of flow are considered potential riparian/riverine habitat and are also subject to state and federal regulatory jurisdiction. In addition, ELMT reviewed jurisdictional waters information through examining historical aerial photographs to gain an understanding of the impact of land-use on natural drainage patterns in the area. The USFWS National Wetland Inventory (NWI) and Environmental Protection Agency (EPA) Water Program “My Waters” data layers were also reviewed to determine whether any hydrologic features and wetland areas have been documented on or within the vicinity of the project site.

Existing Site Conditions

The project is located on the existing Alameda Doolittle Landfill that began operation in 1953 and was closed in 1985. The project site is bordered by San Leandro Bay to the north, Martin Luther King Regional Shoreline Park and Doolittle Pond to the east, the Chuck Corica Municipal Golf Complex to the south, and residential developments and the San Francisco Bay to the west. The Bill Osborne Model Airplane Field is located on the southeast corner of the project site, and is not part of the proposed project footprint. There is an extensive network of heavy-duty plastic pipes and wells, which collect gas and deliver it to a flare structure, where it is incinerated. The flare structure, near the southeast corner of the site, is operated a minimum of eight hours a day, seven days a week.

The project site has a low grade at the crown and higher grades at the perimeter of the parcel. Steep slopes are present at both the north and south edges of the property. The middle portion (crown) of the project site is located at an approximate elevation of 55 feet above mean sea level and the perimeter of the project site is located at an approximate elevation of 10 feet above mean sea level. Based on the NRCS USDA Web Soil Survey, the project site is underlain by the following soil units: water and xeropsamments, fill. Refer to Exhibit 4, *Soils*, in Attachment A. Soils on-site have been mechanically disturbed and heavily compacted from use as a landfill.

Vegetation

Since the project was previously utilized as a landfill, no native plant communities or natural communities of special concern were observed on the project site. The project site primarily consists of vacant, undeveloped land that has been subject to a variety of anthropogenic disturbances from existing landfill

activities and site maintenance activities (e.g., weed abatement, gas monitoring). These disturbances have eliminated the natural plant communities that once occurred within the boundaries of the project site. Refer to Attachment B, *Site Photographs*, for representative site photographs. No native plant communities will be impacted from implementation of the proposed project.

The project site consists of land cover types that would be classified as disturbed. Refer to Exhibit 5, *Vegetation* in Attachment A. The project site primarily supports non-native and early successional/ruderal plant species that have established on the site after the cap of dirt was installed on the top of the landfill after landfill operations stopped. The project site is dominated by wild oat (*Avena fatua*). Other plant species observed onsite include fennel (*Foeniculum vulgare*), filaree (*Erodium sp.*), bind weed (*Convolvulus arvensis*), wild radish (*Raphanus raphanistrum*), short-podded mustard (*Hirschfeldia incana*), cheeseweed (*Malva parviflora*), prickly lettuce (*Lactuca serriola*), curly dock (*Rumex crispus*), cheeseweed (*Malva parviflora*), smilo grass (*Piptatherum miliaceum*), cocklebur (*Xanthium strumarium*), bur clover (*Medicago polymorpha*), and Chilean trefoil (*Acemison wrangelianus*).

Wildlife

Plant communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species that were observed or are expected to occur within the project site. The discussion is to be used a general reference and is limited by the season, time of day, and weather conditions in which the field investigation was conducted. Wildlife detections were based on calls, songs, scat, tracks, burrows, and direct observation. The project site provides limited habitat for wildlife species except those adapted to a high degree of anthropogenic disturbances and development.

Fish

No hydrogeomorphic features (e.g., perennial creeks, ponds, lakes, reservoirs) that would provide suitable habitat for fish were observed on the project site. No fish are expected to occur onsite and are presumed absent from the project site.

It should be noted that San Leandro Bay north of the project site provides suitable habitat for fish species. However, no direct or indirect impacts to San Leandro Bay will occur from project implementation.

Amphibians

No amphibians or hydrogeomorphic features (e.g., perennial creeks, ponds, lakes, reservoirs) that would provide suitable habitat for amphibian species were observed on the project site. No amphibians are expected to occur and are presumed absent from the project site.

Reptiles

During the field investigation no reptilian species were observed on the project site. Common reptilian species adapted to a high degree of anthropogenic disturbances that have the potential to occur on the project site include western side-blotched lizard (*Uta stansburiana elegans*), alligator lizard (*Elgaria coerulea coerulea*), Pacific gophersnake (*Pituophis catenifer catenifer*), and northern Pacific rattlesnake (*Crotalus oreganus oreganus*). Due to the high level of anthropogenic disturbances onsite no special-status reptilian

species are expected to occur within project site.

Birds

The project site provides foraging and cover habitat for bird species adapted to a high degree of human disturbance. Bird species detected during the field investigation included northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), purple finch (*Haemorhous purpureus*), Canada goose (*Branta canadensis*), northern rough-winged swallow (*Stelgidopteryx serripennis*), barn swallow (*Hirundo rustica*), American robin (*Turdus migratorius*), osprey (*Pandion haliaetus*), Forster's tern (*Sterna forsteri*), and western gull (*Larus occidentalis*). Due to routine disturbance associated with the existing landfill, the project site does not provide suitable habitat for special-status bird species known to occur in the area.

Mammals

During the field investigation California ground squirrel (*Otospermophilus beecheyi*) were the only mammalian species observed on the project site. Common mammalian species adapted to a high degree of anthropogenic disturbances that have the potential to occur within the project site include Botta's pocket gopher (*Thomomys bottae*), opossum (*Didelphis virginiana*), and raccoon (*Procyon lotor*).

Nesting Birds

No active nests or birds displaying nesting behavior were observed during the field investigation. The project site and surrounding area provides foraging and nesting habitat for year-round and seasonal avian residents, as well as migrating songbirds that could occur in the area. The project site has the potential to provide suitable nesting opportunities for birds that nest on the open ground and those acclimated to routine disturbances. Additionally, the trees that border the project site provide suitable nesting opportunities. A pre-construction nesting bird clearance survey should be conducted within three (3) days prior to ground disturbance to ensure no nesting birds will be impacted from site development.

Migratory Corridors and Linkages

Habitat linkages provide connections between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet still inadequate for others. Wildlife corridors are features that allow for the dispersal, seasonal migration, breeding, and foraging of a variety of wildlife species. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

San Leandro Bay north of the project site and San Francisco Bay west of the project site support natural open water habitats that allow wildlife to move through the region in search of food, shelter, or nesting habitat. The project site will be confined to a heavily disturbed area that is bordered by development the west and south, and will not extend north or east into open waters. Implementation of the proposed project is not expected to result in temporary and/or permanent impacts to potential wildlife movement opportunities within San Leandro Bay or San Francisco Bay during construction and operation activities.

Jurisdictional Areas

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredge or fill materials into “waters of the United States” pursuant to Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFW regulates alterations to streambed and bank under Fish and Wildlife Code Sections 1600 et seq., and the Regional Board regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

San Leandro Bay (a body of water in the San Francisco Bay) borders the northern boundary of the project site, and Doolittle Pond borders the eastern boundary of the project site. These water features are located outside of the proposed project footprint and no direct or indirect impacts will occur to them.

The project site does not support any discernible drainage courses, inundated areas, wetland features, or hydric soils that would be considered jurisdictional by the Corps, Regional Board, or CDFW. Therefore, project activities will not result in impacts to Corps, Regional Board, or CDFW jurisdictional areas and regulatory approvals will not be required.

According to National Wetlands Inventory (NWI) data, riverine resources have been mapped on the project site. However, the mapped riverine resources directly align with the gas collection piping that currently exists above grade. During the field investigation, no evidence of riverine resources were observed onsite. Additionally, estuarine and marine wetland habitat, and estuarine and marine deepwater habitat have been mapped north of the project site in association with San Leandro Bay, and freshwater pond resources have been mapped east (Doolittle Pond) and south (golf course ponds) of the project site. None of these resources will be directly or indirectly impacted from project implementation. Additionally, the Federal Emergency Management Agency (FEMA) data indicates that the project site is located in an area above the 500-year flood level.

Special-Status Biological Resources

The CNDDDB Rarefind 5 and the CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California were queried for reported locations of special-status plant and wildlife species as well as special-status natural plant communities in the San Leandro, Hunters Point, Oakland East, and Oakland West USGS 7.5-minute quadrangles. The habitat assessment evaluated the conditions of the habitat(s) within the boundaries of the project site to determine if the existing plant communities, at the time of the survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species.

The literature search identified forty-five (45) special-status plant species, seventy-one (71) special-status wildlife species, and three (3) special-status plant communities as having potential to occur within the San Leandro, Hunters Point, Oakland East, and Oakland West USGS 7.5-minute quadrangles. Special-status plant and wildlife species were evaluated for their potential to occur within the project site based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity of the project site are presented in Attachment C: *Potentially Occurring Special-Status Biological Resources*.

Special-Status Plants

According to the CNDDDB and CNPS, forty-five (45) special-status plant species have been recorded in the San Leandro, Hunters Point, Oakland East, and Oakland West (refer to Attachment C). No special-status plant species were observed onsite during the habitat assessment. The project was previously utilized as a landfill, and as a result, the project site has been subject to various anthropogenic disturbances. These disturbances have eliminated the natural plant communities that once occurred on-site which has removed suitable habitat for special-status plant species known to occur in the general vicinity of the project site. Based on habitat requirements for specific special-status plant species and the availability and quality of habitats needed by each species, it was determined that the project site does not provide suitable habitat for any of the special-status plant species known to occur in the area and are presumed to be absent from the project site. No focused surveys are recommended.

Special-Status Wildlife

According to the CNDDDB, seventy-one (71) special-status wildlife species have been reported in the San Leandro, Hunters Point, Oakland East, and Oakland West quadrangles (refer to Attachment C). No special-status wildlife species were observed onsite during the habitat assessment. The project was previously utilized as a landfill, and as a result, the project site has been subject to various anthropogenic disturbances. These disturbances have eliminated the natural plant communities that once occurred onsite which have greatly reduced the ability of the project site to provide suitable habitat for special-status wildlife species. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the proposed project site has a high potential to support great egret (*Ardea alba*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), and California gull (*Larus californicus*); a moderate potential to support Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*Accipiter striatus*); and a low potential to support northern harrier (*Circus hudsonius*), merlin (*Falco columbarius*), long-billed curlew (*Numenius americanus*), California brown pelican (*Pelecanus occidentalis californicus*), rufous hummingbird (*Selasphorus rufus*), California least tern (*Sternula antillarum browni*), and elegant tern (*Thalasseus elegans*). All remaining special-status wildlife species are presumed to be absent since the project site has been heavily disturbed from onsite disturbances, and does not support suitable habitat. No focused surveys are recommended. Least tern is the only federally and State listed species with the potential to occur onsite. Least tern may fly over the site when it is foraging in the bay north of the project site, but the project site does not provide suitable nesting opportunities for least tern.

In order to ensure impacts to the aforementioned species do not occur from implementation of the proposed project, a pre-construction nesting bird clearance survey should be conducted prior to ground disturbance. With implementation of mitigation through the pre-construction clearance survey, no impacts to the aforementioned species are expected, and impacts would be considered less than significant.

Since burrowing owl have been observed near the site at the Martin Luther King Jr. Shoreline Park by the Golden Gate Audubon, the potential occurrence of burrowing owl is described in further detail below.

Burrowing owls

The burrowing owl is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments.

Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground (Haug and Didiuk 1993; Dechant et al. 1999). Burrowing owls are dependent upon the presence of fossorial mammals, such as ground squirrels (*Otospermophilus beecheyi*), whose burrows are used for roosting and nesting (Haug and Didiuk 1993). The presence or absence of colonial mammal burrows is often a major factor that limits the presence or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Burrowing mammals may burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. Large, hard objects at burrow entrances stabilize the entrance from collapse and may inhibit excavation by predators.

Burrowing owls have crepuscular (dawn and dusk) hunting habits but are often observed perched in or near the burrow entrance during the day. They prey upon invertebrates and small vertebrates (Thomsen 1971) through the low vegetation which allows for foraging visibility. The nesting season occurs between February 1 and August 31. Burrowing owl in California may migrate southerly, but often remain in the breeding area during the non-breeding period.

The burrowing owl was once abundant and widely distributed within coastal southern California, but it has declined precipitously in counties such as Los Angeles, Orange, San Diego, Riverside, and San Bernardino. A petition was filed to list the California population of the western burrowing owl as an Endangered or Threatened species (Center for Biological Diversity 2003); however, the California Department of Fish and Wildlife (CDFW) declined to list the burrowing owl as either endangered or threatened. The CDFW currently lists the burrowing owl as a California Species of Special Concern.

Burrowing owls have been observed near the project site at the Martin Luther King Jr. Shoreline Park. The areas on the project site that are routinely maintained (i.e., location of the plastic gas pipes) provide line-of-site opportunities favored by burrowing owls; however, onsite disturbances and surrounding land uses have likely discouraged the use of the project site by burrowing owls. The majority of the project site lacks suitable burrows (>4 inches in diameter) capable of providing roosting and nesting opportunities. However, several ground squirrel burrows were observed along the perimeter of the of the project site, but no sign of recent or historic use by burrowing owls was observed. Additionally, weedy plant species on the project site ranged in height from 24 to 48 inches in height in areas that are not routinely maintained, which discourages burrowing owls, as they prefer line-of-site.

In addition, ornamental trees that border the southern boundary of the project site further decrease the likelihood that burrowing owls would occur on-site as these features provide perching opportunities for larger raptor species (i.e., red-tailed hawk) that prey on burrowing owls. Despite a systematic search of the project site, no burrowing owls or sign (pellets, feathers, castings, or white wash) were observed on or within 500 feet, where applicable, of the project site during the field investigation. Focused burrowing owl surveys are not recommended.

Special-Status Plant Communities

According to the CNDDDB, one (1) special-status plant community has been reported in the San Leandro, Hunters Point, Oakland East, and Oakland West USGS 7.5-minute quadrangles: Northern Coastal Salt

Marsh, Northern Maritime Chaparral, and Serpentine Bunchgrass. Based on the results of the field investigation, no special-status plant communities were observed onsite.

Critical Habitat

Under the federal Endangered Species Act, “Critical Habitat” is designated at the time of listing of a species or within one year of listing. Critical Habitat refers to specific areas within the geographical range of a species at the time it is listed that include the physical or biological features that are essential to the survival and eventual recovery of that species. Maintenance of these physical and biological features requires special management considerations or protection, regardless of whether individuals or the species are present or not. All federal agencies are required to consult with the United States Fish and Wildlife Service (USFWS) regarding activities they authorize, fund, or permit which may affect a federally listed species or its designated Critical Habitat. The purpose of the consultation is to ensure that projects will not jeopardize the continued existence of the listed species or adversely modify or destroy its designated Critical Habitat. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing is on federal lands, uses federal funds, or requires federal authorization or permits (e.g., funding from the Federal Highways Administration or a CWA Permit from the Corps). If there is a federal nexus, then the federal agency that is responsible for providing the funding or permit would consult with the USFWS.

The project site is not located with federally designated Critical Habitat. Refer to Exhibit 6, *Critical Habitat & Essential Fish Habitat* in Attachment A. The nearest designated Critical Habitat is located west of the project site within San Francisco Bay for steelhead (*Oncorhynchus mykiss*), and approximately 6 miles northeast for Alameda whipsnake (*Masticophis lateralis euryxanthus*). Therefore, the loss or adverse modification of Critical Habitat from project implementation will not occur and consultation with the USFWS for impacts to Critical Habitat will not be required for implementation of the proposed project.

Essential Fish Habitat

Essential Fish Habitat (EFH) is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The Magnuson-Stevens Act requires the National Marine Fisheries Service (NMFS) to work with other Federal agencies to conserve and enhance EFH. As a result, whenever Federal agencies authorize, fund, or carry out actions that may adversely impact EFH, they must consult with NMFS regarding the impact of their activities on EFH. NMFS must provide the consulting Federal agency with EFH conservation recommendations for any action that would adversely affect EFH. Within 30 days of receiving these recommendations, the consulting action agencies must provide a detailed response in writing to NMFS that includes measures proposed to avoid, minimize, or offset the impact of proposed activities on EFH.

The project site is not located within EFH (refer to Exhibit 6, *Critical Habitat & Essential Fish Habitat* in Attachment A). EFH is designated immediately north of the project site, outside of the proposed limits of disturbance, within San Leandro Bay. Therefore, no impacts to EFH will occur from project implementation, and coordination with the NMFS will not be required.

Recommendations

Migratory Bird Treaty Act and Fish and Game Code

Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.5, 3511, and 3513 prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, a nesting bird clearance survey should be conducted prior to any ground disturbance or vegetation removal activities that may disrupt the birds during the nesting season.

If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds should be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a no-disturbance buffer. The size of the no-disturbance buffer will be determined by the wildlife biologist and will depend on the level of noise and/or surrounding anthropogenic disturbances, line of sight between the nest and the construction activity, type and duration of construction activity, ambient noise, species habituation, and topographical barriers. These factors will be evaluated on a case-by-case basis when developing buffer distances. Limits of construction to avoid an active nest will be established in the field with flagging, fencing, or other appropriate barriers; and construction personnel will be instructed on the sensitivity of nest areas. A biological monitor should be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.

Conclusion

Based on the proposed project footprint and existing site conditions discussed in this report, none of the special-status plant or wildlife species known to occur in the general vicinity of the project site are expected to be directly or indirectly impacted from implementation of the proposed project. With completion of the recommendations provided above, no impacts to year-round, seasonal, or special-status avian residents will occur from implementation of the proposed project. Therefore, it was determined that implementation of the project will have “no effect” on federally or State listed species known to occur in the general vicinity of the project site. Additionally, the development of the project will not impact designated Critical Habitat, EFH, or regional wildlife movement corridors/linkages.

Please do not hesitate to contact Tom McGill at (951) 285-6014 or tmcgill@elmtconsulting.com or Travis McGill at (909) 816-1646 or travismcgill@elmtconsulting.com should you have any questions this report.

Sincerely,



Thomas J. McGill, Ph.D.
Managing Director



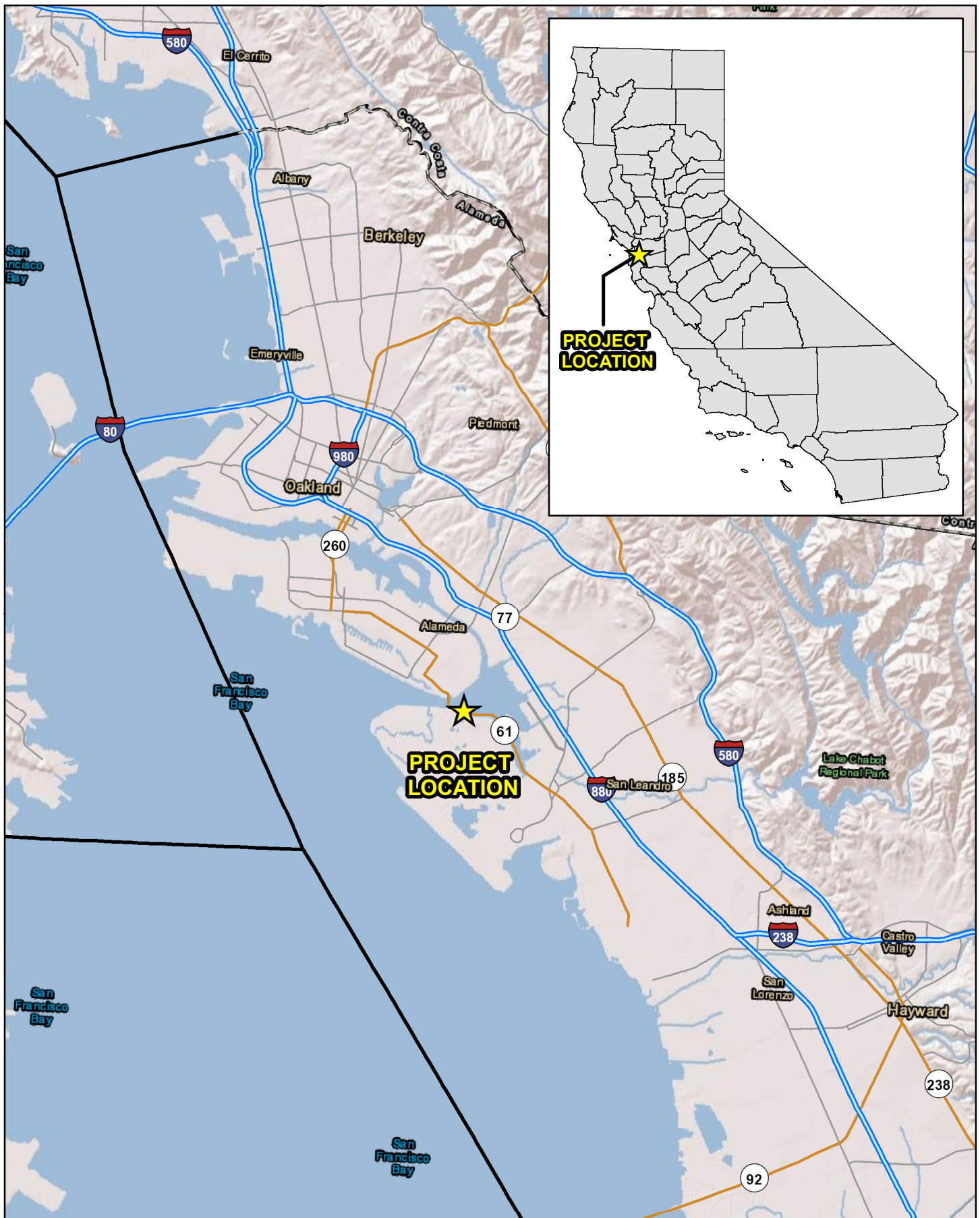
Travis J. McGill
Director

Attachments:

- A. *Project Exhibits*
- B. *Site Photographs*
- C. *Potentially Occurring Special-Status Biological Resources*
- D. *Regulations*

Attachment A

Project Exhibits




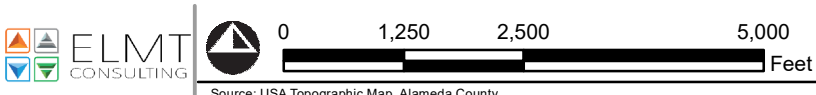
NCPA SOLAR PROJECT 1 - ALAMEDA LANDFILL
HABITAT AND JURISDICTIONAL ASSESSMENT

Regional Vicinity



Legend

 Project Site

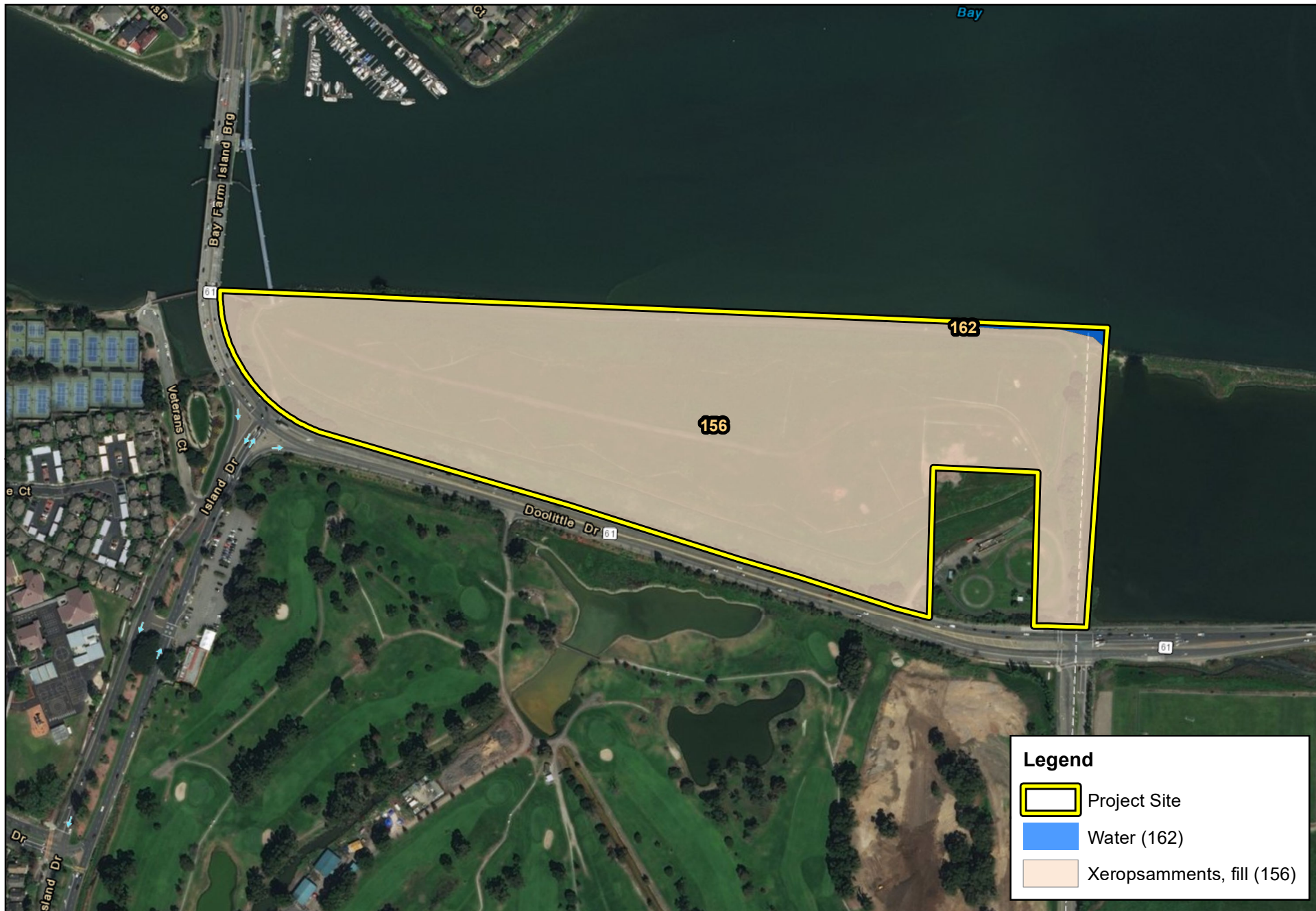


NCPA SOLAR PROJECT 1 - ALAMEDA LANDFILL
HABITAT AND JURISDICTIONAL ASSESSMENT

Site Vicinity



NCPA SOLAR PROJECT 1 - ALAMEDA LANDFILL
HABITAT AND JURISDICTIONAL ASSESSMENT
Project Site

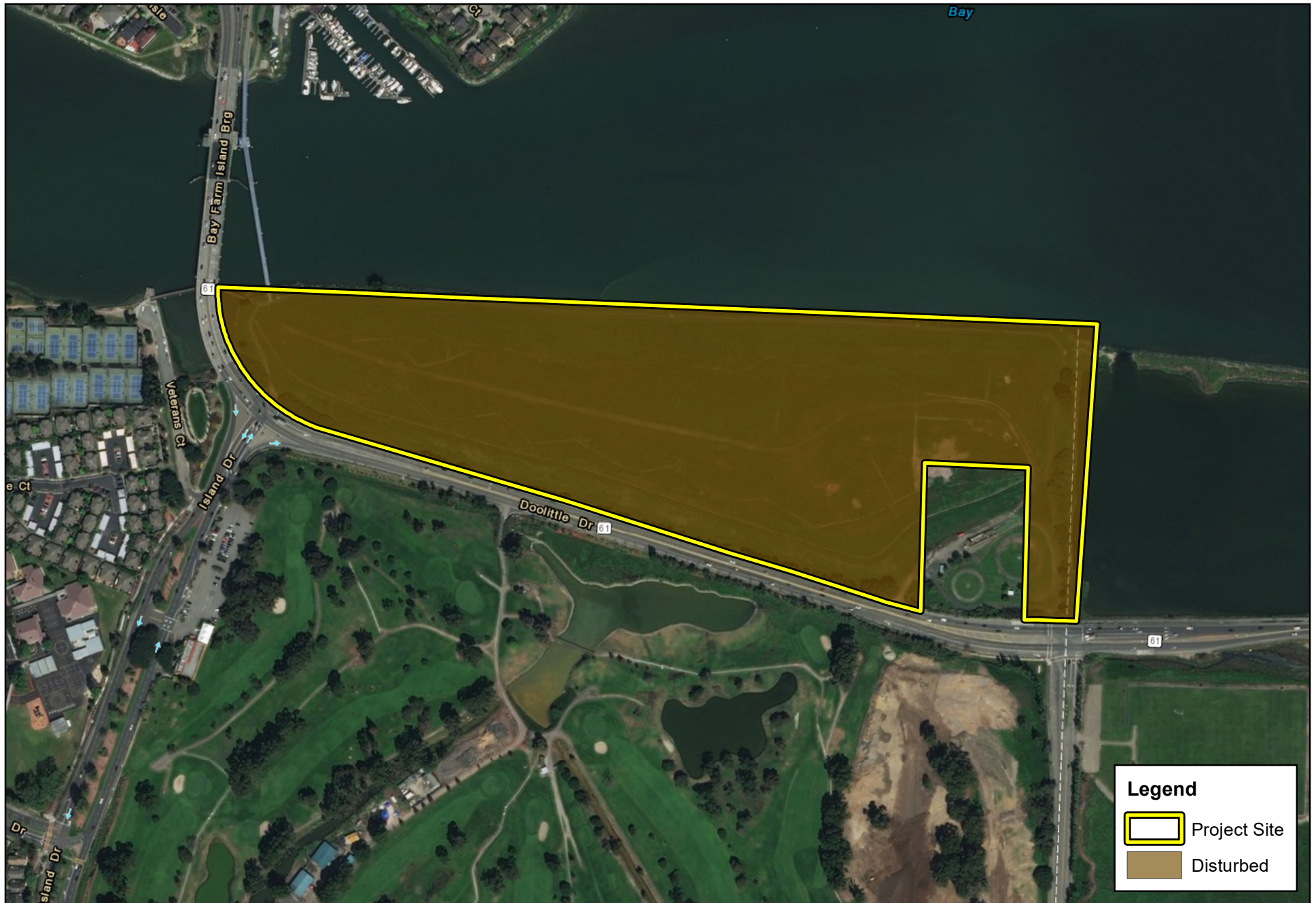


NCPA SOLAR PROJECT 1 - ALAMEDA LANDFILL
HABITAT AND JURISDICTIONAL ASSESSMENT

Soils

Exhibit 4

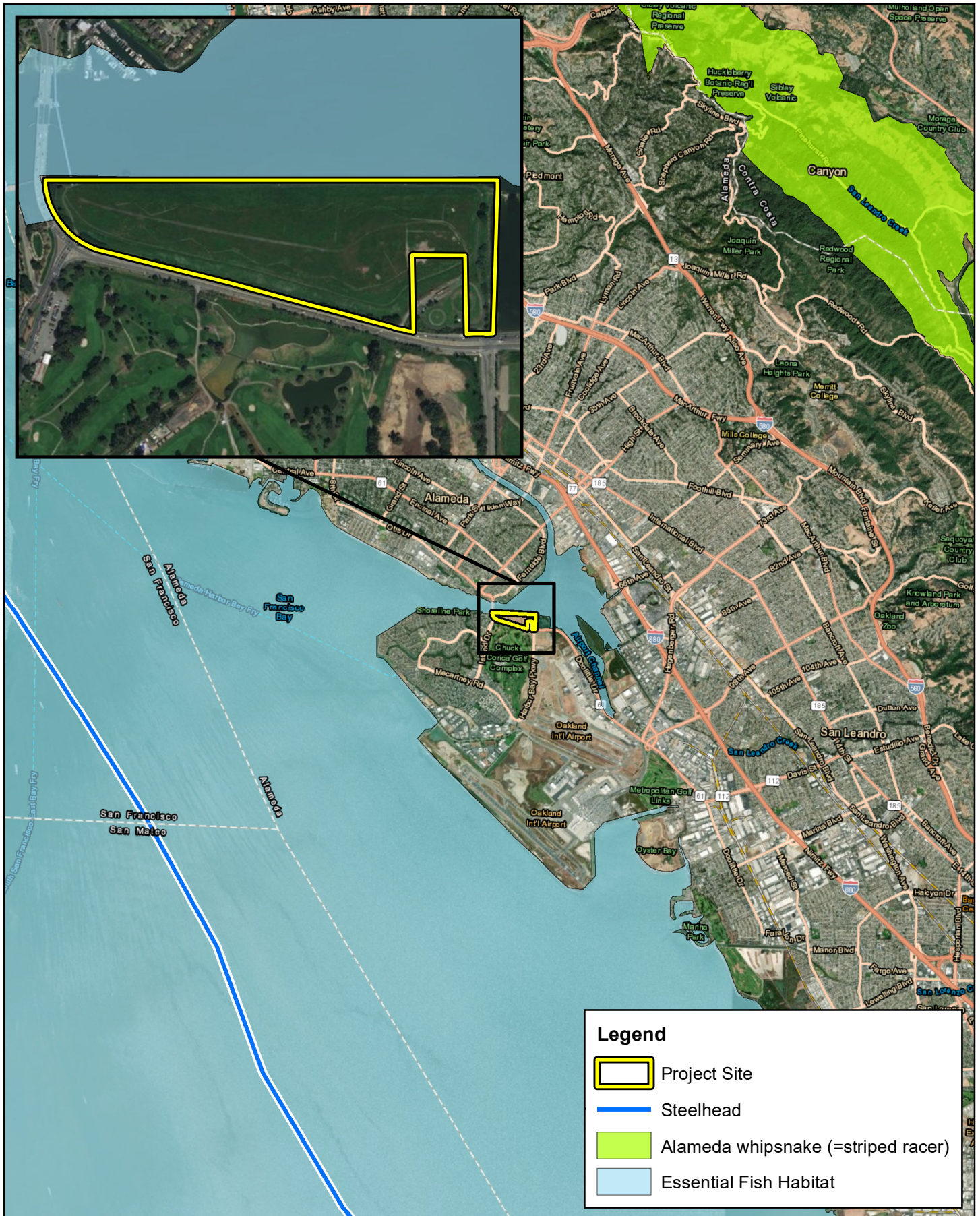




NCPA SOLAR PROJECT 1 - ALAMEDA LANDFILL
HABITAT AND JURISDICTIONAL ASSESSMENT

Vegetation





Attachment B

Site Photographs



Photograph 1: From the southeast corner of the project site looking north along the eastern boundary.



Photograph 2: From the eastern boundary of the project site looking west.



Photograph 3: From the northeast corner of the project site looking west along the northern boundary.



Photograph 4: Looking at the northwest corner of the project site, south of San Leandro Bay.



Photograph 5: View of the northwest corner of the project site.



Photograph 6: From the southwest corner of the site looking east along the southern boundary.



Photograph 7: Looking east at the southern boundary of the site.



Photograph 8: View of the southeast corner of the project site. The model airplane field is in the background of the right side of the photo.



Photograph 9: From the middle of the project site looking west.



Photograph 10: From the middle of the project site looking east.



Photograph 11: View of pipeline on the top of the surface.



Photograph 12: Pipelines traversing the project site.

Attachment C

Potentially Occurring Special-Status Biological Resources

Scientific Name	Common Name	Federal Status	State Status	State Listing	CNPS Rare Plant Rank	Potential to Occur
Special-Status Wildlife Species						
<i>Accipiter cooperii</i>	Cooper's hawk	None	None	WL	-	Moderate
<i>Accipiter striatus</i>	sharp-shinned hawk	None	None	WL	-	Moderate
<i>Acipenser transmontanus</i>	white sturgeon	None	None	SSC	-	Presumed Absent
<i>Ambystoma californiense</i>	California tiger salamander	Threatened	Threatened	WL	-	Presumed Absent
<i>Ammodramus savannarum</i>	grasshopper sparrow	None	None	SSC	-	Presumed Absent
<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-	Presumed Absent
<i>Aquila chrysaetos</i>	golden eagle	None	None	FP ; WL	-	Presumed Absent
<i>Ardea alba</i>	great egret	None	None	-	-	High
<i>Ardea herodias</i>	great blue heron	None	None	-	-	High
<i>Asio flammeus</i>	short-eared owl	None	None	SSC	-	Presumed Absent
<i>Athene cunicularia</i>	burrowing owl	None	None	SSC	-	Presumed Absent
<i>Baeolophus inornatus</i>	oak titmouse	None	None	-	-	Presumed Absent
<i>Bombus caliginosus</i>	obscure bumble bee	None	None	-	-	Presumed Absent
<i>Bombus occidentalis</i>	western bumble bee	None	None	-	-	Presumed Absent
<i>Botaurus lentiginosus</i>	American bittern	None	None	-	-	Presumed Absent
<i>Buteo regalis</i>	ferruginous hawk	None	None	WL	-	Presumed Absent
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	Threatened	None	SSC	-	Presumed Absent
<i>Cicindela hirticollis gravida</i>	sandy beach tiger beetle	None	None	-	-	Presumed Absent
<i>Circus hudsonius</i>	northern harrier	None	None	SSC	-	Low
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-	Presumed Absent
<i>Coturnicops noveboracensis</i>	yellow rail	None	None	SSC	-	Presumed Absent
<i>Danaus plexippus pop. 1</i>	monarch - California overwintering population	None	None	-	-	Presumed Absent
<i>Dipodomys heermanni berkeleyensis</i>	Berkeley kangaroo rat	None	None	-	-	Presumed Absent
<i>Egretta thula</i>	snowy egret	None	None	-	-	High
<i>Elanus leucurus</i>	white-tailed kite	None	None	FP	-	Presumed Absent
<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-	Presumed Absent
<i>Eucyclogobius newberryi</i>	tidewater goby	Endangered	None	SSC	-	Presumed Absent
<i>Euphydryas editha bayensis</i>	Bay checkerspot butterfly	Threatened	None	-	-	Presumed Absent
<i>Falco columbarius</i>	merlin	None	None	WL	-	Low
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	FP	-	Presumed Absent
<i>Geothlypis trichas sinuosa</i>	saltmarsh common yellowthroat	None	None	SSC	-	Presumed Absent
<i>Gonidea angulata</i>	western ridged mussel	None	None	-	-	Presumed Absent
<i>Helminthoglypta nickliniana bridgesi</i>	Bridges' coast range shoulderband	None	None	-	-	Presumed Absent
<i>Hypomesus transpacificus</i>	Delta smelt	Threatened	Endangered	-	-	Presumed Absent
<i>Lanius ludovicianus</i>	loggerhead shrike	None	None	SSC	-	Presumed Absent
<i>Larus californicus</i>	California gull	None	None	WL	-	High
<i>Lasionycteris noctivagans</i>	silver-haired bat	None	None	-	-	Presumed Absent
<i>Lasiurus cinereus</i>	hoary bat	None	None	-	-	Presumed Absent
<i>Laterallus jamaicensis coturniculus</i>	California black rail	None	Threatened	FP	-	Presumed Absent
<i>Masticophis lateralis euryxanthus</i>	Alameda whipsnake	Threatened	Threatened	-	-	Presumed Absent
<i>Melospiza melodia pusillula</i>	Alameda song sparrow	None	None	SSC	-	Presumed Absent

<i>Microcina leei</i>	Lee's micro-blind harvestman	None	None	-	-	Presumed Absent
<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	-	Presumed Absent
<i>Neotoma fuscipes annectens</i>	San Francisco dusky-footed woodrat	None	None	SSC	-	Presumed Absent
<i>Numenius americanus</i>	long-billed curlew	None	None	WL	-	Low
<i>Nycticorax nycticorax</i>	black-crowned night heron	None	None	-	-	Presumed Absent
<i>Nyctinomops macrotis</i>	big free-tailed bat	None	None	SSC	-	Presumed Absent
<i>Oncorhynchus mykiss irideus pop. 11</i>	steelhead - Central Valley DPS	Threatened	None	-	-	Presumed Absent
<i>Oncorhynchus mykiss irideus pop. 8</i>	steelhead - central California coast DPS	Threatened	None	-	-	Presumed Absent
<i>Oncorhynchus tshawytscha pop. 13</i>	chinook salmon - Central Valley fall / late fall-run ESU	None	None	SSC	-	Presumed Absent
<i>Passerculus sandwichensis alaudinus</i>	Bryant's savannah sparrow	None	None	SSC	-	Presumed Absent
<i>Pelecanus occidentalis californicus</i>	California brown pelican	Delisted	Delisted	FP	-	Low
<i>Phalacrocorax auritus</i>	double-crested cormorant	None	None	WL	-	Presumed Absent
<i>Phrynosoma blainvillii</i>	coast horned lizard	None	None	SSC	-	Presumed Absent
<i>Pica nuttalli</i>	yellow-billed magpie	None	None	-	-	Presumed Absent
<i>Rallus obsoletus obsoletus</i>	California Ridgway's rail	Endangered	Endangered	FP	-	Presumed Absent
<i>Rana boylei</i>	foothill yellow-legged frog	None	Candidate Threat	SSC	-	Presumed Absent
<i>Rana draytonii</i>	California red-legged frog	Threatened	None	SSC	-	Presumed Absent
<i>Reithrodontomys raviventris</i>	salt-marsh harvest mouse	Endangered	Endangered	FP	-	Presumed Absent
<i>Rynchops niger</i>	black skimmer	None	None	SSC	-	Presumed Absent
<i>Scapanus latimanus parvus</i>	Alameda Island mole	None	None	SSC	-	Presumed Absent
<i>Selasphorus rufus</i>	rufous hummingbird	None	None	-	-	Low
<i>Setophaga petechia</i>	yellow warbler	None	None	SSC	-	Presumed Absent
<i>Sorex vagrans halicoetes</i>	salt-marsh wandering shrew	None	None	SSC	-	Presumed Absent
<i>Spinus lawrencei</i>	Lawrence's goldfinch	None	None	-	-	Presumed Absent
<i>Spirinchus thaleichthys</i>	longfin smelt	Candidate	Threatened	-	-	Presumed Absent
<i>Sternula antillarum browni</i>	California least tern	Endangered	Endangered	FP	-	Low
<i>Taxidea taxus</i>	American badger	None	None	SSC	-	Presumed Absent
<i>Thalasseus elegans</i>	elegant tern	None	None	WL	-	Low
<i>Trachusa gummifera</i>	San Francisco Bay Area leaf-cutter bee	None	None	-	-	Presumed Absent
<i>Tryonia imitator</i>	mimic tryonia (=California brackishwater snail)	None	None	-	-	Presumed Absent

Special-Status Plant Species

<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	None	None	-	1B.2	Presumed Absent
<i>Arctostaphylos pallida</i>	pallid manzanita	Threatened	Endangered	-	1B.1	Presumed Absent
<i>Astragalus tener var. tener</i>	alkali milk-vetch	None	None	-	1B.2	Presumed Absent
<i>Calochortus umbellatus</i>	Oakland star-tulip	None	None	-	4.2	Presumed Absent
<i>Carex comosa</i>	bristly sedge	None	None	-	2B.1	Presumed Absent
<i>Castilleja ambigua var. ambigua</i>	johnny-nip	None	None	-	4.2	Presumed Absent
<i>Centromadia parryi ssp. congonii</i>	Congdon's tarplant	None	None	-	1B.1	Presumed Absent
<i>Chloropyron maritimum ssp. palustre</i>	Point Reyes salty bird's-beak	None	None	-	1B.2	Presumed Absent
<i>Chorizanthe cuspidata var. cuspidata</i>	San Francisco Bay spineflower	None	None	-	1B.2	Presumed Absent
<i>Chorizanthe robusta var. robusta</i>	robust spineflower	Endangered	None	-	1B.1	Presumed Absent
<i>Clarkia concinna ssp. automixa</i>	Santa Clara red ribbons	None	None	-	4.3	Presumed Absent
<i>Clarkia franciscana</i>	Presidio clarkia	Endangered	Endangered	-	1B.1	Presumed Absent
<i>Dirca occidentalis</i>	western leatherwood	None	None	-	1B.2	Presumed Absent
<i>Eriogonum luteolum var. caninum</i>	Tiburon buckwheat	None	None	-	1B.2	Presumed Absent

<i>Eryngium jepsonii</i>	Jepson's coyote-thistle	None	None	-	1B.2	Presumed Absent
<i>Erythranthe laciniata</i>	cut-leaved monkeyflower	None	None	-	4.3	Presumed Absent
<i>Extriplex joaquinana</i>	San Joaquin spearscale	None	None	-	1B.2	Presumed Absent
<i>Fissidens pauperculus</i>	minute pocket moss	None	None	-	1B.2	Presumed Absent
<i>Fritillaria liliacea</i>	fragrant fritillary	None	None	-	1B.2	Presumed Absent
<i>Gilia capitata ssp. chamissonis</i>	blue coast gilia	None	None	-	1B.1	Presumed Absent
<i>Gilia millefoliata</i>	dark-eyed gilia	None	None	-	1B.2	Presumed Absent
<i>Helianthella castanea</i>	Diablo helianthella	None	None	-	1B.2	Presumed Absent
<i>Hemizonia congesta ssp. congesta</i>	congested-headed hayfield tarplant	None	None	-	1B.2	Presumed Absent
<i>Heteranthera dubia</i>	water star-grass	None	None	-	2B.2	Presumed Absent
<i>Hoita strobilina</i>	Loma Prieta hoita	None	None	-	1B.1	Presumed Absent
<i>Holocarpha macradenia</i>	Santa Cruz tarplant	Threatened	Endangered	-	1B.1	Presumed Absent
<i>Horkelia cuneata var. sericea</i>	Kellogg's horkelia	None	None	-	1B.1	Presumed Absent
<i>Lasthenia conjugens</i>	Contra Costa goldfields	Endangered	None	-	1B.1	Presumed Absent
<i>Layia carnosa</i>	beach layia	Endangered	Endangered	-	1B.1	Presumed Absent
<i>Leptosiphon acicularis</i>	bristly leptosiphon	None	None	-	4.2	Presumed Absent
<i>Leptosiphon grandiflorus</i>	large-flowered leptosiphon	None	None	-	4.2	Presumed Absent
<i>Leptosiphon rosaceus</i>	rose leptosiphon	None	None	-	1B.1	Presumed Absent
<i>Meconella oregana</i>	Oregon meconella	None	None	-	1B.1	Presumed Absent
<i>Monolopia gracilens</i>	woodland woollythreads	None	None	-	1B.2	Presumed Absent
<i>Plagiobothrys chorisianus var. chorisianus</i>	Choris' popcornflower	None	None	-	1B.2	Presumed Absent
<i>Plagiobothrys diffusus</i>	San Francisco popcornflower	None	Endangered	-	1B.1	Presumed Absent
<i>Polygonum marinense</i>	Marin knotweed	None	None	-	3.1	Presumed Absent
<i>Sanicula maritima</i>	adobe sanicle	None	Rare	-	1B.1	Presumed Absent
<i>Spergularia macrotheca var. longistyla</i>	long-styled sand-spurrey	None	None	-	1B.2	Presumed Absent
<i>Streptanthus albidus ssp. peramoenus</i>	most beautiful jewelflower	None	None	-	1B.2	Presumed Absent
<i>Stuckenia filiformis ssp. alpina</i>	slender-leaved pondweed	None	None	-	2B.2	Presumed Absent
<i>Suaeda californica</i>	California seablite	Endangered	None	-	1B.1	Presumed Absent
<i>Trifolium hydrophilum</i>	saline clover	None	None	-	1B.2	Presumed Absent
<i>Triphysaria floribunda</i>	San Francisco owl's-clover	None	None	-	1B.2	Presumed Absent
<i>Viburnum ellipticum</i>	oval-leaved viburnum	None	None	-	2B.3	Presumed Absent

Special-Status Plant Communities

Northern Coastal Salt Marsh	-	-	Sensitive Habitat	-	Absent
Northern Maritime Chaparral	-	-	Sensitive Habitat	-	Absent
Serpentine Bunchgrass	-	-	Sensitive Habitat	-	Absent

U.S. Fish and Wildlife Service (Fed) - Federal

END- Federal Endangered
THR- Federal Threatened

California Department of Fish and Wildlife (CA) - California

END- California Endangered
THR- California Threatened
Candidate- Candidate for listing under the California Endangered Species Act
FP- California Fully Protected
SSC- Species of Special Concern
WL- Watch List

California Native Plant Society (CNPS)

1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2B Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3 Plants About Which More

CNPS Threat Ranks

0.1- Seriously threatened in California
0.2- Moderately threatened in California
0.3- Not very threatened in California

Attachment D

Regulations

Special status species are native species that have been afforded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to continued existence and existing knowledge of population levels.

Federal Regulations

Endangered Species Act of 1973

As defined within the Federal Endangered Species Act (FESA) of 1973, an endangered species is any animal or plant listed by regulation as being in danger of extinction throughout all or a significant portion of its geographical range. A threatened species is any animal or plant that is likely to become endangered within the foreseeable future throughout all or a significant portion of its geographical range. Without a special permit, federal law prohibits the “take” of any individuals or habitat of federally listed species. Under Section 9 of the FESA, take is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” The term “harm” has been clarified to include “any act which actually kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” The presence of any federally threatened or endangered species within a project area generally imposes severe constraints on development, particularly if development would result in “take” of the species or its habitat. Under the regulations of the FESA, the United States Fish and Wildlife Service (USFWS) may authorize “take” when it is incidental to, but not the purpose of, an otherwise lawful act.

Critical Habitat is designated for the survival and recovery of species listed as threatened or endangered under the ESA. Critical Habitat includes those areas occupied by the species, in which are found physical and biological features that are essential to the conservation of an FESA listed species and which may require special management considerations or protection. Critical Habitat may also include unoccupied habitat if it is determined that the unoccupied habitat is essential for the conservation of the species.

Whenever federal agencies authorize, fund, or carry out actions that may adversely modify or destroy Critical Habitat, they must consult with USFWS under Section 7 of the ESA. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing uses federal funds, or requires federal authorization or permits (e.g., funding from the Federal Highway Administration or a permit from the U.S. Army Corps of Engineers (Corps)).

If the USFWS determines that Critical Habitat will be adversely modified or destroyed from a proposed action, the USFWS will develop reasonable and prudent alternatives in cooperation with the federal institution to ensure the purpose of the proposed action can be achieved without loss of Critical Habitat. If the action is not likely to adversely modify or destroy Critical Habitat, USFWS will include a statement in its biological opinion concerning any incidental take that may be authorized and specify terms and conditions to ensure the agency is in compliance with the opinion.

Migratory Bird Treaty Act

Pursuant to the Migratory Bird Treaty Act (MBTA) (16 U.S. Government Code [USC] 703) of 1918, as amended in 1972, federal law prohibits the taking of migratory birds or their nests or eggs (16 USC 703; 50 CFR 10, 21). The statute states:

Unless and except as permitted by regulations made as hereinafter provided in this subchapter, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill...any migratory bird, any part, nest, or egg of any such bird...included in the terms of the [Migratory Bird] conventions...

The MBTA covers the taking of any nests or eggs of migratory birds, except as allowed by permit pursuant to 50 CFR, Part 21. Disturbances causing nest abandonment and/or loss of reproductive effort (i.e., killing or abandonment of eggs or young) may also be considered “take.” This regulation seeks to protect migratory birds and active nests.

In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). Six families of raptors occurring in North America were included in the amendment: Accipitridae (kites, hawks, and eagles); Cathartidae (New World vultures); Falconidae (falcons and caracaras); Pandionidae (ospreys); Strigidae (typical owls); and Tytonidae (barn owls). The provisions of the 1972 amendment to the MBTA protects all species and subspecies of the families listed above. The MBTA protects over 800 species including geese, ducks, shorebirds, raptors, songbirds and many relatively common species.

State Regulations

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) provides for the protection of the environment within the State of California by establishing State policy to prevent significant, avoidable damage to the environment through the use of alternatives or mitigation measures for projects. It applies to actions directly undertaken, financed, or permitted by State lead agencies. If a project is determined to be subject to CEQA, the lead agency will be required to conduct an Initial Study (IS); if the IS determines that the project may have significant impacts on the environment, the lead agency will subsequently be required to write an Environmental Impact Report (EIR). A finding of non-significant effects will require either a Negative Declaration or a Mitigated Negative Declaration instead of an EIR. Section 15380 of the CEQA Guidelines independently defines “endangered” and “rare” species separately from the definitions of the California Endangered Species Act (CESA). Under CEQA, “endangered” species of plants or animals are defined as those whose survival and reproduction in the wild are in immediate jeopardy, while “rare” species are defined as those who are in such low numbers that they could become endangered if their environment worsens.

California Endangered Species Act (CESA)

In addition to federal laws, the state of California implements the CESA which is enforced by CDFW. The CESA program maintains a separate listing of species beyond the FESA, although the provisions of each act are similar.

State-listed threatened and endangered species are protected under provisions of the CESA. Activities that may result in “take” of individuals (defined in CESA as; “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”) are regulated by CDFW. Habitat degradation or modification is not included in the definition of “take” under CESA. Nonetheless, CDFW has interpreted “take” to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are fully protected against take, as defined above.

CDFW has also produced a species of special concern list to serve as a species watch list. Species on this list are either of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have formal statutory protection. At the federal level, USFWS also uses the label species of concern, as an informal term that refers to species which might be in need of concentrated conservation actions. As the Species of Concern designated by USFWS do not receive formal legal protection, the use of the term does not necessarily ensure that the species will be proposed for listing as a threatened or endangered species.

Fish and Game Code

Fish and Game Code Sections 3503, 3503.5, 3511, and 3513 are applicable to natural resource management. For example, Section 3503 of the Code makes it unlawful to destroy any birds’ nest or any birds’ eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks, eagles, and owls) are protected under Section 3503.5 of the Fish and Game Code which makes it unlawful to take, possess, or destroy their nest or eggs. A consultation with CDFW may be required prior to the removal of any bird of prey nest that may occur on a project site. Section 3511 of the Fish and Game Code lists fully protected bird species, where the CDFW is unable to authorize the issuance of permits or licenses to take these species. Pertinent species that are State fully protected by the State include golden eagle (*Aquila chrysaetos*) and white-tailed kite (*Elanus leucurus*). Section 3513 of the Fish and Game Code makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Native Plant Protection Act

Sections 1900–1913 of the Fish and Game Code were developed to preserve, protect, and enhance Rare and Endangered plants in the state of California. The act requires all state agencies to use their authority to carry out programs to conserve Endangered and Rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the CDFW at

least ten days in advance of any change in land use which would adversely impact listed plants. This allows the CDFW to salvage listed plant species that would otherwise be destroyed.

California Native Plant Society Rare and Endangered Plant Species

Vascular plants listed as rare or endangered by the CNPS, but which have no designated status under FESA or CESA are defined as follows:

California Rare Plant Rank

- 1A- Plants Presumed Extirpated in California and either Rare or Extinct Elsewhere
- 1B- Plants Rare, Threatened, or Endangered in California and Elsewhere
- 2A- Plants Presumed Extirpated in California, But More Common Elsewhere
- 2B- Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
- 3- Plants about Which More Information is Needed - A Review List
- 4- Plants of Limited Distribution - A Watch List

Threat Ranks

- .1- Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2- Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- .3- Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFG regulates activities under the Fish and Game Code Section 1600-1616, and the Regional Board regulates activities pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

Federal Regulations

Section 404 of the Clean Water Act

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) have jointly regulated the filling of “waters of the U.S.,” including wetlands, pursuant to Section 404 of the Clean Water Act (CWA). The Corps has regulatory authority over the discharge of dredged or fill material into the waters of the United States under Section 404 of the CWA. The Corps and EPA define “fill material” to include any “material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of the waters of the United States.” Examples include, but are not limited to, sand, rock, clay, construction debris, wood chips, and “materials used to create any structure or infrastructure in the waters of the United States.” In order to further define the scope of waters protected under the CWA, the Corps and EPA published the Clean Water Rule on June 29, 2015. Pursuant to the Clean Water Rule, the term “waters of the United States” is defined as follows:

- (i) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- (ii) All interstate waters, including interstate wetlands¹.
- (iii) The territorial seas.
- (iv) All impoundments of waters otherwise defined as waters of the United States under the definition.
- (v) All tributaries² of waters identified in paragraphs (i) through (iii) mentioned above.
- (vi) All waters adjacent³ to a water identified in paragraphs (i) through (v) mentioned above, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters.

¹ The term *wetlands* means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

² The terms *tributary* and *tributaries* each mean a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (iv) mentioned above), to a water identified in paragraphs (i) through (iii) mentioned above, that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark.

³ The term *adjacent* means bordering, contiguous, or neighboring a water identified in paragraphs (i) through (v) mentioned above, including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like.

- (vii) All prairie potholes, Carolina bays and Delmarva bays, Pocosins, western vernal pools, Texas coastal prairie wetlands, where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (i) through (iii) mentioned above.
- (viii) All waters located within the 100-year floodplain of a water identified in paragraphs (i) through (iii) mentioned above and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (i) through (v) mentioned above, where they are determined on a case-specific basis to have a significant nexus to a waters identified in paragraphs (i) through (iii) mentioned above.

The following features are not defined as “waters of the United States” even when they meet the terms of paragraphs (iv) through (viii) mentioned above:

- (i) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act.
- (ii) Prior converted cropland.
- (iii) The following ditches:
 - (A) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.
 - (B) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.
 - (C) Ditches that do not flow, either directly or through another water, into a water of the United States as identified in paragraphs (i) through (iii) of the previous section.
- (iv) The following features:
 - (A) Artificially irrigated areas that would revert to dry land should application of water to that area cease;
 - (B) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;
 - (C) Artificial reflecting pools or swimming pools created in dry land;
 - (D) Small ornamental waters created in dry land;
 - (E) Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;
 - (F) Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of a tributary, non-wetland swales, and lawfully constructed grassed waterways; and
 - (G) Puddles.
- (v) Groundwater, including groundwater drained through subsurface drainage systems.
- (vi) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.

- (vii) Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.

Section 401 of the Clean Water Act

Pursuant to Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity which may result in any discharge to waters of the United States must provide certification from the State or Indian tribe in which the discharge originates. This certification provides for the protection of the physical, chemical, and biological integrity of waters, addresses impacts to water quality that may result from issuance of federal permits, and helps insure that federal actions will not violate water quality standards of the State or Indian tribe. In California, there are nine Regional Water Quality Control Boards (Regional Board) that issue or deny certification for discharges to waters of the United States and waters of the State, including wetlands, within their geographical jurisdiction. The State Water Resources Control Board assumed this responsibility when a project has the potential to result in the discharge to waters within multiple Regional Boards.

State Regulations

Fish and Game Code

Fish and Game Code Sections 1600 et. seq. establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Fish and Game Code Section 1602 requires any person, state, or local governmental agency or public utility to notify the CDFW before beginning any activity that will do one or more of the following:

- (1) substantially obstruct or divert the natural flow of a river, stream, or lake;
- (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake;
- or
- (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State. CDFW's regulatory authority extends to include riparian habitat (including wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFW takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. A Section 1602 Streambed Alteration Agreement would be required if impacts to identified CDFW jurisdictional areas occur.

Porter Cologne Act

The California *Porter-Cologne Water Quality Control Act* gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool in the post SWANCC and Rapanos regulatory environment, with respect to the state’s authority over isolated and insignificant waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge in the event that there is no Section 404/401 nexus. Although “waste” is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

Appendix F
Cultural Resources Technical Report



**CULTURAL RESOURCES SURVEY
FOR THE
NORTHERN CALIFORNIA POWER AGENCY
SOLAR PROJECT 1 – ALAMEDA DOOLITTLE LANDFILL
ALAMEDA COUNTY, CALIFORNIA**

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USGS Quadrangle
San Leandro, California
Anza Project No. 19-0013

July 2019

Hunt, Kevin and Katherine Collins

2019 *Cultural Resources Survey for the Northern California Power Agency Solar Project 1 – Alameda Doolittle Landfill, Alameda County, California*. Anza Resource Consultants Project No. 19-0013. Report on file at the Northwest Information Center, Sonoma State University.

EXECUTIVE SUMMARY

Anza Resource Consultants (Anza) was retained by K.S. Dunbar & Associates, Inc. to conduct a Phase I cultural resources study for the Northern California Power Agency (NCPA) Solar Project 1 – Alameda Doolittle Landfill in the City of Alameda, Alameda County, California (project). The Alameda Doolittle Landfill project site/area of potential effects is approximately 33.2 acres situated atop the existing Doolittle Landfill. The project site is northwest of the Oakland Airport and bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive, and on the east by Martin Luther King Jr. Regional Shoreline Park. The proposed project is subject to the California Environmental Quality Act (CEQA) with NCPA serving as lead agency. Because of its proximity to the Oakland Airport, the project also requires permitting from the Federal Aviation Administration (FAA) and, therefore, must also comply with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act.

This study includes definition of the project area of potential effects (APE), a cultural resources records search, Sacred Lands File search and Native American scoping, a pedestrian survey of the project site, and preparation of this technical report in compliance with the cultural resources requirements of CEQA, NEPA, and Section 106.

The cultural resource records search, Native American scoping, and pedestrian survey identified no cultural resources within or adjacent to the project APE. Anza recommends a finding of ***no impact to historical resources*** under CEQA and ***no historic properties affected*** under NEPA. No further cultural resources study is recommended; however, the following standard measures are recommended to avoid potential impacts from the unanticipated discovery of cultural resources during project related ground disturbing activities.

UNANTICIPATED DISCOVERY OF CULTURAL RESOURCES

If cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) must be contacted immediately to evaluate the find. If the discovery proves to be significant under CEQA, additional work such as data recovery excavation may be warranted.

UNANTICIPATED DISCOVERY OF HUMAN REMAINS

The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the county coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission, which will determine and notify a Most Likely Descendant. The Most Likely Descendant shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

TABLE OF CONTENTS

Executive Summary	i
Unanticipated Discovery of Cultural Resources	i
Unanticipated Discovery of Human Remains	i
1. Introduction	1
1.1 Project Description	1
1.2 Regulatory Setting	1
1.2.1 State	1
1.2.2 Federal	2
1.3 Area of Potential Effects	3
1.4 Personnel	3
2. Environmental Setting	5
3. Cultural Setting	6
3.1 Prehistoric Overview	6
3.2 Ethnographic Overview	7
3.3 Historic Overview	8
3.3.1 Alameda County	9
3.3.2 City of Alameda	9
3.3.3 Bay Farm Island	9
4. Background Research	10
4.1 California Historical Resource Information System	10
4.1.1 Previous Studies	10
4.1.2 Previously Recorded Resources	14
4.2 Native American Scoping	15
5. Fieldwork	16
5.1 Survey Methods	16
5.2 Results	16
6. Management Recommendations	19
6.1 Unanticipated Discovery of Cultural Resources	19
6.2 Unanticipated Discovery of Human Remains	19
7. References	20

LIST OF FIGURES

Figure 1. Area of Potential Effects Map	4
---	---

LIST OF TABLES

Table 1. Previous Cultural Resource Studies within a 0.5-Mile Radius of the Project APE	10
Table 2. Previously Recorded Cultural Resources within 0.5-Mile of the Project APE	14

LIST OF PHOTOGRAPHS

Photograph 1. Overview from northeast corner of APE, facing south	17
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Photograph 2. Overview of APE from western boundary, facing east. 17

Photograph 3. View of gas lines with north portion of APE, facing northwest. 18

Photograph 4. Detail of clam and mussel shells with scale. 18

APPENDICES

- Appendix A. Record Search Summary
- Appendix B. Native American Scoping

1. INTRODUCTION

Anza Resource Consultants (Anza) was retained by K.S. Dunbar & Associates, Inc. to conduct a Phase I cultural resources study for the Northern California Power Agency (NCPA) Solar Project 1 – Alameda Doolittle Landfill in the City of Alameda, Alameda County, California (Figure 1). The proposed project is subject to the California Environmental Quality Act (CEQA) with NCPA serving as lead agency. Because of its proximity to the Oakland Airport, the project also requires permitting from the Federal Aviation Administration (FAA) and, therefore, must also comply with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (Section 106).

This study includes definition of the project area of potential effects (APE), a cultural resources records search, Sacred Lands File search and Native American scoping, a pedestrian survey of the project site, and preparation of this technical report in compliance with the cultural resources requirements of CEQA, NEPA, and Section 106. This report has been prepared following the *Archaeological Resources Management Report (ARMR): Recommended Content and Format* guidelines (California Office of Historic Preservation 1990).

1.1 PROJECT DESCRIPTION

The objective of the NCPA Solar Project 1 is to develop a fleet of photovoltaic (PV) solar power plants throughout participating member service territories to be completed and placed in service by the end of 2019. The plants will be managed by NCPA as a single project to be owned and operated by a third-party provider through a power purchase agreement (PPA). After the initial five to seven years of operation, NCPA plans to purchase the plants.

The Alameda Doolittle Landfill project proposes to construct a PV solar generation facility. The proposed technology type for the solar project is horizontal single axis tracking and the total installed capacity would be approximately 2.60 Megawatts direct current. The Alameda Doolittle Landfill site is located on a 33.2-acre closed Class III landfill and solar panels would be placed on 11.2 acres of the site. The project site is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive, and on the east by Martin Luther King Jr. Regional Shoreline Park. (Burns & McDonnell 2019).

1.2 REGULATORY SETTING

As noted above, the project is subject to CEQA with NCPA as lead agency, as well as NEPA and Section 106 because FAA permitting makes the project a federal undertaking. Compliance with the cultural resources requirements of CEQA and Section 106 are described below in Sections 1.2.1 and 1.2.2, respectively.

1.2.1 State

CEQA requires a lead agency determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC], Section 21084.1). A historical resource is a resource listed in, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (State CEQA Guidelines, Section 15064.5[a][1-3]).

“A resource shall be considered historically significant if it meets any of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.”

In addition, if it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC, Section 21083.2[a], [b], and PRC, Section 21083.2(g) defines a unique archaeological resource as: “an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, the probability is high that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.”

California Assembly Bill 52 of 2014 (AB 52) took effect July 1, 2015, and expanded CEQA by establishing a formal consultation process for California tribes within the CEQA process. The bill specifies that any project that may affect or cause a substantial adverse change in the significance of a tribal cultural resource would require a lead agency to “begin consultation with a California Native American tribe that is traditional and culturally affiliated with the geographic area of the proposed project.” According to the legislative intent for AB 52, “tribes may have knowledge about land and cultural resources that should be included in the environmental analysis for projects that may have a significant impact on those resources.” Section 21074 of AB 52 also defines a new category of resources under CEQA called “tribal cultural resources.” Tribal cultural resources are defined as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” and is either listed on or eligible for the California Register of Historical Resources or a local historic register, or if the lead agency chooses to treat the resource as a tribal cultural resource. See also PRC 21074 (a)(1)(A)-(B).

1.2.2 Federal

The NCPA Solar Project 1 – Alameda Doolittle Landfill requires permitting from the FAA and therefore qualifies as a federal undertaking. Cultural resources are considered during federal undertakings chiefly under Section 106 of the NHPA of 1966 (as amended) through one of its implementing regulations, 36 CFR 800 (Protection of Historic Properties), as well as NEPA. Properties of traditional religious and cultural importance to Native Americans are considered under Section 101(d)(6)(A) of NHPA. Additional relevant federal laws include the Archaeological and Historic Preservation Act of 1974, the American Indian Religious Freedom Act of 1978, the Archaeological Resources Protection Act of 1979, and the Native American Graves Protection and Repatriation Act of 1989, among others.

Section 106 of the NHPA (16 United States Code [USC] 470f) requires federal agencies to take into account the effects of their undertakings on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP) and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings (36 CFR 800.1). Under Section 106, the significance of any adversely affected cultural resource is assessed and mitigation measures are proposed to reduce any impacts to an acceptable level. Significant cultural resources are those resources that are listed in or are eligible for listing in the NRHP per the criteria listed below (36 CFR 60.4). Cultural resources eligible for the NRHP are labeled as historic properties.

“The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that:

- (a) Are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) Are associated with the lives of persons significant in our past; or
- (c) Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) Have yielded, or may be likely to yield, information important in prehistory or history.”

1.3 AREA OF POTENTIAL EFFECTS

The area of potential effects (APE) of an undertaking is defined in 36 CFR 800.16(d) as the “geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such property exists.” The APE is three-dimensional (depth, length, width) and include all areas directly and indirectly affected by the proposed construction. The current undertaking is located at a closed Class 3 solid waste landfill. To the north is San Leandro Bay; to the west is Doolittle Drive and the San Leandro Bay Bridge, to the south is Doolittle Drive, and to the east is Martin Luther King Jr. Regional Shoreline Park, including a model airplane field.

Effects would include construction phase direct effects including ground disturbance to an estimated depth of two feet throughout the APE. The vertical depth of the APE is limited because the project cannot disturb the landfill and its gas recovery system. The landfill has a four-foot-thick soil cap, which requires the solar panels to be ballasted and rack mounted (cast-in place concrete anchors at grade) to achieve this limited depth of disturbance. The indirect APE includes adjacent or nearby properties that may be indirectly affected (e.g., visual change to historic district, vibrational impacts to unreinforced adobe structures) by the proposed undertaking. Figure 1 displays the project APE for the current undertaking.

1.4 PERSONNEL

Anza Principal and Senior Cultural Resources Specialist Kevin Hunt managed this study, prepared all shapefiles and figures, and was the primary author of this report. Cultural Resources Specialist Sydni Kitchel conducted the records search and field survey. Principal Investigator Katherine Collins, M.A., Registered Professional Archaeologist (RPA), coauthored this report and served as principal investigator for the study. Ms. Collins meets the Secretary of the Interior’s Professional Qualifications Standards for prehistoric and historic archaeology (National Park Service 1983).



Figure 1. Area of Potential Effects Map

2. ENVIRONMENTAL SETTING

The project site is located in the northeastern area of Bay Farm Island. Bay Farm Island was originally an island in San Francisco Bay; however, due to land reclamation it is now a peninsula connected to the Oakland mainland. Bay Farm Island was dominated by marshes prior to reclamation and was nearly completely farmed with asparagus in the late nineteenth century (Pacific Rural Press 1897). Much of the island is on reclaimed land with canal features to help drainage. The project site (direct APE) is a former solid waste disposal site (Alameda Doolittle Landfill) that began operation in 1953 and was closed in 1985. The waste is capped by four feet of fill and covered in non-native grasses, with other species such as wild mustard, thistle, dill, and morning glory. The project site is bounded by San Leandro Bay to the north. The region has a warm-summer Mediterranean climate and averages 20 inches of rain per year.

3. CULTURAL SETTING

The NCPA Solar Project 1 – Alameda Doolittle Landfill APE is in San Francisco Bay region. The following sections describe the prehistory and history of the region in broad terms supplemented with local information.

3.1 PREHISTORIC OVERVIEW

The prehistoric culture history of the San Francisco Bay region has been divided into five chronological periods based on recent research and further refinement of previous chronological frameworks (Milliken et al. 2007). These periods include the Early Holocene (8000-3500 cal B.C.), Early Period (3500-500 cal B.C.), Lower Middle Period (500 cal B.C.-cal A.D. 430), Upper Middle Period (cal A.D. 430-1050), and Late Period (cal A.D. 1050-1550). A pre-8000 B.C. occupation is assumed to exist in this region; however, no direct evidence of this occupation has been discovered to date.

Within this chronological framework, researchers further recognize certain sets of cultural and technological traits that appeared to span long periods of time and covered large areas. These sets of traits were referred to as either “horizons” or “patterns.” With smaller (local) units of patterns referred to as “aspects” and “phases” (Fredrickson 1974, Moratto 1984, Rosenthal et al. 2007). Below is a brief overview of prehistoric occupation history of the East Bay portion of the San Francisco Bay region.

During the **Early Holocene (8000 to 3500 cal B.C.)**, the San Francisco Bay region was characterized by the presence of highly mobile forager groups. A characteristic element of this period is the use of ground stone implements such as millingsstones and handstones and the use of a variety of large wide-stemmed and leaf shaped projectile points. The earliest archaeological evidence of human occupation in the region comes from site CCO-696 at Los Vaqueros Reservoir east of Mount Diablo. Charcoal samples from this site returned a date of 7920 cal B.C. Analysis of wide-stemmed projectile points at the site indicate they were made of Napa Valley obsidian suggesting some degree of trade or mobility and an analysis of archaeobotanical remains from the site suggest an economy focused on acorn and wild cucumber gathering (Milliken et al. 2007).

The **Early Period (3500 to 500 cal B.C.)** saw the introduction of new ground stone technology in the form of the mortar, and the earliest evidence of the manufacture cut shell beads in the form of the Olivella grooved rectangle bead and double-perforated Haliotis rectangle bead. Both bead types are markers of Early Period occupation and continued to be in use until 2,800 years ago. East Bay archaeological assemblages associated with the Lower Berkeley Pattern are characterized by the presence of mortar and pestles, as well as burial with ornamental grave associations indicating a transition from a forager to a semi-sedentary subsistence pattern. These indicators were present in shell mound sites like West Berkeley (ALA-307), Ellis Landing (CCO-295), and Pacheco (MRN-152). The presence of elliptical house floors with postholes at the Rossmoor site (CCO-309) also suggests greater semi-sedentism during this period (Milliken et al. 2007).

The **Lower Middle Period (500 cal B.C. to cal A.D. 430)** is marked by several changes in material cultural such as the disappearance of the Haliotis rectangle bead from the archaeological record. In its place split-beveled and tiny saucer Olivella beads began to appear. Also during this period were new tool types such as barbless fish spears, elk femur spatula, tubes, and whistles. The presence of basketry awls with shouldered tips indicates the introduction of coiled basketry. The mortar and pestle continued to be used but the net sinker, an Early Period marker, disappeared at most Lower Middle Period sites (Milliken et al. 2007).

The **Upper Middle Period (cal A.D. 430 to 1050)** saw further material culture changes as the Olivella saucer bead trade network collapsed and was replaced by trade in Olivella saddle beads. This bead type would dominate the central California bead trade until cal A.D. 1000. This period also saw the introduction of the Meganos mortuary pattern to the region. Meganos burials were extended dorsal burials typically decorated with shell beads and other burial goods. An early example of this mortuary practice comes from the Santa Rita village site (ALA-413) in the Livermore Valley. There, a burial contained a 30-year-old male with approximately 30,000 Olivella saucer beads. The end of the Upper Middle Period saw the devolution of the Olivella saddle bead type into a variety of wide and bi-symmetrical forms and the appearance of multiple Haliotis bead styles.

Late Period (cal A.D. 1050 to 1550) material culture reflected a trend toward greater social complexity, social stratification, and increased sedentism. This period saw the appearance of material culture markers associated with the Augustine Pattern that included fully shaped show mortars, new Olivella bead types such as the Olivella callus cup bead, and an array of multi-perforated and bar-scored Haliotis ornaments. During this time the bow and arrow was introduced to the region and along with it a projectile point type that was unique to central California, the Stockton serrated series. The introduction of the bow and arrow resulted in a shift at Napa Valley obsidian quarries from biface and debitage production to large flakes that could be used to manufacture projectile points and other simple flakes. There are also indicators that Late Period obsidian exchange was regulated by social elites. Evidence of greater social stratification is also present in mortuary practices where partial cremation, often associated with high-status individuals, began to appear, or re-appear in some places. In addition, the graves and cremations of high-status individual began to show a greater variety of uncommon wealth items during the Late Period. Changes in material culture continued into the terminal Late Period (Post-A.D. 1550) but appeared to be interrupted by the arrival of European settlers to the region beginning in 1776 (Milliken et al. 2007).

3.2 ETHNOGRAPHIC OVERVIEW

The project APE is within the traditional territory of the Ohlone people, who occupied an area extending from the Carquinez Strait on the north, along both sides of the San Francisco Bay to Big Sur on the south. Linguistically, the Ohlone spoke one of eight Costanoan languages, including Karkin, Ramaytush, Chochenyo, Tamyen, Awawas, Chalon, Mutsun, and Rumsen. Each linguistic group occupied a specific area within Ohlone territory with the project APE lying within the Chochenyo-speaking group. Costanoan along with Miwok form the Utian language family, which is part of the Penutian language stock (Kroeber 1925, Levy 1978, Mithun 1999).

The primary sociopolitical unit among the Ohlone was the tribelet, comprising the residents of one or more villages and their associated seasonal camps. Each tribelet had a population of about 50 to 500 people with larger tribelets containing several permanent villages. The tribelet as whole was led by a chieftain, which was a hereditary position passed down from father to son. If there was no male heir, the position could be passed to the chief's sister or daughter. The chief acted as the leader of a council of elders, fed visitors, provided for the impoverished, and directed ceremonial activities as well as hunting, fishing, gathering, and warfare expeditions. The chief and council acted as advisors to the community but could wield direct authority during times of war (Levy 1978). Ohlone dwellings typically consisted of a domed structure covered in thatch which was secured using poles tied with willow. Community structures included sweathouses, oftentimes constructed against the bank of a stream, circular or oval shaped dance houses, and domed assembly houses that could hold several hundred people (Levy 1978).

The Ohlone relied on hunting, fishing, and gathering for their basic subsistence. Acorns served as the primary staple and were harvested from several species of oak, including the Coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), Tanbark oak (*Lithocarpus densiflora*), and California black oak

(*Quercus kelloggii*). Acorns were ground into a meal, leached to remove the tannic acid, and then prepared into a mush or bread. In addition to gathering plants, the Ohlone hunted animals such as black tailed deer, Roosevelt elk, antelope, and grizzly bear. The flesh of whales and sea lions was highly prized for its fat content and roasted in earth ovens. Important fish species included steelhead, salmon, sturgeon, and lampreys (Levy 1978). Another important food source was the gathering of mussels and other shellfish, as evidenced by the presence of numerous shell mounds within Ohlone territory (Kroeber 1925).

The Ohlone were known for the use of watercraft made from Tule reeds known as Tule balsas. These watercraft were propelled using a double-bladed paddle and were used for transportation, fishing, and duck hunting. The Ohlone used a variety of tools made from bone, stone, antler, wood, and textile. Bows were made of wood from sinew or vegetable material with arrowheads made of stone or bone. Lithic raw materials used in tool making included obsidian and chert, with chert quarried from local sources within Ohlone territory and obsidian obtained through trade. Typical basketry items included seed beaters, fish traps, and baskets for storing, winnowing, parching, and carrying burdens. Other textiles included mats and cordage (Levy 1978).

The Ohlone were greatly impacted by Spanish missionization efforts as seven missions were established within their territory. The presence of these missions profoundly changed Ohlone society as they were systematically removed from their land and re-settled within the seven missions as workers. Ohlone of differing linguistic and cultural backgrounds were oftentimes mixed together at these missions thereby further diluting each group's social cohesion. The dismantling of the mission system by the Mexican government resulted in many Ohlone leaving the missions and going to work as laborers on the newly established ranchos. The Ohlone population continued to decline over the years and by the 1970's it was estimated there were only 200 people of Ohlone descent. Today there are three federally recognized Ohlone groups in California (Levy 1978, White 2019).

3.3 HISTORIC OVERVIEW

The historic period for the state of California generally begins with the establishment of the first Spanish mission and presidio in San Diego in 1769. This marks the beginning of the Spanish period of California history which lasted until 1822. The Spanish period saw the establishment of a permanent European presence in California in the form of 21 missions located along the coast between San Diego and Sonoma, four military presidios located in San Diego, Monterey, San Francisco and Santa Barbara, and three pueblos (towns) that later became the cities of Los Angeles, San Jose and Santa Cruz (Robinson 1948). The Spanish period ended with news of Mexican independence from the Spanish crown reaching California in 1822. The Mexican period of California history saw the seizure of lands once held by the missions through the Mexican Secularization Act of 1833, and the redistribution of those lands to individuals in the form of land grants known as "ranchos" (Robinson 1948). During this period the Mexican government in California issued about 700 land grants to Mexican citizens and foreign immigrants (Shumway 1988). The outbreak of war between the United States and Mexico and ultimately the signing of the Treaty of Guadalupe Hidalgo in 1848 ended the Mexican period and signaled the beginning of the American period of California history. The early American period is marked by the discovery of gold at Sutter's Mill in 1848 resulting in a gold rush that saw a massive influx of settlers from other parts of the United States and around the world, greatly impacting California's native population. In 1869 the transcontinental railroad was completed linking California with the rest of the United States. The gold rush and the establishment of the railroad played major roles in the development of California into a national and worldwide leader in agricultural and industrial production. These early developments also resulted in making California one of the most racially and ethnically diverse states in the Union.

3.3.1 Alameda County

Alameda County was established in 1853 from parts of Contra Costa and Santa Clara counties. The county derives its name from the Spanish name for a major stream running through the county known as El Arroyo de la Alameda (Alameda Creek). The county seat was originally established in Alvarado but in 1856 it was moved to San Leandro and was moved again in 1873 to Oakland where it has remained. European exploration and settlement in the Alameda County region occurred as early as 1769 with an expedition led by Jose Francisco de Ortega. This was followed up by an expedition led by Pedro Fages a year later. In 1776 Spanish Captain Juan Bautista de Anza led yet another expedition that entered Alameda County. It would not be until 1794, with the establishment of Mission San Jose at what would become the City of Fremont, that a permanent Spanish presence was established in the county (Hoover et al 2002). Between 1835 and 1844 the Mexican government in California issued 14 land grants within the county. One of them, Rancho San Antonio encompasses project area (Shumway 1988). These ranchos occupied the best coastal and arable lands within the county, establishing ranching and farming as the primary source of income for residents well into the twentieth century.

3.3.2 City of Alameda

The City of Alameda is unusual because it is an island city located adjacent to the City of Oakland. In 1851 American settlers William Worthington Chipman and Gideon Aughinbaugh arrived in the San Francisco Bay region and purchased 160 acres of what was originally part of Rancho San Antonio from Antonio Maria Peralta. This settlement consisted of three communities: Old Alameda, Encinal, and Woodstock, which in 1872 were incorporated into the City of Alameda. Since its inception, Alameda attracted a diverse population of settlers which included Italians, Portuguese, Spaniards, Chinese, Japanese, Scandinavians and Germans. These settlers came to farm, work as servants, handymen, or gardeners, and help build the transcontinental railroad. Economic development continued with the city serving as a recreation destination and as a place for shipbuilding. The city was transformed into a military town with the establishment of an army base known as Benton Field in 1935 which later became the Alameda Naval Air Station in 1940. Today the city boasts a population of more than 76,000 residents (AlamedaMuseum 2019).

3.3.3 Bay Farm Island

The island was originally used by Native Americans for resource foraging and collection (Baker 2014). In 1820, near the end of the Spanish period, Sergeant Luis Maria Peralta Antonio Maria Peralta was granted 44,800 acres by the last Spanish governor, Don Pablo Vicente, that included Bay Farm. His sons and daughters each inherited portions of the rancho; however, much was lost by the family through property taxes and lawsuits in the early American period. The township of Alameda was established in 1852 and included the marshes then known as Bay Farm (Baker 2014). When Alameda was incorporated in 1872 Bay Farm was retained within the city. The island was known primarily for asparagus farming but ranching was also conducted. By the 1870s reclamation efforts secured more developable land for both agriculture and subdivision, and a permanent bridge to Alameda Island was also constructed. Eventually reclamation connected the once island with the mainland of Oakland, making it a peninsula. Larger developments including a golf course and the Oakland Airport in the twentieth century. Today, Bay Island is known as a relatively affluent community and home to the Oakland Raiders training facility.

4. BACKGROUND RESEARCH

4.1 CALIFORNIA HISTORICAL RESOURCE INFORMATION SYSTEM

Anza conducted a search of cultural resource records housed at the California Historical Resources Information System (CHRIS), Northwest Information Center (NWIC) located at Sonoma State University on July 9, 2019. The search was conducted to identify all previous cultural resources work and previously recorded cultural resources within a 0.5-mile radius of the project APE (Appendix A). Section 106 studies typically have a one-mile search radius; however, in urban settings such as the current APE, a 0.5-mile radius is adequate to establish the resource context because of the density of previously recorded historic properties. The CHRIS search included a review of the NRHP, CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. The records search also included a review of all available historic USGS 7.5-, 15-, and 30-minute quadrangle maps and General Land Office plat maps.

4.1.1 Previous Studies

The NWIC records search identified 29 cultural resources studies that were conducted within a 0.5-mile radius of the project APE, none of which was mapped adjacent to or within the project APE (Table 1). An additional 18 regional overview studies were also identified (Table 1).

Table 1. Previous Cultural Resource Studies within a 0.5-Mile Radius of the Project APE

Report Number	Author	Year	Title	Relationship to Project APE
S-000848	David A. Fredrickson	1977	A Summary of Knowledge of the Central and Northern California Coastal Zone and Offshore Areas, Vol. III, Socioeconomic Conditions, Chapter 7: Historical & Archaeological Resources	Overview
S-001511	Stephen A. Dietz	1979	A Preliminary Archaeological Reconnaissance of the approximately 3 acre parcel located at 2900 Central Avenue in Alameda, California (letter report)	Outside
S-001683	James C. Bard	1979	An archaeological impact assessment of the "Wood Property" in Alameda, California (letter report)	Outside
S-001784	David Chavez	1979	Preliminary Cultural Resources Identification: San Francisco Bay Study for Corps of Engineers Projects	Outside
S-002152	Stephen A. Brandt	1980	Cultural Resources Investigation of Operating Projects, Oakland Inner Harbor	Outside
S-002458	Neil Ramiller, Suzanne Ramiller, Roger Werner, and Suzanne Stewart	1981	Overview of Prehistoric Archaeology for the Northwest Region, California Archaeological Sites Survey: Del Norte, Humboldt, Mendocino, Lake, Sonoma, Napa, Marin, Contra Costa, Alameda	Overview
S-002458a	Suzanne Ramiller	1982	Prehistoric Archaeology Overview Northwest Region; California Archaeological Inventory, Volume I: Humboldt and Del Norte Counties	Overview

Report Number	Author	Year	Title	Relationship to Project APE
S-002458b	Roger H. Werner	1982	Archaeological Overview of Mendocino and Lake Counties	Overview
S-002458c	Suzanne Stewart	1982	Prehistoric Archaeology Overview Northwest Region; California Archaeological Inventory, Volume I: Napa and Sonoma Counties	Overview
S-002458d	Suzanne B. Stewart	1982	Archaeological Overview of Alameda, Contra Costa, and Marin Counties	Overview
S-002458e	Neil Ramiller	1982	Environmental Overview of The Northwest Region	Overview
S-007903	David Chavez	1985	Cultural Resources Evaluation for the East Bay Municipal Utility District Infiltration/Inflow Project (P. O. 951 1143 EA)	Outside
S-009462	Teresa Ann Miller	1977	Identification and Recording of Prehistoric Petroglyphs in Marin and Related Bay Area Counties	Overview
S-009583	David W. Mayfield	1978	Ecology of the Pre-Spanish San Francisco Bay Area	Overview
S-009795	Thomas Lynn Jackson	1986	Late Prehistoric Obsidian Exchange in Central California	Overview
S-016077	David Chavez and Jan M. Hupman	1994	Archaeological Resources Investigations for the City of Alameda Sanitary Sewer Relief Line Locations, Alameda County, California	Outside
S-016660	Jeffrey B. Fentress	1992	Prehistoric Rock Art of Alameda and Contra Costa Counties, California	Overview
S-017773	Angela M. Banet	1992	Contract 04E634-EP, Task Order #9, Historic Map Review for CALTRANS Maintenance Facilities (letter report)	Outside
S-017835	Judy Myers Suchey	1975	Biological Distance of Prehistoric Central California Populations Derived from Non-Metric Traits of the Cranium	Overview
S-018217	Glenn Gmoser	1996	Cultural Resource Evaluations for the Caltrans District 04 Phase 2 Seismic Retrofit Program, Status Report	Outside
S-020395	Donna L. Gillette	1998	PCNs of the Coast Ranges of California: Religious Expression or the Result of Quarrying?	Outside
S-029411	Thomas M. Origer	2001	Record Search Results for a Proposed American Tower Corporation Site (Alameda Golf Course), Alameda, Alameda County, California (letter report)	Outside
S-029546	Eleanor H. Derr and Brown & Mills, Inc. Keith R. Brown	2001	Historic and Cultural Resource Assessment Proposed Telecommunications Facility, Krusi Park, Site No. PL-906-01, High Street and Otis Drive, Alameda, California	Outside

Report Number	Author	Year	Title	Relationship to Project APE
S-030907	Christopher McMorris	2004	Caltrans Historic Bridge Inventory Update: Metal Truss, Moveable, and Steel Arch Bridges, Contract: 43A0086, Task Order: 01, EA: 43-984433, Volume I: Report and Figures	Outside
S-031849	Dana E. Supernowicz	2005	Cultural Resources Study of the West Line & Otis Project, Cingular Wireless Services Site No. SNFCCA23330C, 3001 Otis Drive, Alameda, Alameda County, California 94501	Outside
S-031849a	Dana E. Supernowicz	2005	New Tower ("NT") Submission Packet: Cingular Wireless, West Line & Otis, SNFCCA23330C	Outside
S-032165	California Department of Transportation, District 4	2004	Historic Property Survey Report for the San Leandro Bay Bridge Column Casing Protection Project in the City of Alameda, Alameda County, ALA-61 KP 29.9 (PM 18.6), EA 04-609-2R5001	Outside
S-032165a	Richard T. Fitzgerald	2004	Archaeological Survey Report, proposed corrosion prevention project on the San Leandro Bay Bridge, 04-ALA-61, PM 18.6, 02-609, EA 04-2R5001	Outside
S-032596	Randall Milliken, Jerome King, and Patricia Mikkelsen	2006	The Central California Ethnographic Community Distribution Model, Version 2.0, with Special Attention to the San Francisco Bay Area, Cultural Resources Inventory of Caltrans District 4 Rural Conventional Highways	Overview
S-033239	David Chavez	1994	Alameda Watershed, Natural and Cultural Resources: San Francisco Watershed Management Plan	Overview
S-033600	Jack Meyer and Jeff Rosenthal	2007	Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4	Overview
S-037749	Dana E. Supernowicz	2010	Collocation ("CO") Submission Packet, FCC Form 621, Van Buren CA-CNU1726	Outside
S-037749a	Historic Resource Associates	2010	Cultural Resources Study of the Van Buren Project, AT&T Site No. CNU1726, 3108 Van Buren Street, Alameda, Alameda County, California 94501	Outside
S-039695	David R. Cohen and Kathleen A. Crawford	2012	Cultural Resources Records Search and Site Visit Results for Sprint Nextel Candidate SF60XC422-A (St. Phillip Neri Catholic Church), 3108 Van Buren Street, Alameda, Alameda County, California (letter report)	Outside
S-043187	Kate Green, Michael Konzak, Adrian Praetzelis, Matthew Russell, Dana Shew, and Erica Schultz	2013	A Cultural Resources Inventory of Oakland Estuary Enhancement Project #2, Oakland & Alameda, Alameda County, California	Outside

Report Number	Author	Year	Title	Relationship to Project APE
S-043187a	Matthew A. Russell and Erica Schultz	2013	Cultural Resources Identification and Evaluation Report, Oakland Estuary Enhancement Project #2: Work Sites 6 and 8	Outside
S-043308	Lorna Billat	2013	Collocation Submission Packet, Westline-Otis Blvd, CCL04722	Outside
S-047380	Stephen T. Geist	2015	FCC Form 621 Collocation Submission Packet, Modification of Antennas at an Existing Building (Steeple), AT&T Site Number: CCL01726/CNU1726, AT&T Site Name: Van Buren, 3108 Van Buren Street, Alameda, Alameda County, California 94501, GE2G project number 310504	Outside
S-047380a	Carolyn Losee	2015	Cultural Resources Investigation for AT&T Mobility CCL01726/CNU1726 "Van Buren" 3108 Van Buren Street, Alameda City & County, California 94501 (letter report)	Outside
S-047380b	Carol Roland-Nawi	2015	FCC_2015_0515_003; CCL01726/CNU1726 "Van Buren" 3108 Van Buren Street, Alameda, Collocation	Outside
S-048927	Donald Scott Crull	1997	The Economy and Archaeology of European made Glass Beads and Manufactured Goods Used in First Contact Situations in Oregon, California and Washington	Overview
S-049780	Brian F. Byrd, Adrian R. Whitaker, Patricia J. Mikkelsen, and Jeffrey S. Rosenthal	2017	San Francisco Bay-Delta Regional Context and Research Design for Native American Archaeological Resources, Caltrans District 4	Overview
S-049780a	Julianne Polanco	2016	FHWA_2016_0615_001, Caltrans District 4 Archaeological Context	Overview
S-050898	Jennifer Blake and Charles Palmer	2017	Historic Property Survey Report for the Proposed Crosswalk Safety Enhancement Project, Alameda County, California, 04- ALA/CC 13/61/123, Unit 0660/0665 E-FIS Project Number 0J470/0414000003	Outside
S-050898a	Jennifer Blake	2017	Archaeological Survey Report for the Proposed Crosswalk Safety Enhancement Project Alameda County, California, SR 13 PM 8.432, 12.64; SR 61 PM 19.34, 19.53, 19.71, 20.00, 21.17, 21.89; SR 123 PM 3.24, 3.47, Contra Costa County, California, SR 123 PM 0.58, EA 0J470/0414000003	Outside
S-050898b	Jennifer Blake	2017	Extended Phase I Archaeological Testing for the Proposed Crosswalk Safety Enhancement Project, Various Locations in Alameda And Contra Costa Counties, California, EA 0J470/0414000003	Outside

Report Number	Author	Year	Title	Relationship to Project APE
S-050898c	Dina Ryan	2017	Extended Phase I Archaeological Testing for the Proposed Crosswalk Safety Enhancement Project (EA 0J470/0414000003), Alameda County, California, including Geoarchaeological Methods and Findings (letter report)	Outside

Source: NWIC, July 2019

4.1.2 Previously Recorded Resources

Four prehistoric shell mounds, five historic period residences and one historic period bridge were recorded within 0.5-mile of the project APE (Table 2). Except for the San Leandro Bay Bridge, which connects Bay Farm Island with Alameda Island, all of the resources are across the San Leandro Bay on Alameda Island. None of the resources are within or adjacent to the project APE. The bridge is located approximately 100 feet west of the APE at its closest point; however, it was determined not eligible for listing on the NRHP.

Table 2. Previously Recorded Cultural Resources within 0.5-Mile of the Project APE

Primary Number	Trinomial	Description	NRHP/CRHR Eligibility Status	Recorded Year (By Whom)	Relationship to Project APE
P-01-000093	CA-ALA-000316	Prehistoric archaeological site (shell mound). Completely destroyed/removed in 1909	Presumed not eligible (no integrity)	1907 (N.C. Nelson)	Approximately 0.5-mile north
P-01-000094	CA-ALA-000317	Prehistoric archaeological site (shell mound)	Insufficient information	1907 (N.C. Nelson)	Approximately 0.5-mile northwest
P-01-000095	CA-ALA-000318	Prehistoric archaeological site (shell mound)	Insufficient information	1907 (N.C. Nelson)	Approximately 0.4-mile northwest
P-01-000096	CA-ALA-000319	Prehistoric archaeological site (shell mound)	Insufficient information	1907 (N.C. Nelson)	Approximately 0.35-mile northwest
P-01-002699		Historic period building: 3104 Washington Street		1980 ([none])	Approximately 0.45-mile northwest
P-01-002700		Historic period building: 3106 Washington Street		1980 ([none])	Approximately 0.45-mile northwest
P-01-002701		Historic period building: 3110 Washington Street		1980 ([none])	Approximately 0.45-mile northwest
P-01-002702		Historic period building: 3116 Washington Street		1980 ([none])	Approximately 0.45-mile northwest

Primary Number	Trinomial	Description	NRHP/CRHR Eligibility Status	Recorded Year (By Whom)	Relationship to Project APE
P-01-002703		Historic period building: "The House That Hi Built"		1980 (Charlane Millett)	Approximately 0.4-mile northwest
P-01-011433		San Leandro Bay Bridge, Bridge No. 33-086	Determined ineligible for NR by consensus through Section 106 process – Not evaluated for CR or Local Listing (Status Code 6Y)	2002 (Alicia Langford)	Approximately 0.02-mile (100 feet) west

Source: NWIC, July 2019

4.2 NATIVE AMERICAN SCOPING

K.S. Dunbar & Associates, Inc. requested a review of the Sacred Lands File (SLF) by the Native American Heritage Commission on June 28, 2019. The NAHC sent a response on July 1, 2019, stating that a search of the SLF was completed with negative results (i.e., no sacred lands or resources important to Native Americans identified in the search; Appendix B). The NAHC provided a list of six Native American contacts that may have knowledge regarding Native American cultural resources within or near the project site.

K.S. Dunbar & Associates, Inc. mailed letters and sent emails dated June 29, 2019, to the seven Native American contacts describing the project and asking if they had knowledge regarding cultural resources of Native American origin within or near the project site (Appendix B). As of July 12, 2019, no responses have been received.

5. FIELDWORK

5.1 SURVEY METHODS

Anza Cultural Resources Specialist Sydni Kitchel conducted a pedestrian survey of the project APE on July 10, 2019. Ms. Kitchel surveyed the project site using transects spaced 10 to 20 meters apart and oriented east-west. The entire approximately 33.2-acre project site was surveyed. She also inspected the indirect APE (i.e., properties adjacent to the direct APE or in immediate line of sight).

Ms. Kitchel examined all exposed ground surface for artifacts (e.g., flaked stone tools and tool-manufacture debris, ground stone tools, ceramic sherds, fire-affected rock), ecofacts (marine shell, bone), soil discoloration that could indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historic debris (e.g., metal, glass, ceramic sherds, cut bone). Ground disturbances such as burrows and drainages were visually inspected. Photographs documenting the project site and survey are maintained by Anza in cloud storage online.

5.2 RESULTS

The project site is located at the Alameda Doolittle Landfill, which has a four-foot deep soil cap over solid waste deposited from 1953 through 1985. Surface visibility throughout the property was extremely poor (0-50 percent) due to the overgrowth of vegetation, especially in the southern portion of the APE. The area was primarily overgrown with wild foliage including wild mustard, thistle, dill, wild grasses, morning glory, wild peas and poppies. The central portion of the APE, however, provided good visibility (50-75 percent) as it was cleared for utility vehicle access to the above ground PVC water/gas pipes that run the extent of the APE. Bioturbation from active rodent activity (ground squirrels) provided some excellent surface visibility (75-100 percent). Some marine shell (clam, oyster, and mussel) and a mix of broken modern and historic period refuse items (e.g., glass, ceramic, plastic, and rusted metal can fragments; plastic PVC pipe fragments; a piece of 2x4 lumber; a golf ball) were observed in areas of rodent disturbance. Though some items appear more than 45 years old, all are clearly associated with the historic and modern period use of the landfill (i.e., in a secondary context) and do not represent potential cultural resources. The survey was negative; that is, no cultural (i.e., archaeological, historic built, or tribal cultural) resources were identified within the project APE.

The indirect APE does not possess any historic properties or districts (Section 4.1.2). There is Doolittle Drive and the Corica Park Golf Course to the south, San Leandro Bay to the north, the San Leandro Bay Bridge (previously determined not eligible for NRHP listing) to the west, and to the east Martin Luther King, Jr. Park and a semi-enclosed section of San Leandro bay, presumably used for oyster farming now or in the past.



Photograph 1. Overview from northeast corner of APE, facing south



Photograph 2. Overview of APE from western boundary, facing east.



Photograph 3. View of gas lines with north portion of APE, facing northwest.



Photograph 4. Detail of clam and mussel shells with scale.

6. MANAGEMENT RECOMMENDATIONS

The cultural resource records search, Native American scoping, and pedestrian survey identified no cultural resources within or adjacent to the project APE. The cultural resource records search, Native American scoping, and pedestrian survey identified no cultural resources within or adjacent to the project site. Anza recommends a finding of *no impact to historical resources* under CEQA and *no historic properties affected* under NEPA. No further cultural resources study is recommended; however, the following standard measures are recommended to avoid potential impacts from the unanticipated discovery of cultural resources during project related ground disturbing activities.

6.1 UNANTICIPATED DISCOVERY OF CULTURAL RESOURCES

If cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) must be contacted immediately to evaluate the find. If the discovery proves to be significant under CEQA, additional work such as data recovery excavation may be warranted.

6.2 UNANTICIPATED DISCOVERY OF HUMAN REMAINS

The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the county coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission, which will determine and notify a Most Likely Descendant. The Most Likely Descendant shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

7. REFERENCES

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Appendix A:
Records Search Summary

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-000848	Agency Nbr - Contract AA550-CT6- 52	1977	David A. Fredrickson	A Summary of Knowledge of the Central and Northern California Coastal Zone and Offshore Areas, Vol. III, Socioeconomic Conditions, Chapter 7: Historical & Archaeological Resources	The Anthropology Laboratory, Sonoma State College; Winzler & Kelly Consulting Engineers	
S-001511		1979	Stephen A. Dietz	A Preliminary Archaeological Reconnaissance of the approximately 3 acre parcel located at 2900 Central Avenue in Alameda, California (letter report).	Archaeological Consulting and Research Services, Inc.	
S-001683		1979	James C. Bard	An archaeological impact assessment of the "Wood Property" in Alameda, California (letter report)	Basin Research Associates	
S-001784	Voided - S-3131	1979	David Chavez	Preliminary Cultural Resources Identification: San Francisco Bay Study for Corps of Engineers Projects		01-000033, 01-000034, 01-000079, 01-000081, 01-000082, 01-000083, 01-000084, 01-000086, 01-000087, 01-000088, 01-000089, 01-000090, 01-000097, 01-000100, 01-000101, 01-000104, 01-000105, 01-000109, 01-000110, 01-000112, 01-000113, 01-000115, 01-010839, 07-000046, 38-001318, 41-000006, 41-000044, 41-000080, 41-000095, 41-000109, 41-000124, 41-000125, 43-000021, 48-000025, 48-000030, 48-000042, 48-000079, 48-000081, 48-000082, 48-000083, 48-000084, 48-000090, 48-000181
S-002152		1980	Stephen A. Brandt	Cultural Resources Investigation of Operating Projects, Oakland Inner Harbor.	U.S. Army Corps of Engineers	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-002458		1981	Neil Ramiller, Suzanne Ramiller, Roger Werner, and Suzanne Stewart	Overview of Prehistoric Archaeology for the Northwest Region, California Archaeological Sites Survey: Del Norte, Humboldt, Mendocino, Lake, Sonoma, Napa, Marin, Contra Costa, Alameda	Anthropological Studies Center, Sonoma State University	01-000080, 01-000084, 01-000086, 01-000104, 01-000119, 01-000124, 01-000125, 01-000126, 01-000127, 01-000137, 01-000139, 01-002053, 01-002104, 07-000047, 07-000079, 07-000080, 07-000081, 07-000082, 07-000083, 07-000092, 07-000093, 07-000105, 07-000131, 07-000146, 07-000147, 07-000148, 07-000149, 07-000150, 07-000151, 07-000168, 07-000173, 07-000175, 07-000177, 07-000185, 07-000186, 07-000190, 07-000323, 07-000440, 07-000447, 07-000448, 07-000449, 07-000462, 07-000470, 07-000474, 07-000476, 07-000481, 07-000674, 07-000710, 07-000724, 07-004621, 08-000015, 08-000018, 08-000021, 08-000090, 12-000125, 12-000175, 12-000186, 12-000194, 12-000199, 12-000202, 12-000207, 12-000209, 12-000210, 12-000211, 12-000263, 12-000264, 12-000266, 12-000336, 12-000442, 12-000445, 12-000458, 12-000824, 17-000006, 17-000026, 17-000035, 17-000072, 17-000114, 17-000177, 17-000286, 17-000287, 17-000289, 17-000290, 17-000307, 17-000320, 17-000392, 17-000407, 17-000437, 17-000446, 17-000470, 17-000531, 17-000535, 17-000546, 17-000550, 17-000551, 17-000554, 17-000572, 17-000610, 17-000639, 17-000640, 17-000673, 17-000787, 17-000812, 21-000017, 21-000034, 21-000039, 21-000051, 21-000053, 21-000057, 21-000058, 21-000106, 21-000143, 21-000163, 21-000177, 21-000217, 21-000221, 21-000235, 21-000242, 21-000245, 21-000252, 21-000262, 21-000283, 21-000290, 21-000291, 21-000295, 21-000332, 21-000335, 21-000342, 21-000346, 21-000347, 21-000368, 21-000369, 21-000370, 21-000651, 21-000653, 21-002539, 23-000143, 23-000387, 23-000450,

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
						23-000475, 23-000478, 23-000492, 23-000534, 23-000535, 23-000536, 23-000537, 23-000539, 23-000590, 23-000786, 23-000789, 23-000790, 23-000791, 23-000792, 23-000793, 23-000796, 23-000835, 23-001034, 23-001060, 23-001063, 23-001520, 23-002898, 23-002915, 23-002936, 23-002945, 28-000015, 28-000027, 28-000028, 28-000029, 28-000032, 28-000045, 28-000061, 28-000063, 28-000066, 28-000077, 28-000088, 28-000092, 28-000093, 28-000097, 28-000123, 28-000125, 28-000150, 28-000199, 28-000209, 28-000218, 28-000222, 28-000310, 28-000311, 28-000329, 28-000330, 28-000362, 28-000418, 28-000419, 28-000420, 28-000421, 28-000422, 28-000428, 28-000828, 28-000912, 49-000073, 49-000079, 49-000112, 49-000135, 49-000194, 49-000228, 49-000264, 49-000265, 49-000271, 49-000291, 49-000292, 49-000295, 49-000318, 49-000329, 49-000330, 49-000340, 49-000342, 49-000360, 49-000362, 49-000363, 49-000369, 49-000371, 49-000423, 49-000424, 49-000434, 49-000483, 49-000512, 49-000521, 49-000548, 49-000620, 49-000653, 49-000671, 49-000682, 49-000683, 49-000730, 49-000731, 49-000732, 49-000733, 49-000846, 49-000860, 49-000887, 49-000913, 49-000914, 49-000915, 49-000916, 49-000917, 49-000959, 49-000970, 49-000976, 49-000978, 49-000981, 49-000982, 49-000983, 49-000990, 49-000992, 49-001081, 49-001082, 49-001083, 49-001084, 49-001085, 49-001086, 49-001087, 49-001109, 49-001121
S-002458a		1982	Suzanne Ramiller	Prehistoric Archaeology Overview Northwest Region; California Archaeological Inventory, Volume I: Humboldt and Del Norte Counties	Anthropological Studies Center, Sonoma State University	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-002458b		1982	Roger H. Werner	Archaeological Overview of Mendocino and Lake Counties	Anthropological Studies Center, Sonoma State University	
S-002458c		1982	Suzanne Stewart	Prehistoric Archaeology Overview Northwest Region; California Archaeological Inventory, Volume I: Napa and Sonoma Counties	Anthropological Studies Center, Sonoma State University	
S-002458d		1982	Suzanne B. Stewart	Archaeological Overview of Alameda, Contra Costa, and Marin Counties	Anthropological Studies Center, Sonoma State University	
S-002458e		1982	Neil Ramiller	Environmental Overview of The Northwest Region	Anthropological Studies Center, Sonoma State University	
S-007903	Other - P.O. 951 1143 EA	1985	David Chavez	Cultural Resources Evaluation for the East Bay Municipal Utility District Infiltration/Inflow Project (P. O. 951 1143 EA)	David Chavez & Associates	01-000026, 01-000029, 01-000031, 01-000035, 01-000036, 01-000038, 01-000039, 01-000042, 01-000043, 01-000069, 01-000072, 01-000074, 01-000081, 01-000082, 01-000083, 01-000084, 01-000086, 01-000087, 01-000088, 01-000089, 01-000090, 01-000091, 01-000092, 01-000093, 01-000094, 01-000095, 01-000096, 01-000097, 01-000098, 01-000099, 01-000120, 01-000233, 01-010839, 07-000046, 07-000069, 07-000094, 07-000096, 07-000180
S-009462		1977	Teresa Ann Miller	Identification and Recording of Prehistoric Petroglyphs in Marin and Related Bay Area Counties	San Francisco State University	07-000323, 21-000087, 21-000376, 21-000378, 21-000379, 21-000380, 21-000381, 21-000382, 21-000383, 21-000384, 21-000386, 21-000387, 21-000388, 21-000389, 21-000390, 21-000391, 21-000392, 21-000393, 21-000394, 21-000395, 21-000396, 21-000397, 21-000398, 21-000399, 21-000400, 21-000401, 21-000402, 21-000546, 23-000434, 23-000789, 23-000790, 49-000629, 49-000785, 49-000787
S-009583		1978	David W. Mayfield	Ecology of the Pre-Spanish San Francisco Bay Area	San Francisco State University	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-009795		1986	Thomas Lynn Jackson	Late Prehistoric Obsidian Exchange in Central California	Stanford University	06-000025, 07-000047, 07-000080, 07-000188, 07-000440, 17-000320, 17-000601, 21-000163, 21-000218, 21-000235, 21-000242, 21-000283, 21-000290, 21-000368, 21-000423, 21-000628, 23-001589, 23-001659, 23-003068, 23-003119, 28-000015, 28-000068, 28-000199, 28-000205, 28-000828, 49-000135, 49-000360, 49-000423, 49-000424, 49-000518, 49-000521, 49-000533, 49-000536, 49-000558, 49-000801, 57-000114
S-016077		1994	David Chavez and Jan M. Hupman	Archaeological Resources Investigations for the City of Alameda Sanitary Sewer Relief Line Locations, Alameda County, California	David Chavez & Associates	
S-016660		1992	Jeffrey B. Fentress	Prehistoric Rock Art of Alameda and Contra Costa Counties, California	California State University, Hayward	01-000035, 01-000039, 01-000071, 01-000080, 01-000128, 01-000137, 01-000138, 01-000144, 01-000195, 01-000198, 01-000199, 01-002112, 07-000029, 07-000094, 07-000189, 07-000193, 07-000212, 07-000216, 07-000219, 07-000230, 07-000242, 07-000255, 07-000260, 07-000271, 07-000301, 07-000302, 07-000323, 07-000344, 07-000345, 07-000346, 07-000347, 07-000348, 07-000356, 07-000362, 07-000374, 07-000725, 07-000726, 07-000727, 07-000730, 07-000734, 07-000736, 07-000738, 07-000739
S-017773	Submitter - Contract #04E634-EP; Submitter - Task Order #9	1992	Angela M. Banet	Contract 04E634-EP, Task Order #9, Historic Map Review for CALTRANS Maintenance Facilities (letter report)	Basin Research Associates, Inc.	
S-017835		1975	Judy Myers Suchey	Biological Distance of Prehistoric Central California Populations Derived from Non-Metric Traits of the Cranium	University of California, Riverside	01-000086, 01-000104, 01-000105, 06-000025, 07-000080, 07-000081, 07-000083, 07-000087, 21-000017, 21-000193, 21-000242, 21-000252, 48-000010, 57-000145

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-018217		1996	Glenn Gmoser	Cultural Resource Evaluations for the Caltrans District 04 Phase 2 Seismic Retrofit Program, Status Report	California Department of Transportation	01-000014, 01-000023, 01-000227, 07-000108, 07-000119, 38-000002, 38-000004, 41-000273, 43-000106, 43-000297, 43-000624, 43-001078, 44-000010, 44-000201, 44-000300, 49-000195
S-020395		1998	Donna L. Gillette	PCNs of the Coast Ranges of California: Religious Expression or the Result of Quarrying?	California State University, Hayward	07-000094, 07-000323, 12-000050, 17-000071, 17-001315, 21-000087, 21-000376, 21-000378, 21-000379, 21-000381, 21-000382, 21-000383, 21-000384, 21-000386, 21-000387, 21-000388, 21-000389, 21-000390, 21-000391, 21-000392, 21-000393, 21-000394, 21-000395, 21-000396, 21-000397, 21-000398, 21-000399, 21-000400, 21-000401, 21-000402, 21-000419, 21-000433, 21-000546, 21-000620, 21-000621, 21-000624, 21-000661, 23-000434, 23-000809, 23-000810, 23-001698, 23-001725, 23-001792, 23-001798, 23-001799, 23-001803, 23-001804, 23-001930, 23-001942, 23-001950, 23-001963, 35-000013, 43-000067, 43-000080, 43-000287, 43-000289, 43-000504, 49-000046, 49-000240, 49-000533, 49-000550, 49-000629, 49-000785, 49-000787, 49-000868, 49-000960, 49-000975, 49-001004, 49-001087, 49-001239, 49-002121
S-029411	IC Record Search Nbr - 01-0945	2001	Thomas M. Origer	Record Search Results for a Proposed American Tower Corporation Site (Alameda Golf Course), Alameda, Alameda County, California (letter report)	Michael Brandman Associates	
S-029546	Submitter - BMI Project No. 01S-882	2001	Eleanor H. Derr and Keith R. Brown	Historic and Cultural Resource Assessment Proposed Telecommunications Facility, Krusi Park, Site No. PL-906-01, High Street and Otis Drive, Alameda, California.	Brown & Mills, Inc.	
S-030907	Caltrans - EA 43-984433	2004	Christopher McMorris	Caltrans Historic Bridge Inventory Update: Metal Truss, Moveable, and Steel Arch Bridges, Contract: 43A0086, Task Order: 01, EA: 43-984433, Volume I: Report and Figures	JRP Historical Consulting	01-003158, 01-003190, 01-010835, 01-011433, 23-004262, 27-001805, 28-001020, 35-000383, 38-001339, 38-002455, 38-004878, 49-002862, 49-002864, 49-002865, 49-002866, 49-002867, 49-002870, 49-004522

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-031849	OHP PRN - FCC051021D	2005	Dana E. Supernowicz	Cultural Resources Study of the West Line & Otis Project, Cingular Wireless Services Site No. SNFCCA23330C, 3001 Otis Drive, Alameda, Alameda County, California 94501	Historic Resource Associates	
S-031849a		2005	Dana Supernowicz	New Tower ("NT") Submission Packet: Cingular Wireless, West Line & Otis, SNFCCA2330C	Historic Resource Associates	
S-032165	Caltrans - EA 04-609-2R5001	2004		Historic Property Survey Report for the San Leandro Bay Bridge Column Casing Protection Project in the City of Alameda, Alameda County, ALA-61 KP 29.9 (PM 18.6), EA 04-609-2R5001	California Department of Transportation, District 4	01-011433
S-032165a		2004	Richard T. Fitzgerald	Archaeological Survey Report, proposed corrosion prevention project on the San Leandro Bay Bridge, 04-ALA-61, PM 18.6, 02-609, EA 04-2R5001	Caltrans	
S-032596	Caltrans - EA No. 447600; Other - Contract #04A2098	2006	Randall Milliken, Jerome King, and Patricia Mikkelsen	The Central California Ethnographic Community Distribution Model, Version 2.0, with Special Attention to the San Francisco Bay Area, Cultural Resources Inventory of Caltrans District 4 Rural Conventional Highways	Consulting in the Past; Far Western Anthropological Research Group, Inc.	
S-033239		1994	David Chavez	Alameda Watershed, Natural and Cultural Resources: San Francisco Watershed Management Plan	Environmental Science Associates	01-010841

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-033600	Agency Nbr - Contract No. 04A2098; Caltrans - EA No. 447600	2007	Jack Meyer and Jeff Rosenthal	Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4	Far Western Anthropological Research Group, Inc.	01-000001, 01-000002, 01-000014, 01-000063, 01-000064, 01-000067, 01-000080, 01-000124, 01-000139, 01-000140, 01-001795, 01-002110, 01-002160, 01-002162, 01-002245, 07-000019, 07-000024, 07-000037, 07-000047, 07-000075, 07-000079, 07-000088, 07-000089, 07-000108, 07-000182, 07-000185, 07-000186, 07-000217, 07-000239, 07-000401, 07-000721, 21-000010, 21-000048, 21-002615, 28-000009, 28-000028, 28-000301, 28-000967, 38-000006, 38-000028, 38-000101, 38-000102, 38-000119, 41-000080, 41-000284, 43-000016, 43-000189, 43-000296, 43-000308, 43-000310, 43-000423, 43-000424, 43-000448, 43-000451, 43-000485, 43-000561, 43-000604, 43-000608, 43-000614, 43-000623, 43-001015, 43-001058, 43-001080, 43-001163, 43-001194, 43-001576, 48-000007, 48-000157
S-037749		2010	Dana E. Supernowicz	Collocation ("CO") Submission Packet, FCC Form 621, Van Buren CA-CNU1726	Earth Touch, Inc.	01-011051
S-037749a		2010		Cultural Resources Study of the Van Buren Project, AT&T Site No. CNU1726, 3108 Van Buren Street, Alameda, Alameda County, California 94501	Historic Resource Associates	
S-039695		2012	David R. Cohen and Kathleen A. Crawford	Cultural Resources Records Search and Site Visit Results for Sprint Nextel Candidate SF60XC422-A (St. Phillip Neri Catholic Church), 3108 Van Buren Street, Alameda, Alameda County, California (letter report)	Michael Brandman Associates	01-011051
S-043187		2013	Kate Green, Michael Konzak, Adrian Praetzellis, Matthew Russell, Dana Shew, and Erica Schultz	A Cultural Resources Inventory of Oakland Estuary Enhancement Project #2, Oakland & Alameda, Alameda County, California	Anthropological Studies Center, Sonoma State University; Garcia and Associates	
S-043187a		2013	Matthew A. Russell and Erica Schultz	Cultural Resources Identification and Evaluation Report, Oakland Estuary Enhancement Project #2: Work Sites 6 and 8	Garcia and Associates	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-043308		2013	Lorna Billat	Collocation Submission Packet, Westline-Otis Blvd, CCL04722	EarthTouch, Inc.	
S-047380	OHP PRN - FCC_2015_0515_003 ; Submitter - CCL01726/CNU1726	2015	Stephen T. Geist	FCC Form 621 Collocation Submission Packet, Modification of Antennas at an Existing Building (Steeple), AT&T Site Number: CCL01726/CNU1726, AT&T Site Name: Van Buren, 3108 Van Buren Street, Alameda, Alameda County, California 94501, GE2G project number 310504	Geist Engineering & Environmental Group Inc.	01-011051
S-047380a		2015	Carolyn Losee	Cultural Resources Investigation for AT&T Mobility CCL01726/CNU1726 "Van Buren" 3108 Van Buren Street, Alameda City & County, California 94501 (letter report)	Archaeological Resources Technology	
S-047380b		2015	Carol Roland-Nawi	FCC_2015_0515_003; CCL01726/CNU1726 "Van Buren" 3108 Van Buren Street, Alameda, Collocation	Office of Historic Preservation	
S-048927		1997	Donald Scott Crull	The Economy and Archaeology of European-made Glass Beads and Manufactured Goods Used in First Contact Situations in Oregon, California and Washington	University of Sheffield, England	
S-049780	OTIS Report Number - FHWA_2016_0615_0 01	2017	Brian F. Byrd, Adrian R. Whitaker, Patricia J. Mikkelsen, and Jeffrey S. Rosenthal	San Francisco Bay-Delta Regional Context and Research Design for Native American Archaeological Resources, Caltrans District 4	California Department of Transportation, District 4	
S-049780a		2016	Julianne Polanco	FHWA_2016_0615_001, Caltrans District 4 Archaeological Context	Office of Historic Preservation	
S-050898	Agency Nbr - EA 0J470; Agency Nbr - E-FIS 0414000003	2017	Jennifer Blake and Charles Palmer	Historic Property Survey Report for the Proposed Crosswalk Safety Enhancement Project, Alameda County, California, 04-ALA/CC 13/61/123, Unit 0660/0665 E-FIS Project Number 0J470/0414000003	California Department of Transportation, District 4	01-012022
S-050898a		2017	Jennifer Blake	Archaeological Survey Report for the Proposed Crosswalk Safety Enhancement Project Alameda County, California, SR 13 PM 8.432, 12.64; SR 61 PM 19.34, 19.53, 19.71, 20.00, 21.17, 21.89; SR 123 PM 3.24, 3.47, Contra Costa County, California, SR 123 PM 0.58, EA 0J470/0414000003	California Department of Transportation, District 4	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-050898b		2017	Jennifer Blake	Extended Phase I Archaeological Testing for the Proposed Crosswalk Safety Enhancement Project, Various Locations in Alameda And Contra Costa Counties, California, EA 0J470/0414000003	California Department of Transportation, District 4	
S-050898c		2017	Dina Ryan	Extended Phase I Archaeological Testing for the Proposed Crosswalk Safety Enhancement Project (EA 0J470/0414000003), Alameda County, California, including Geoarchaeological Methods and Findings (letter report)	Garcia and Associates	

Appendix B: Native American Scoping



K.S. Dunbar & Associates, Inc.
Environmental Engineering
45375 Vista Del Mar
Temecula, CA 92590-4314
(951) 699-2082
Cell: (949) 412-2634
ksdpe67@gmail.com

Erica D. Dunbar, President
Keith S. Dunbar, P.E., BCEE, Hon.D.WRE., F. ASCE
Chief Executive Officer

June 28, 2019

Christina Snider, Executive Secretary
California Native American Heritage Commission
1550 Harbor Boulevard, Room 100
West Sacramento, California 95691

Request for a Sacred Lands File Search
NCPA Solar Project 1 – Alameda Doolittle Landfill Facility
Northern California Power Agency

Dear Christina:

The Northern California Power Agency (NCPA) intends to implement its NCPA Solar Project 1 – Alameda Doolittle Landfill Facility. The project is described in the attachments to this letter.

We respectfully request that you complete a search of your Sacred Lands files for this Project. A completed request form as well as maps showing the project elements are attached for your use in the search.

We also respectfully request that you provide us with a list of tribes and individuals that you believe might have cultural resources information regarding the project area.

It would be greatly appreciated if you could email your response to ksdpe67@gmail.com.

If you have any questions concerning this request, please contact me.

Sincerely,

Keith S. Dunbar, P.E., BCEE, Hon.D.WRE., F. ASCE

Attachments

pc: Ron Yuen
Director of Engineering, Generation Services
Northern California Power Agency
651 Commerce Drive,
Roseville California 95678

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission

1550 Harbor Blvd, Suite 100

West Sacramento, CA 95691

916-373-3710

FAX: 916-373-5471

nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: NCPA Solar Project 1 – Alameda – Doolittle Landfill

County: Alameda

USGS Quadrangle Name: Oakland, East, California

See attachment for detailed project location.

Company/Firm/Agency: K.S. Dunbar & Associates, Inc.

Street Address: 45375 Vista Del Mar

City: Temecula

Zip: 92590-4314

Phone: 951-699-2082

Email: ksdpe67@gmail.com

Project Description: The objective of the NCPA Solar Project 1 is to develop a fleet of Photovoltaic (PV) Solar Power Plants throughout participating member service territories to be completed and placed in service by the end of 2019. The plants will be managed by the Northern California Power Agency (NCPA) as a single project to be owned and operated by a third-party provider through a power purchase agreement (PPA). After the initial 5 – 7 years of operation, NCPA plans to purchase the plants.

The project will be executed in three phases:

- ❖ Phase 1 – Determine member interest and requirements and identify potential sites.
- ❖ Phase 2 – Site selection and screening, plan development and selection of a third-party provider to fulfill design, construction and operation through a PPA.
- ❖ Phase 3 – Construction and operation per the PPA.

NCPA has now completed Phase 1 and the site selection and screening portion of Phase 2. Burns & McDonnell was retained by NCPA to complete Phase 2 Site Screening, Plan Development, and Procurement services for each site selected by the member agencies. The City of Alameda selected a site at its Doolittle Landfill (Figure 1). That site is the subject of this Notification.

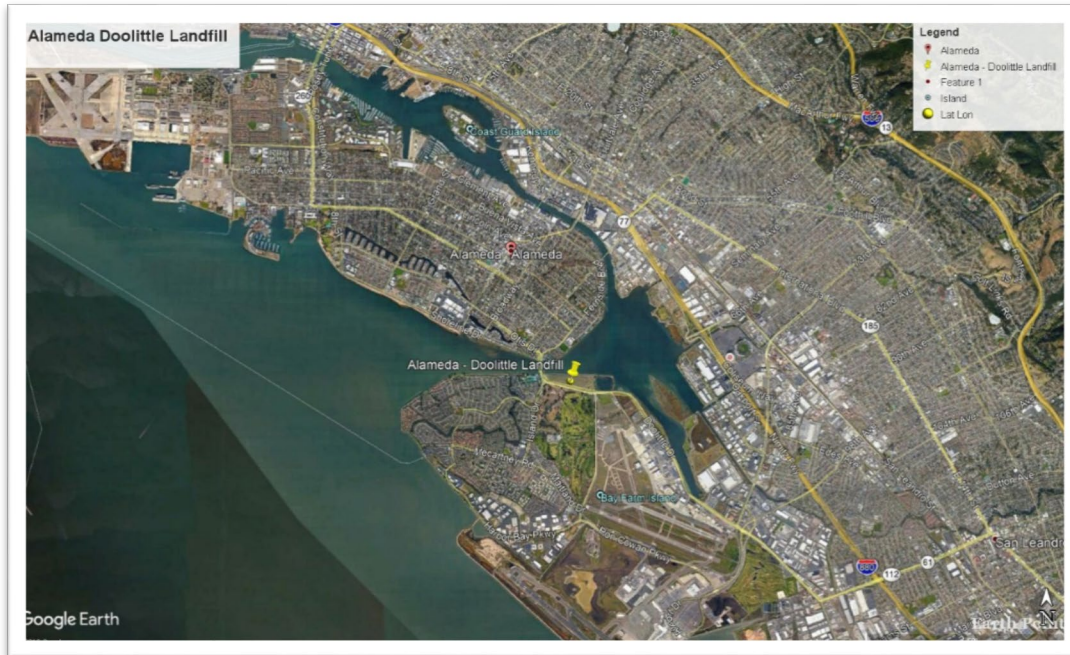


Figure 1 Alameda – Doolittle Landfill Project Location

The Project site is located on a 33.2-acre closed Class III landfill. The site is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive and on the east by Martin Luther King Jr. Regional Shoreline Park. The proposed technology type for the solar project is horizontal single axis tracking (HSAT). As shown on Figure 2, solar panels would be placed on 11.2 acres of the site. The total installed capacity would be approximately 2.60 MW_{dc}.

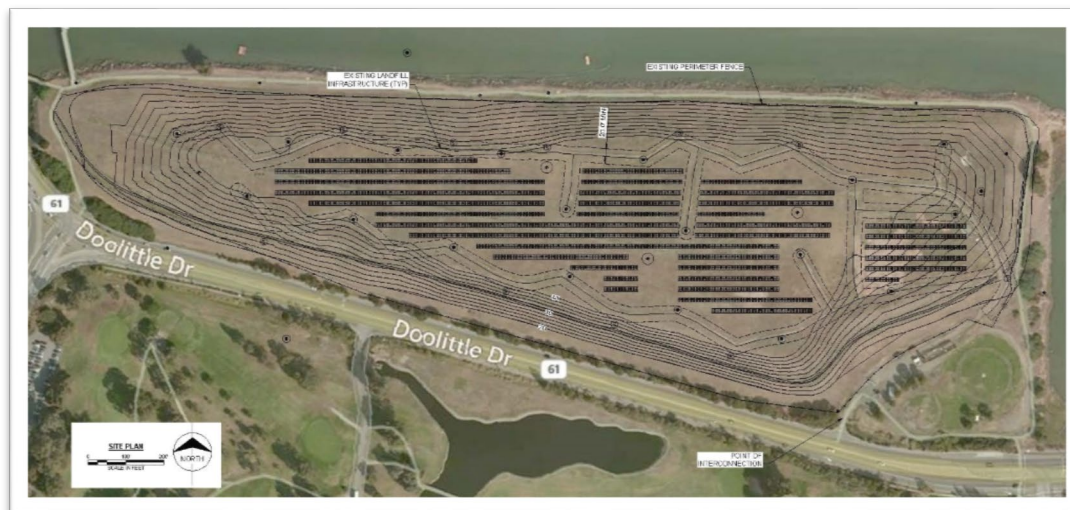


Figure 2 Proposed Solar Array Locations

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: <http://www.nahc.ca.gov>



July 1, 2019

Keith Dunbar
K. S. Dunbar & Associates, Inc.

VIA Email to: ksdpe67@gmail.com

RE: **NCPA Solar Project 1 – Alameda – Doolittle Landfill Project**, City of Alameda;
Oakland West USGS Quadrangle, Alameda County, California.

Dear Mr. Dunbar:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. The absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton
Gayle Totton, B.S., M.A., Ph.D.
Associate Governmental Program Analyst

Attachment

**Native American Heritage Commission
Native American Contact List
Alameda County
7/1/2019**

Amah Mutsun Tribal Band

Valentin Lopez, Chairperson	
P.O. Box 5272	Costanoan
Galt, CA, 95632	Northern Valley
Phone: (916) 743 - 5833	Yokut
vlopez@amahmutsun.org	

***Amah Mutsun Tribal Band of
Mission San Juan Bautista***

Irenne Zwielerle, Chairperson	
789 Canada Road	Costanoan
Woodside, CA, 94062	
Phone: (650) 851 - 7489	
Fax: (650) 332-1526	
amahmutsuntribal@gmail.com	

***Indian Canyon Mutsun Band of
Costanoan***

Ann Marie Sayers, Chairperson	
P.O. Box 28	Costanoan
Hollister, CA, 95024	
Phone: (831) 637 - 4238	
ams@indiancanyon.org	

***Muwekma Ohlone Indian Tribe
of the SF Bay Area***

Charlene Nijmeh, Chairperson	
20885 Redwood Road, Suite 232	Costanoan
Castro Valley, CA, 94546	
Phone: (408) 464 - 2892	
cnijmeh@muwekma.org	

North Valley Yokuts Tribe

Katherine Erolinda Perez, Chairperson	
P.O. Box 717	Costanoan
Linden, CA, 95236	Northern Valley
Phone: (209) 887 - 3415	Yokut
canutes@verizon.net	

The Ohlone Indian Tribe

Andrew Galvan,	
P.O. Box 3388	Bay Miwok
Fremont, CA, 94539	Ohlone
Phone: (510) 882 - 0527	Patwin
Fax: (510) 687-9393	Plains Miwok
chochenyo@AOL.com	

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed NCPA Solar Project 1 - Doolittle Landfill Project, Alameda County.

City of Alameda
Planning Division

2263 Santa Clara Avenue, Room 190
Alameda, California 94501



AB 52 Tribal Consultation Notification

Date: June 29, 2019
To: Katherine Erolinda Perez
Tribe: Northern Valley Yokuts Tribe
Subject: Notification for Tribal Consultation
Project Name: NCPA Solar Project 1 – Alameda Doolittle Landfill Site
Lead Agency: City of Alameda

Introduction:

The Northern California Power Agency (NCPA) and the City of Alameda is proposing the NCPA Solar Project 1 – Alameda Doolittle Landfill Site Project which may be located in a geographical area that is traditionally and culturally affiliated with the Northern Valley Yokuts Tribe.

Request for Consultation:

California law under Assembly Bill 52 (Public Resources Code §21080.3.1) now allows California Native American tribes 30 days to request consultation regarding possible significant effects that implementation of the proposed project may have on tribal cultural resources. This request must be in writing to the City of Alameda and identify a lead contact person. The City will begin the consultation process within 30 days of receiving the tribes request for consultation. The consultation may include discussion concerning the type of environmental review necessary for the project, the significance of tribal cultural resources discovered, the significance of the project's impacts on tribal cultural resources, and, if necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend.

The consultation does not limit the ability of the tribe to submit information to the City of Alameda regarding the significance of the tribal resources, the significance of the project's impact on tribal cultural resources, or any measures the tribe feels are appropriate to mitigate the potential impacts. If you wish to informally submit information, written comments may be sent to:

Keith S. Dunbar, P.E., BCEE, Hon.D.WRE., F. ASCE
K.S. Dunbar & Associates, Inc.
Environmental Engineering
45375 Vista Del Mar
Temecula, California 92590-4314
(951) 699-2082
E-Mail: ksddpe67@gmail.com

Confidential information transmitted electronically cannot be ensured. The City of Alameda recommends that transmittal of confidential information, such as the specific location of a cultural resource, is done by formal letter, in person, or over the telephone, the tribes request to consult on the above-named project must be received no later than 30 days from the date of this notification.

Overview of the Proposed Project

The objective of the NCPA Solar Project 1 is to develop a fleet of Photovoltaic (PV) Solar Power Plants throughout participating member service territories to be completed and placed in service by the end of 2019. The plants will be managed by the Northern California Power Agency (NCPA) as a single project to be owned and operated by a third-party provider through a power purchase agreement (PPA). After the initial 5 – 7 years of operation, NCPA plans to purchase the plants.

The project will be executed in three phases:

- ❖ Phase 1 – Determine member interest and requirements and identify potential sites.
- ❖ Phase 2 – Site selection and screening, plan development and selection of a third-party provider to fulfill design, construction and operation through a PPA.
- ❖ Phase 3 – Construction and operation per the PPA.

NCPA has now completed Phase 1 and the site selection and screening portion of Phase 2. Burns & McDonnell was retained by NCPA to complete Phase 2 Site Screening, Plan Development, and Procurement services for each site selected by the member agencies. The City of Alameda selected a site at its Doolittle Landfill (Figure 1). That site is the subject of this Notification.

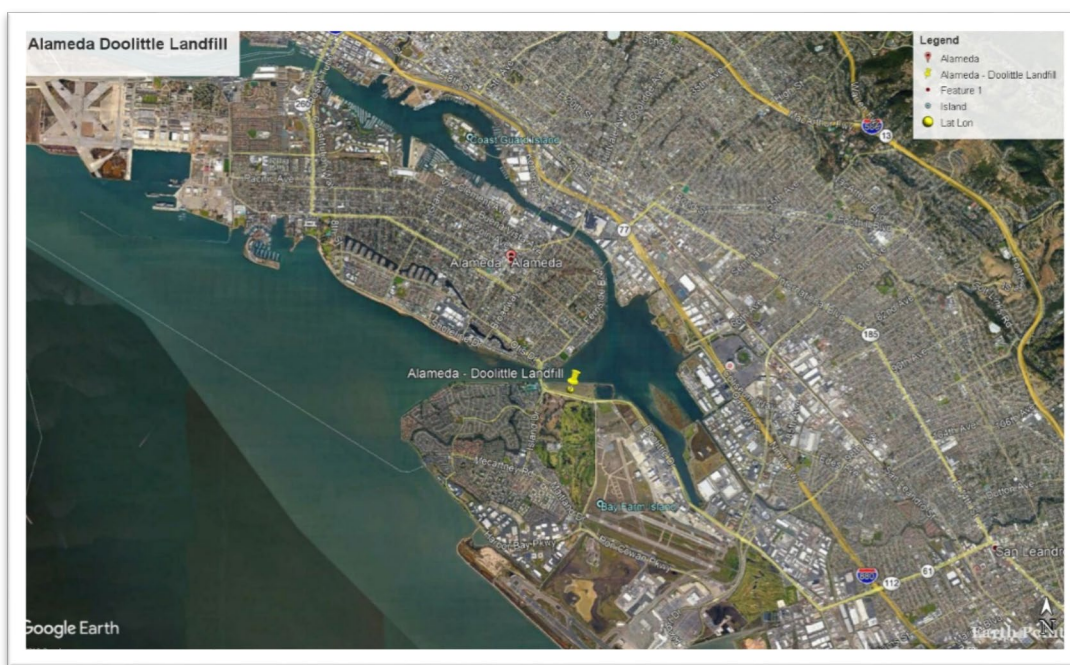


Figure 1 Alameda – Doolittle Landfill Project Location

The Project site is located on a 33.2-acre closed Class III landfill. The site is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive and on the east by Martin Luther King Jr. Regional Shoreline Park. The proposed technology type for the solar project is horizontal single axis tracking (HSAT). As shown on Figure 2, solar panels would be placed on 11.2 acres of the site. The total installed capacity would be approximately 2.60 MW_{dc}.



Figure 2 Proposed Solar Array Locations

City of Alameda
Planning Division

2263 Santa Clara Avenue, Room 190
Alameda, California 94501



AB 52 Tribal Consultation Notification

Date: June 29, 2019
To: Tony Cerda, Chairperson
Tribes: Costanoan Rumsen Carmel Tribe
Subject: Notification for Tribal Consultation
Project Name: NCPA Solar Project 1 – Alameda Doolittle Landfill Site
Lead Agency: City of Alameda

Introduction:

The Northern California Power Agency (NCPA) and the City of Alameda is proposing the NCPA Solar Project 1 – Alameda Doolittle Landfill Site Project which may be located in a geographical area that is traditionally and culturally affiliated with the Costanoan Rumsen Carmel Tribe.

Request for Consultation:

California law under Assembly Bill 52 (Public Resources Code §21080.3.1) now allows California Native American tribes 30 days to request consultation regarding possible significant effects that implementation of the proposed project may have on tribal cultural resources. This request must be in writing to the City of Alameda and identify a lead contact person. The City will begin the consultation process within 30 days of receiving the tribes request for consultation. The consultation may include discussion concerning the type of environmental review necessary for the project, the significance of tribal cultural resources discovered, the significance of the project's impacts on tribal cultural resources, and, if necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend.

The consultation does not limit the ability of the tribe to submit information to the City of Alameda regarding the significance of the tribal resources, the significance of the project's impact on tribal cultural resources, or any measures the tribe feels are appropriate to mitigate the potential impacts. If you wish to informally submit information, written comments may be sent to:

Keith S. Dunbar, P.E., BCEE, Hon.D.WRE., F. ASCE
K.S. Dunbar & Associates, Inc.
Environmental Engineering
45375 Vista Del Mar
Temecula, California 92590-4314
(951) 699-2082
E-Mail: ksddpe67@gmail.com

Confidential information transmitted electronically cannot be ensured. The City of Alameda recommends that transmittal of confidential information, such as the specific location of a cultural resource, is done by formal letter, in person, or over the telephone, the tribes request to consult on the above-named project must be received no later than 30 days from the date of this notification.

Overview of the Proposed Project

The objective of the NCPA Solar Project 1 is to develop a fleet of Photovoltaic (PV) Solar Power Plants throughout participating member service territories to be completed and placed in service by the end of 2019. The plants will be managed by the Northern California Power Agency (NCPA) as a single project to be owned and operated by a third-party provider through a power purchase agreement (PPA). After the initial 5 – 7 years of operation, NCPA plans to purchase the plants.

The project will be executed in three phases:

- ❖ Phase 1 – Determine member interest and requirements and identify potential sites.
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- ❖ Phase 3 – Construction and operation per the PPA.

NCPA has now completed Phase 1 and the site selection and screening portion of Phase 2. Burns & McDonnell was retained by NCPA to complete Phase 2 Site Screening, Plan Development, and Procurement services for each site selected by the member agencies. The City of Alameda selected a site at its Doolittle Landfill (Figure 1). That site is the subject of this Notification.

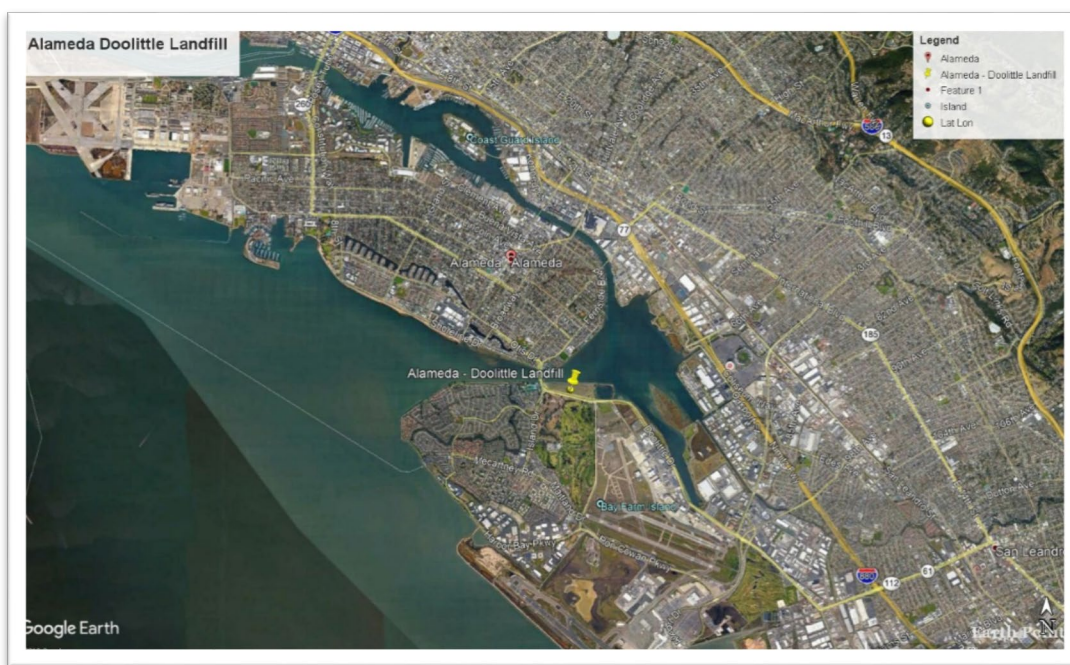


Figure 1 Alameda – Doolittle Landfill Project Location

The Project site is located on a 33.2-acre closed Class III landfill. The site is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive and on the east by Martin Luther King Jr. Regional Shoreline Park. The proposed technology type for the solar project is horizontal single axis tracking (HSAT). As shown on Figure 2, solar panels would be placed on 11.2 acres of the site. The total installed capacity would be approximately 2.60 MW_{dc}.



Figure 2 Proposed Solar Array Locations

Appendix G

Burns & McDonnell Phase 2B Report



July 10, 2018

Mr. Jim Dorrance and Mr. Ron Yuen
Northern California Power Agency
651 Commerce Drive
Roseville, CA 95678

Re: NCPA – Alameda Phase 2B Site Screening and Fatal Flaw Evaluation

Dear Mr. Dorrance and Mr. Yuen:

Burns & McDonnell Engineering Company, Inc. (“Burns & McDonnell”) was retained by Northern California Power Agency (“NCPA”) to conduct Phase 2 site screening and plan development (“Study”) for participating members of the NCPA Solar Project 1. The Study analyzes candidate sites for the potential development of a fleet of Photovoltaic Solar Power Plants (the “Project”) in Northern California. Phase 2 site screening and plan development activities are broken into the following four phases:

1. Phase 2A – Site Selection
2. Phase 2B – Site Screening and Fatal Flaw Evaluation
3. Phase 2C – Plan Development
4. Phase 2D – Procurement

This letter report provides an overview of the Study, the key assumptions utilized by Burns & McDonnell, and the major results and conclusions from the analyses conducted.

STUDY BACKGROUND

NCPA was established by a group of locally owned electric utilities, including municipalities, as a not-for-profit rural electric cooperative to provide such services as the purchase, aggregation, scheduling and management of electrical energy. NCPA and select participating members are evaluating the potential development of solar power plant projects, utilizing photovoltaic (“PV”) technologies to generate power for its adjacent communities.

NCPA and its local member, Alameda Municipal Power (“Alameda”), retained Burns & McDonnell to conduct Phase 2B analyses to evaluate the parcels of land located within the City of Alameda to determine if any fatal flaws were present and if the site would be suitable for a solar project given a variety of environmental, constructability and other development requirements for the Project. Phase 2A was not conducted by Burns & McDonnell. The parcel of land evaluated as part of this Study is shown below in Figure 1: Site Overview Map.

Mr. Jim Dorrance and Mr. Ron Yuen
Northern California Power Agency
July 10, 2018
Page 2

Figure 1: Site Overview Map



As shown on Figure 1: Site Overview Map, the Project site consists of a closed Class III solid waste disposal site (known as Alameda Doolittle Landfill) in the northeastern extent of Bay Farm Island. Alameda Doolittle Landfill began operation in 1953 and was closed in 1985. The Alameda site is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive, and on the east by MLK Regional Shoreline (Doolittle Pond). The proposed technology is a fixed tilt solar array system with ballasted racking installed at grade to prevent disturbance of the landfill gas system and/or landfill cap that is installed at a four-foot depth. A detailed site map of the Project site is provided in Appendix A.

SITE EVALUATION

Burns & McDonnell evaluated the Alameda site against a variety of criteria organized into four major categories including environmental, site development, constructability and project development. The following sections describes the findings of each of the major criteria



Mr. Jim Dorrance and Mr. Ron Yuen
Northern California Power Agency
July 10, 2018
Page 3

regarding the site. Additional data for criteria not discussed in the below sections can be found in Appendix B.

Environmental

Evaluation categories for the environmental criteria included analysis of wetlands, hydrology, cultural resources and sensitive species present, amongst others. Burns and McDonnell reviewed the site against each category at a high-level, using GIS and publicly available data.

The project team did not discover any obvious fatal flaws during the environmental analyses. The site is located in an “area with minimal flood hazard”, which according to the FEMA flood zone designations is an area above the 500-year flood level. The nearest hydrologic feature is the San Leandro Bay (a body of water in the San Francisco Bay) which borders the site to the north. According to National Wetlands Inventory (NWI) data, riverine wetlands are present across the site. However, the wetlands appear to directly align with the gas collection piping that currently exists above grade. Burns & McDonnell does not expect that wetlands are actually present onsite, however a site visit by a wetlands specialist is required to confirm this. If wetlands are observed to be onsite, a formal wetlands delineation will be required prior to development of the Project.

The eastern border of the site touches on the boundary of the MLK Regional Shoreline and associated wetlands, however is outside the California Coastal Zone. Query results from the California Natural Diversity Database (CNDDDB), which can be seen in Appendix C, resulted in several overlapping species buffers in relation to the proposed Project site and in the adjacent San Leandro Bay; however, it is not anticipated that development of the Project would impact these species as no occurrences were recorded directly onsite. During discussions with Alameda, it was noted that burrowing owls were once present onsite. A site visit by a wildlife biologist is recommended to confirm if burrowing owls are present onsite.

Site Development

Evaluation categories for the site development criteria included identification and/or analysis of Williamson Act governed lands, zoning, ownership type and permitting considerations, amongst others. Burns & McDonnell reviewed the site against each category at a high-level, using GIS and publicly available data.

The project team did not discover any obvious fatal flaws during the site development analyses. The site is not located on any Williamson Act governed land. The Chuck Corica Municipal Golf Complex is located approximately 130 feet across Doolittle Drive to the south, and the property line on the northwest edge of Oakland International Airport is 320 feet to the southeast. Amelia Earhart Elementary School is located 1,000-feet to the southwest of the site and the nearest

Mr. Jim Dorrance and Mr. Ron Yuen
Northern California Power Agency
July 10, 2018
Page 4

residence sits west of the site, opposite Doolittle Drive, approximately 320 feet away. The elevation of the site should serve to screen the Project from the residential area and thus is not considered to be a major concern. The land is currently owned and operated by the city and is zoned industrial due to the off-gassing from the existing landfill. Upon further development of the Project, consultation with various jurisdictional agencies such as the Bay Area Air Quality Management District (BAAQMD) will be necessary to establish permitting and design requirements. Specific permitting requirements will be further developed in subsequent evaluation phases.

During discussions with NCPA and the Alameda project team, it was noted that the City of Alameda plans to construct a recreational park when the land is deemed safe for public use. Prior to redevelopment of a landfill into a public use facility, the landfill owner will need to consider several items:

- Landfill Gas (LFG): After a given landfill is closed, LFG (and associated methane) generation begins to decline. For closed arid landfills such as the Doolittle Landfill (<25 inches of annual precipitation), the waste decay process is extended for a long period of time due to lack of moisture within the landfill's waste mass. The lack of moisture at arid facilities extends the duration for which appreciable amounts of LFG are generated.
 - As presented in Figure 2: Projected Landfill Emissions below, LFG generation is anticipated to decline by approximately 50 percent over the next 30 years; however, it will still be present and the landfill owner should regularly review surface emissions to assess the potential for methane and hazardous air pollutant emissions in areas intended to be utilized by the public.
 - The establishment of a below grade LFG conveyance network (piping system) would be necessary to prevent public access.
 - New localized access controls would need to be placed around the LFG collection wells and flare system.
 - Installation of a smaller capacity blower and flare skid should also be considered to allow the collection system to continuously operate. Right sizing the collection system will allow for continuous operation and potentially reduce LFG emissions.
 - Understand the locations of above grade and below grade piping and plan for potential interferences with public usage.



Mr. Jim Dorrance and Mr. Ron Yuen
Northern California Power Agency
July 10, 2018
Page 5

- Conduct a formal risk assessment to evaluate human health and environmental risks associated with the planned development and public usage.
- Review the potential for future environmental remediation activities and how those activities might affect the planned public use.
- Engage stakeholders from the community to determine how the landfill should be developed. Ultimately a redevelopment plan should be developed in concert with the community that will use it (i.e. city residents), through an involved stakeholder management process.
- Regulatory approvals will be necessary from the appropriate agencies.

Mr. Jim Dorrance and Mr. Ron Yuen
 Northern California Power Agency
 July 10, 2018
 Page 6

Figure 2: Projected Landfill Emissions

Alameda Doolittle Landfill
 Landfill Gas (LFG) Generation and Emissions

Year	Total LFG Generation ¹	Methane Generation ¹		Methane Emissions without LFG Collection ²		Methane Emissions with LFG Collection ³	
	(SCFM)	(Mg/year)	(SCFM)	(Mg/year)	(SCFM)	(Mg/year)	(SCFM)
1955	17.7	88.0	8.9	57.2	5.8	37.6	3.8
1960	59.1	293.3	29.5	190.6	19.2	125.4	12.6
1965	96.5	479.0	48.2	311.4	31.4	204.8	20.6
1970	130.3	647.0	65.2	420.6	42.4	276.7	27.9
1975	161.0	799.1	80.5	519.4	52.3	341.7	34.4
1980	188.7	936.7	94.3	608.9	61.3	400.5	40.3
1985	187.4	930.5	93.7	604.8	60.9	397.8	40.1
1990	169.6	841.9	84.8	547.2	55.1	360.0	36.3
1995	153.4	761.8	76.7	495.2	49.9	325.7	32.8
2000	138.8	689.3	69.4	448.0	45.1	294.7	29.7
2005	125.6	623.7	62.8	405.4	40.8	266.7	26.9
2010	113.7	564.3	56.8	366.8	36.9	241.3	24.3
2015	102.9	510.6	51.4	331.9	33.4	218.3	22.0
2020	93.1	462.0	46.5	300.3	30.2	197.6	19.9
2025	84.2	418.1	42.1	271.8	27.4	178.8	18.0
2030	76.2	378.3	38.1	245.9	24.8	161.7	16.3
2035	68.9	342.3	34.5	222.5	22.4	146.4	14.7
2040	62.4	309.7	31.2	201.3	20.3	132.4	13.3
2045	56.4	280.2	28.2	182.2	18.3	119.8	12.1
2050	51.1	253.6	25.5	164.8	16.6	108.4	10.9
2055	46.2	229.4	23.1	149.1	15.0	98.1	9.9
2060	41.8	207.6	20.9	134.9	13.6	88.8	8.9
2065	37.8	187.9	18.9	122.1	12.3	80.3	8.1
2070	34.2	170.0	17.1	110.5	11.1	72.7	7.3
2075	31.0	153.8	15.5	100.0	10.1	65.8	6.6
2080	28.0	139.2	14.0	90.5	9.1	59.5	6.0
2085	25.4	125.9	12.7	81.8	8.2	53.8	5.4
2090	23.0	113.9	11.5	74.1	7.5	48.7	4.9

1. EPA LandGEM V.3.02 Model Output using EPA air inventory default values from EPA AP-42, Section 2.4
2. Assumes a methane oxidation factor of 0.35 and assumes no LFG collection, per 40 CFR 98, Subpart HH
3. Assumes a collection efficiency of 34.22% based on 2016 Flare Operational information

The Airport Land Use Compatibility Plan (ALUCP) for Oakland International Airport presents the criteria, maps, and policies to be utilized by the Alameda County Airport Land Use Commission (ALUC) and other local jurisdictions. These policies apply when reviewing proposals for land use development within the airport influence area (AIA) for its compatibility

Mr. Jim Dorrance and Mr. Ron Yuen
Northern California Power Agency
July 10, 2018
Page 7

with airport operations. According to the ALUCP, the Project lies within the AIA and is subject to ALUCP airspace protection policies as well as regulations enacted by FAA and the state of California. The ALUCP states that “Due to their propensity to generate smoke, steam, and other visual and physical hazards to aircraft in flight, power plants should be avoided in the AIA. However, given the varying types of power plants (i.e., thermal, solar, wind, etc.), proposed land uses of this kind within the AIA should be evaluated on a case-by-case basis, and in accordance with FAA criteria and the policies set forth in this Plan”. Based on this language, Burns & McDonnell does not anticipate that a solar power plant would be an unacceptable land use.

Most of the Project is located within Safety Compatibility Zone 6 Traffic Pattern Zone while the eastern side is within Zone 4 Outer Approach/Departure Zone which can be found in Appendix D. The site is classified as an Aviation Easement Zone which may require the dedication of an aviation easement as a condition for approval of development. The site also falls within the imaginary surfaces defined for the Airport in accordance with Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace, which can be found in Appendix D. It should be noted that multiple solar projects have been installed near airports across the United States. Specifically, in California, there have been solar projects installed in proximity to Meadows Field Airport, Oakland International Airport, San Francisco International Airport and San Jose International Airport. A glint and glare study is recommended to analyze the impacts a solar project located at the Alameda site might pose to Oakland International Airport.

Constructability

Evaluation categories for the constructability criteria included analysis of the existing terrain, site access, tree clearing required, and existing soils present at the site. Burns & McDonnell reviewed each category at a high-level, using GIS and publicly available data.

The project team did not discover any obvious fatal flaws during the constructability analyses. As the site is already developed, there is no tree clearing required. While weed control at the site will be part of the ongoing operations and maintenance of the site, no significant weed abatement or clearing is expected prior to construction. The site is adjacent to Doolittle Road with an access road bisecting the site from the east to west.

The site is relatively flat towards the middle of the parcel, though there are steep slopes present at both the north and south edges of the property. Additive grading was analyzed by the project team, though this is not recommended because it will add a considerable amount of cost to the project and require additional runoff prevention measures to ensure the grade is kept stable and storm water runoff is controlled accordingly. As the site was previously utilized as a landfill, it is recommended to disturb the terrain as little as possible to mitigate any risk of damaging the existing LFG gas system and/or the landfill cap.

Mr. Jim Dorrance and Mr. Ron Yuen
Northern California Power Agency
July 10, 2018
Page 8

The current landfill cap is approximately four feet thick, which requires the solar panels to be ballasted rack mounted (cast-in place concrete anchors at grade). Ballasted rack mounted systems require a fixed-panel design and relatively flat terrain as steep slopes pose a risk for the panels to slide. As the boundaries of the Alameda site are steeply sloped, it is recommended that panels only be installed on the flat portions of the site.

Project Development

Evaluation categories for the project development criteria included analysis of solar resource potential, panel performance, technology suitability, and electrical interconnection. Burns & McDonnell reviewed the site against each category at a high-level, using GIS and publicly available data.

The project team did not discover any obvious fatal flaws during the project development analyses. The project site has a below average potential for dust and dirt accumulation. As the site is elevated with no tall structures adjacent, there is little to no shade implications.

Burns & McDonnell received data identifying the location of the point of interconnection along with some additional site-specific information. The utility interconnections are located west across the street at the Veterans Memorial Park and onsite at the southeast entry gate. The Easypower model supplied by Alameda was used to determine the loading constraints on feeder 4214. The total active power load on feeder circuit 4214 is 34.3 MW per the Easypower model, which is unrealistically high for a 12.47 kV feeder. However, for our PV interconnection analysis, Burns & McDonnell concludes that a maximum project output of 3 MW can be injected at the point of interconnection (POI), L-688-B4, based on the conductor ratings. The POI is located near the model airplane field in the southeastern portion of the site. Additional data and studies are required to further confirm the capacity available at the POI.

PPA SCENARIO

The final analysis that was conducted for the Alameda site was to run a financial model identifying three potential PPA scenarios to give the City perspective on energy costs from the Project. The project assumptions used for all scenarios are listed below, and the key findings are shown in Table 1: PPA Pricing Scenarios.

- System Design
 - Fixed tilt solar array layout
 - 10° tilt
 - 2.50 MW capacity with an estimated year 1 output of 4,003,000 kWh
 - Canadian Solar CS6U-340M modules

Mr. Jim Dorrance and Mr. Ron Yuen
 Northern California Power Agency
 July 10, 2018
 Page 9

- Solectria Renewables SGI 500XTM inverters
- 0.5% annual degradation after Year 1
- System Costs
 - Total EPC cost of \$4,500,000 (\$1.80/Wdc)
 - No land purchase price as the site is owned by the City of Alameda
 - 15\$/kW-yr fixed capacity cost (O&M)

Table 1: PPA Pricing Scenarios

PPA Scenario	Capacity (MW)	Debt Term	NCPA Upfront Buydown	NPV of Estimated Total Energy Produced (kWh)	NPV of Total Cost	FMV of Project (Year 7)	PPA Price (cents/kWh)
1	2.50	20	\$0	55,876,000	\$4,009,000	\$3,010,000	7.16
2	2.50	20	\$900,000 (20%)	55,876,000	\$2,041,000	\$1,533,000	3.64
3	2.50	20	\$1,350,000 (30%)	55,876,000	\$1,058,000	\$794,000	1.88

PPA Scenario 1

As seen in Table 1: PPA Pricing Scenarios, scenario 1 is the result of a 2.50 MW project with a total EPC cost of \$4,500,000 and a PPA price of 7.16 cents/kWh. In this scenario, there is no escalation, therefore the PPA price is fixed for a duration of 20 years. If NCPA chooses to purchase the Project from the developer at year 7, once all tax credits have been received, the fair market value is expected to be \$3,010,000. The following financial assumptions were used for this scenario and a detailed cash flow analysis is provided in Appendix E:

- 20-year term loan with a 4% annual interest rate
- 60% debt of total capital cost
- Internal rate of return of 8%

PPA Scenario 2

As seen in Table 1: PPA Pricing Scenarios, scenario 2 is the result of a 2.50 MW project with a total EPC cost of \$4,500,000 and a PPA price of 3.64 cents/kWh. In this scenario, there is no escalation, therefore the PPA price is fixed for a duration of 20 years. An initial investment is assumed under this scenario, which shows a 20% buydown (\$900,000) to be paid by NCPA. If NCPA chooses to purchase the Project from the developer at year 7, once all tax credits have

Mr. Jim Dorrance and Mr. Ron Yuen
Northern California Power Agency
July 10, 2018
Page 10

been received, the fair market value is expected to be \$1,553,000. The following financial assumptions were used for this scenario and a detailed cash flow analysis is provided in Appendix E:

- 20-year term loan with a 4% annual interest rate
- 60% debt of total capital cost
- Internal rate of return of 8%

PPA Scenario 3

As seen in Table 1: PPA Pricing Scenarios, scenario 3 is the result of a 2.50 MW project with a total EPC cost of \$4,500,000 and a PPA price of 1.88 cents/kWh. In this scenario, there is no escalation, therefore the PPA price is fixed for a duration of 20 years. An initial investment is assumed under this scenario, which shows a 30% buydown (\$1,350,000) to be paid by NCPA. If NCPA chooses to purchase the Project from the developer at year 7, once all tax credits have been received, the fair market value is expected to be \$794,000. The following financial assumptions were used for this scenario and a detailed cash flow analysis is provided in Appendix E:

- 20-year term loan with a 4% annual interest rate
- 60% debt of total capital cost
- Internal rate of return of 8%

RESULTS AND CONCLUSIONS

Based on the analyses conducted to date, Burns & McDonnell offers the following conclusions and recommendations to NCPA and specifically the Alameda team:

- Burns & McDonnell did not uncover any obvious fatal flaws at the project site in the evaluations conducted to date. Further consultation with potential jurisdictional entities is necessary to confirm development of the Project on top of the existing landfill.
- The project site will continue to emit LFG gas for several decades. Redevelopment of the project site into a public use facility such as a park will require substantial evaluation, stakeholder engagement, and may require upgrades to site infrastructure.
- As a potential next step, the following additional studies are recommended:
 - A site visit by a wetlands scientist is recommended to confirm that no active wetlands are present onsite



Mr. Jim Dorrance and Mr. Ron Yuen
Northern California Power Agency
July 10, 2018
Page 11

- A site visit by a wildlife biologist is recommended to confirm no sensitive species such as burrowing owls are present onsite.
 - A glint and glare assessment is recommended to confirm if the Project will cause any impacts to Oakland International Airport flight paths or air traffic control towers.
- It is recommended to further develop the design of the Project to refine or determine:
 - Developable acreage of the site, technology selection, and panel configurations to refine the MW size of the Project
 - Further analysis of interconnection to the existing distribution system
 - Refined solar resource potential based on conceptual layouts to be developed in the next Project phase

In preparation of this report, Burns & McDonnell relied on information provided to Burns & McDonnell by NCPA, Alameda and other third-party sources. While there is no reason to believe that the information provided is inaccurate or incomplete in any material respect, Burns & McDonnell has not independently verified such information and cannot guarantee or warranty its accuracy or completeness. Thank you for the opportunity to be of service to NCPA. Please do not hesitate to call me at (816) 823-6174 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Parker Hills".

Parker Hills
Project Manager

Attachments:

- Appendix A - Site Overview Maps
- Appendix B - Site Selection Criteria Summaries
- Appendix C - CNDDDB Map
- Appendix D - ALUCP Maps
- Appendix E - PPA Scenarios

cc: Andrew Glenski, Project Consultant

Appendix H

AB52 Consultation

City of Alameda
Planning Division

2263 Santa Clara Avenue, Room 190
Alameda, California 94501



AB 52 Tribal Consultation Notification

Date: June 29, 2019
To: Katherine Erolinda Perez
Tribe: Northern Valley Yokuts Tribe
Subject: Notification for Tribal Consultation
Project Name: NCPA Solar Project 1 – Alameda Doolittle Landfill Site
Lead Agency: City of Alameda

Introduction:

The Northern California Power Agency (NCPA) and the City of Alameda is proposing the NCPA Solar Project 1 – Alameda Doolittle Landfill Site Project which may be located in a geographical area that is traditionally and culturally affiliated with the Northern Valley Yokuts Tribe.

Request for Consultation:

California law under Assembly Bill 52 (Public Resources Code §21080.3.1) now allows California Native American tribes 30 days to request consultation regarding possible significant effects that implementation of the proposed project may have on tribal cultural resources. This request must be in writing to the City of Alameda and identify a lead contact person. The City will begin the consultation process within 30 days of receiving the tribes request for consultation. The consultation may include discussion concerning the type of environmental review necessary for the project, the significance of tribal cultural resources discovered, the significance of the project's impacts on tribal cultural resources, and, if necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend.

The consultation does not limit the ability of the tribe to submit information to the City of Alameda regarding the significance of the tribal resources, the significance of the project's impact on tribal cultural resources, or any measures the tribe feels are appropriate to mitigate the potential impacts. If you wish to informally submit information, written comments may be sent to:

Keith S. Dunbar, P.E., BCEE, Hon.D.WRE., F. ASCE
K.S. Dunbar & Associates, Inc.
Environmental Engineering
45375 Vista Del Mar
Temecula, California 92590-4314
(951) 699-2082
E-Mail: ksddpe67@gmail.com

Confidential information transmitted electronically cannot be ensured. The City of Alameda recommends that transmittal of confidential information, such as the specific location of a cultural resource, is done by formal letter, in person, or over the telephone, the tribes request to consult on the above-named project must be received no later than 30 days from the date of this notification.

Overview of the Proposed Project

The objective of the NCPA Solar Project 1 is to develop a fleet of Photovoltaic (PV) Solar Power Plants throughout participating member service territories to be completed and placed in service by the end of 2019. The plants will be managed by the Northern California Power Agency (NCPA) as a single project to be owned and operated by a third-party provider through a power purchase agreement (PPA). After the initial 5 – 7 years of operation, NCPA plans to purchase the plants.

The project will be executed in three phases:

- ❖ Phase 1 – Determine member interest and requirements and identify potential sites.
- ❖ Phase 2 – Site selection and screening, plan development and selection of a third-party provider to fulfill design, construction and operation through a PPA.
- ❖ Phase 3 – Construction and operation per the PPA.

NCPA has now completed Phase 1 and the site selection and screening portion of Phase 2. Burns & McDonnell was retained by NCPA to complete Phase 2 Site Screening, Plan Development, and Procurement services for each site selected by the member agencies. The City of Alameda selected a site at its Doolittle Landfill (Figure 1). That site is the subject of this Notification.

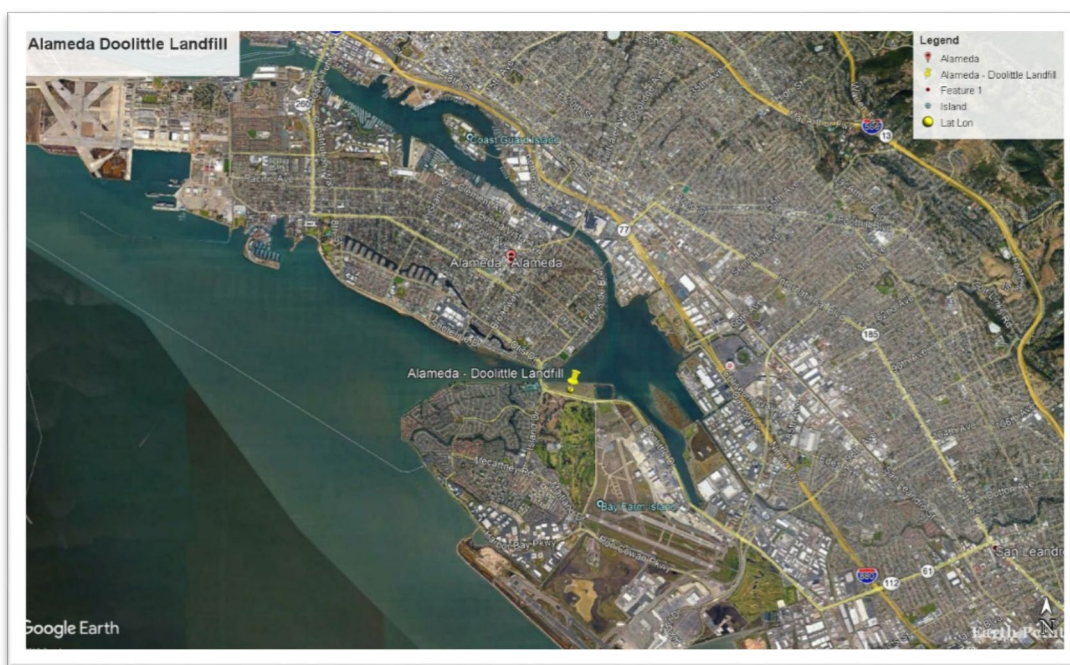


Figure 1 Alameda – Doolittle Landfill Project Location

The Project site is located on a 33.2-acre closed Class III landfill. The site is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive and on the east by Martin Luther King Jr. Regional Shoreline Park. The proposed technology type for the solar project is horizontal single axis tracking (HSAT). As shown on Figure 2, solar panels would be placed on 11.2 acres of the site. The total installed capacity would be approximately 2.60 MW_{dc}.



Figure 2 Proposed Solar Array Locations

City of Alameda
Planning Division

2263 Santa Clara Avenue, Room 190
Alameda, California 94501



AB 52 Tribal Consultation Notification

Date: June 29, 2019
To: Tony Cerda, Chairperson
Tribes: Costanoan Rumsen Carmel Tribe
Subject: Notification for Tribal Consultation
Project Name: NCPA Solar Project 1 – Alameda Doolittle Landfill Site
Lead Agency: City of Alameda

Introduction:

The Northern California Power Agency (NCPA) and the City of Alameda is proposing the NCPA Solar Project 1 – Alameda Doolittle Landfill Site Project which may be located in a geographical area that is traditionally and culturally affiliated with the Costanoan Rumsen Carmel Tribe.

Request for Consultation:

California law under Assembly Bill 52 (Public Resources Code §21080.3.1) now allows California Native American tribes 30 days to request consultation regarding possible significant effects that implementation of the proposed project may have on tribal cultural resources. This request must be in writing to the City of Alameda and identify a lead contact person. The City will begin the consultation process within 30 days of receiving the tribes request for consultation. The consultation may include discussion concerning the type of environmental review necessary for the project, the significance of tribal cultural resources discovered, the significance of the project's impacts on tribal cultural resources, and, if necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend.

The consultation does not limit the ability of the tribe to submit information to the City of Alameda regarding the significance of the tribal resources, the significance of the project's impact on tribal cultural resources, or any measures the tribe feels are appropriate to mitigate the potential impacts. If you wish to informally submit information, written comments may be sent to:

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K.S. Dunbar & Associates, Inc.
Environmental Engineering
45375 Vista Del Mar
Temecula, California 92590-4314
(951) 699-2082
E-Mail: ksddpe67@gmail.com

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Overview of the Proposed Project

The objective of the NCPA Solar Project 1 is to develop a fleet of Photovoltaic (PV) Solar Power Plants throughout participating member service territories to be completed and placed in service by the end of 2019. The plants will be managed by the Northern California Power Agency (NCPA) as a single project to be owned and operated by a third-party provider through a power purchase agreement (PPA). After the initial 5 – 7 years of operation, NCPA plans to purchase the plants.

The project will be executed in three phases:

- ❖ Phase 1 – Determine member interest and requirements and identify potential sites.
- ❖ Phase 2 – Site selection and screening, plan development and selection of a third-party provider to fulfill design, construction and operation through a PPA.
- ❖ Phase 3 – Construction and operation per the PPA.

NCPA has now completed Phase 1 and the site selection and screening portion of Phase 2. Burns & McDonnell was retained by NCPA to complete Phase 2 Site Screening, Plan Development, and Procurement services for each site selected by the member agencies. The City of Alameda selected a site at its Doolittle Landfill (Figure 1). That site is the subject of this Notification.

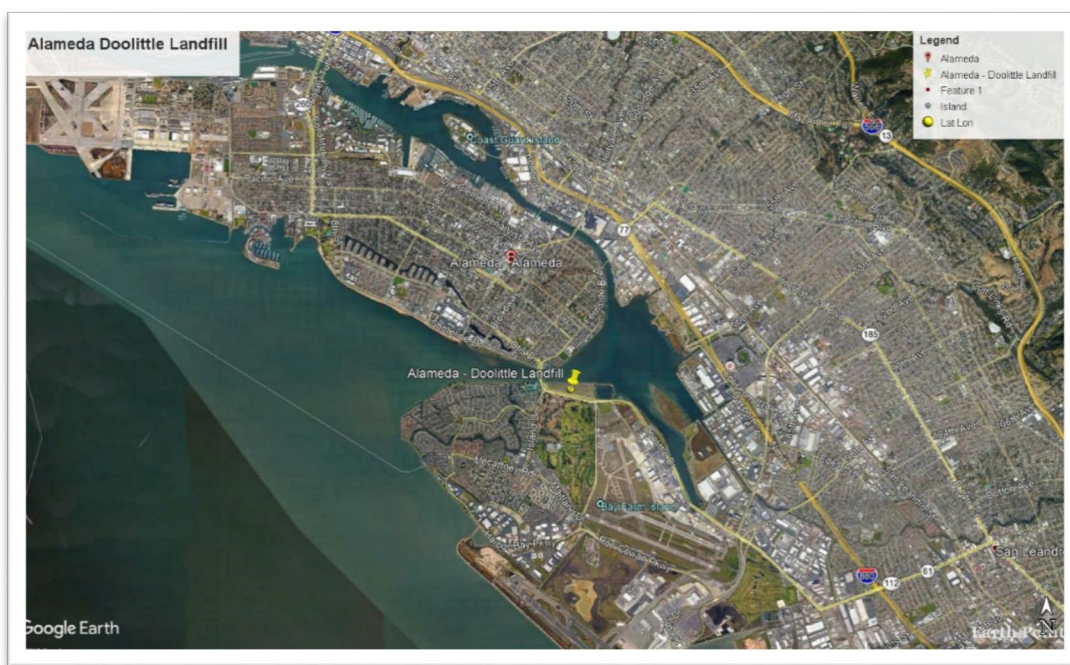


Figure 1 Alameda – Doolittle Landfill Project Location

The Project site is located on a 33.2-acre closed Class III landfill. The site is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive and on the east by Martin Luther King Jr. Regional Shoreline Park. The proposed technology type for the solar project is horizontal single axis tracking (HSAT). As shown on Figure 2, solar panels would be placed on 11.2 acres of the site. The total installed capacity would be approximately 2.60 MW_{dc}.



Figure 2 Proposed Solar Array Locations

City of Alameda
Planning Division

2263 Santa Clara Avenue, Room 190
Alameda, California 94501



AB 52 Tribal Consultation Notification

Date: June 29, 2019
To: Ann Marie Sayers, Chairperson
Tribes: Indian Canyon Mutsun Band of Costanoan
Subject: Notification for Tribal Consultation
Project Name: NCPA Solar Project 1 – Alameda Doolittle Landfill Site
Lead Agency: City of Alameda

Introduction:

The Northern California Power Agency (NCPA) and the City of Alameda is proposing the NCPA Solar Project 1 – Alameda Doolittle Landfill Site Project which may be located in a geographical area that is traditionally and culturally affiliated with the Indian Canyon Mutsun Band of Costanoan.

Request for Consultation:

California law under Assembly Bill 52 (Public Resources Code §21080.3.1) now allows California Native American tribes 30 days to request consultation regarding possible significant effects that implementation of the proposed project may have on tribal cultural resources. This request must be in writing to the City of Alameda and identify a lead contact person. The City will begin the consultation process within 30 days of receiving the tribes request for consultation. The consultation may include discussion concerning the type of environmental review necessary for the project, the significance of tribal cultural resources discovered, the significance of the project's impacts on tribal cultural resources, and, if necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend.

The consultation does not limit the ability of the tribe to submit information to the City of Alameda regarding the significance of the tribal resources, the significance of the project's impact on tribal cultural resources, or any measures the tribe feels are appropriate to mitigate the potential impacts. If you wish to informally submit information, written comments may be sent to:

Keith S. Dunbar, P.E., BCEE, Hon.D.WRE., F. ASCE
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Confidential information transmitted electronically cannot be ensured. The City of Alameda recommends that transmittal of confidential information, such as the specific location of a cultural resource, is done by formal letter, in person, or over the telephone, the tribes request to consult on the above-named project must be received no later than 30 days from the date of this notification.

Overview of the Proposed Project

The objective of the NCPA Solar Project 1 is to develop a fleet of Photovoltaic (PV) Solar Power Plants throughout participating member service territories to be completed and placed in service by the end of 2019. The plants will be managed by the Northern California Power Agency (NCPA) as a single project to be owned and operated by a third-party provider through a power purchase agreement (PPA). After the initial 5 – 7 years of operation, NCPA plans to purchase the plants.

The project will be executed in three phases:

- ❖ Phase 1 – Determine member interest and requirements and identify potential sites.
- ❖ Phase 2 – Site selection and screening, plan development and selection of a third-party provider to fulfill design, construction and operation through a PPA.
- ❖ Phase 3 – Construction and operation per the PPA.

NCPA has now completed Phase 1 and the site selection and screening portion of Phase 2. Burns & McDonnell was retained by NCPA to complete Phase 2 Site Screening, Plan Development, and Procurement services for each site selected by the member agencies. The City of Alameda selected a site at its Doolittle Landfill (Figure 1). That site is the subject of this Notification.

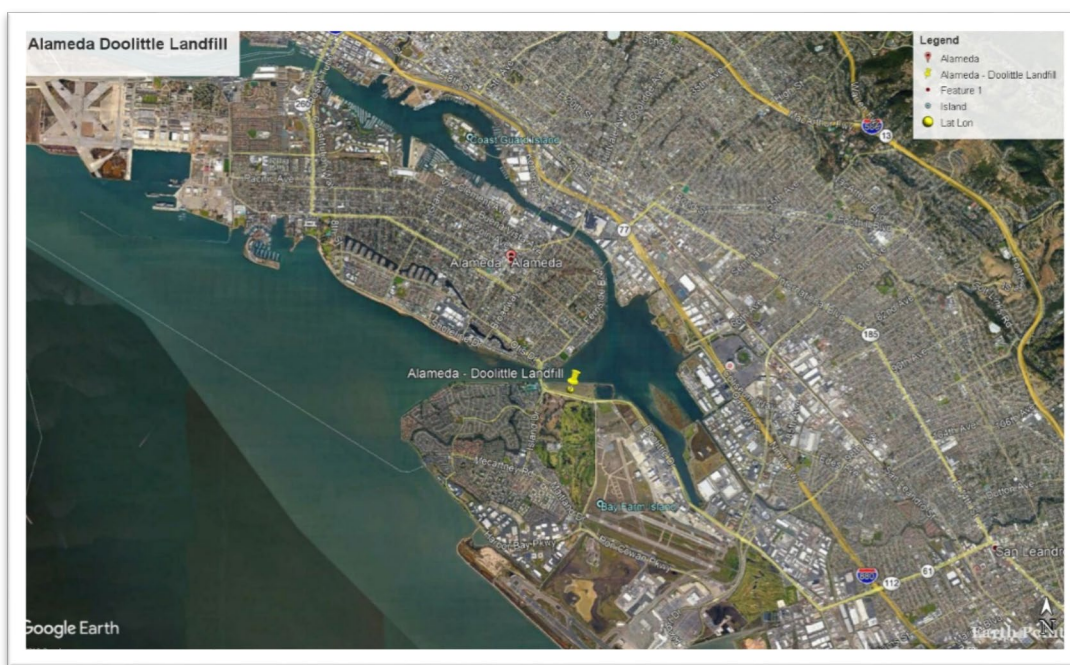


Figure 1 Alameda – Doolittle Landfill Project Location

The Project site is located on a 33.2-acre closed Class III landfill. The site is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive and on the east by Martin Luther King Jr. Regional Shoreline Park. The proposed technology type for the solar project is horizontal single axis tracking (HSAT). As shown on Figure 2, solar panels would be placed on 11.2 acres of the site. The total installed capacity would be approximately 2.60 MW_{dc}.



Figure 2 Proposed Solar Array Locations

City of Alameda
Planning Division

2263 Santa Clara Avenue, Room 190
Alameda, California 94501



AB 52 Tribal Consultation Notification

Date: June 29, 2019
To: Rosemary Cambra, Chairperson
Tribes: Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
Subject: Notification for Tribal Consultation
Project Name: NCPA Solar Project 1 – Alameda Doolittle Landfill Site
Lead Agency: City of Alameda

Introduction:

The Northern California Power Agency (NCPA) and the City of Alameda is proposing the NCPA Solar Project 1 – Alameda Doolittle Landfill Site Project which may be located in a geographical area that is traditionally and culturally affiliated with the Muwekma Ohlone Indian Tribe of the San Francisco Bay Area.

Request for Consultation:

California law under Assembly Bill 52 (Public Resources Code §21080.3.1) now allows California Native American tribes 30 days to request consultation regarding possible significant effects that implementation of the proposed project may have on tribal cultural resources. This request must be in writing to the City of Alameda and identify a lead contact person. The City will begin the consultation process within 30 days of receiving the tribes request for consultation. The consultation may include discussion concerning the type of environmental review necessary for the project, the significance of tribal cultural resources discovered, the significance of the project's impacts on tribal cultural resources, and, if necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend.

The consultation does not limit the ability of the tribe to submit information to the City of Alameda regarding the significance of the tribal resources, the significance of the project's impact on tribal cultural resources, or any measures the tribe feels are appropriate to mitigate the potential impacts. If you wish to informally submit information, written comments may be sent to:

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Environmental Engineering
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Temecula, California 92590-4314
(951) 699-2082
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Confidential information transmitted electronically cannot be ensured. The City of Alameda recommends that transmittal of confidential information, such as the specific location of a cultural resource, is done by formal letter, in person, or over the telephone, the tribes request to consult on the above-named project must be received no later than 30 days from the date of this notification.

Overview of the Proposed Project

The objective of the NCPA Solar Project 1 is to develop a fleet of Photovoltaic (PV) Solar Power Plants throughout participating member service territories to be completed and placed in service by the end of 2019. The plants will be managed by the Northern California Power Agency (NCPA) as a single project to be owned and operated by a third-party provider through a power purchase agreement (PPA). After the initial 5 – 7 years of operation, NCPA plans to purchase the plants.

The project will be executed in three phases:

- ❖ Phase 1 – Determine member interest and requirements and identify potential sites.
- ❖ Phase 2 – Site selection and screening, plan development and selection of a third-party provider to fulfill design, construction and operation through a PPA.
- ❖ Phase 3 – Construction and operation per the PPA.

NCPA has now completed Phase 1 and the site selection and screening portion of Phase 2. Burns & McDonnell was retained by NCPA to complete Phase 2 Site Screening, Plan Development, and Procurement services for each site selected by the member agencies. The City of Alameda selected a site at its Doolittle Landfill (Figure 1). That site is the subject of this Notification.

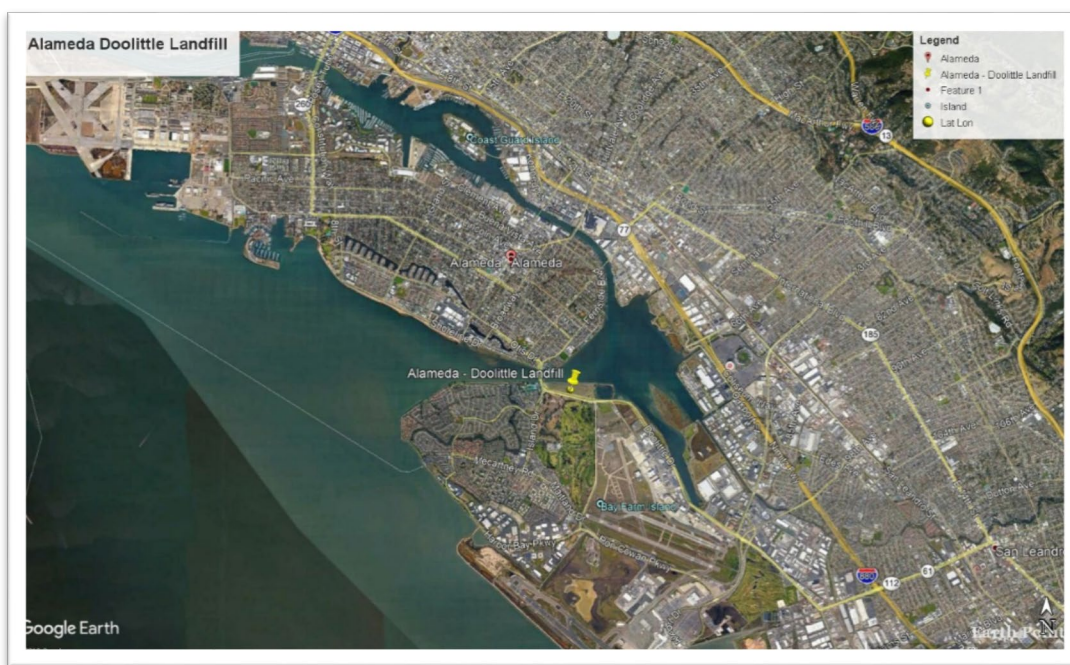


Figure 1 Alameda – Doolittle Landfill Project Location

The Project site is located on a 33.2-acre closed Class III landfill. The site is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive and on the east by Martin Luther King Jr. Regional Shoreline Park. The proposed technology type for the solar project is horizontal single axis tracking (HSAT). As shown on Figure 2, solar panels would be placed on 11.2 acres of the site. The total installed capacity would be approximately 2.60 MW_{dc}.



Figure 2 Proposed Solar Array Locations

City of Alameda
Planning Division

2263 Santa Clara Avenue, Room 190
Alameda, California 94501



AB 52 Tribal Consultation Notification

Date: June 29, 2019
To: Katherine Erolinda Perez, Chairperson
Tribes: Northern Valley Yokuts Tribe
Subject: Notification for Tribal Consultation
Project Name: NCPA Solar Project 1 – Alameda Doolittle Landfill Site
Lead Agency: City of Alameda

Introduction:

The Northern California Power Agency (NCPA) and the City of Alameda is proposing the NCPA Solar Project 1 – Alameda Doolittle Landfill Site Project which may be located in a geographical area that is traditionally and culturally affiliated with the Northern Valley Yokuts Tribe.

Request for Consultation:

California law under Assembly Bill 52 (Public Resources Code §21080.3.1) now allows California Native American tribes 30 days to request consultation regarding possible significant effects that implementation of the proposed project may have on tribal cultural resources. This request must be in writing to the City of Alameda and identify a lead contact person. The City will begin the consultation process within 30 days of receiving the tribes request for consultation. The consultation may include discussion concerning the type of environmental review necessary for the project, the significance of tribal cultural resources discovered, the significance of the project's impacts on tribal cultural resources, and, if necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend.

The consultation does not limit the ability of the tribe to submit information to the City of Alameda regarding the significance of the tribal resources, the significance of the project's impact on tribal cultural resources, or any measures the tribe feels are appropriate to mitigate the potential impacts. If you wish to informally submit information, written comments may be sent to:

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(951) 699-2082
E-Mail: ksddpe67@gmail.com

Confidential information transmitted electronically cannot be ensured. The City of Alameda recommends that transmittal of confidential information, such as the specific location of a cultural resource, is done by formal letter, in person, or over the telephone, the tribes request to consult on the above-named project must be received no later than 30 days from the date of this notification.

Overview of the Proposed Project

The objective of the NCPA Solar Project 1 is to develop a fleet of Photovoltaic (PV) Solar Power Plants throughout participating member service territories to be completed and placed in service by the end of 2019. The plants will be managed by the Northern California Power Agency (NCPA) as a single project to be owned and operated by a third-party provider through a power purchase agreement (PPA). After the initial 5 – 7 years of operation, NCPA plans to purchase the plants.

The project will be executed in three phases:

- ❖ Phase 1 – Determine member interest and requirements and identify potential sites.
- ❖ Phase 2 – Site selection and screening, plan development and selection of a third-party provider to fulfill design, construction and operation through a PPA.
- ❖ Phase 3 – Construction and operation per the PPA.

NCPA has now completed Phase 1 and the site selection and screening portion of Phase 2. Burns & McDonnell was retained by NCPA to complete Phase 2 Site Screening, Plan Development, and Procurement services for each site selected by the member agencies. The City of Alameda selected a site at its Doolittle Landfill (Figure 1). That site is the subject of this Notification.

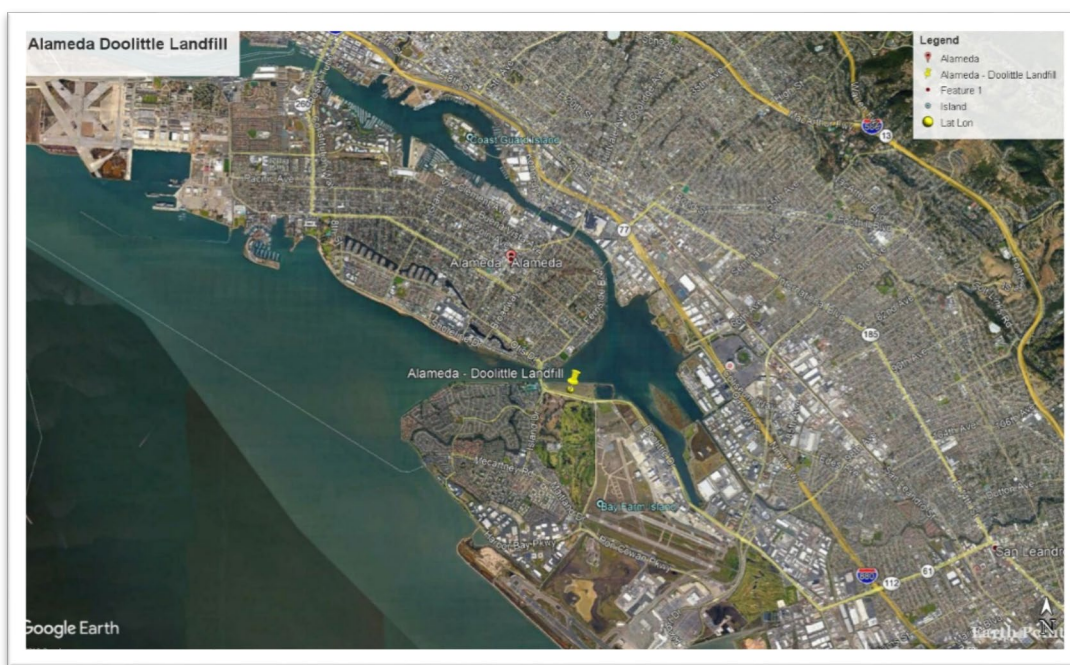


Figure 1 Alameda – Doolittle Landfill Project Location

The Project site is located on a 33.2-acre closed Class III landfill. The site is bounded on the north by San Leandro Bay, on the south and west by Doolittle Drive and on the east by Martin Luther King Jr. Regional Shoreline Park. The proposed technology type for the solar project is horizontal single axis tracking (HSAT). As shown on Figure 2, solar panels would be placed on 11.2 acres of the site. The total installed capacity would be approximately 2.60 MW_{dc}.



Figure 2 Proposed Solar Array Locations

City of Alameda
Planning Division

2263 Santa Clara Avenue, Room 190
Alameda, California 94501



AB 52 Tribal Consultation Notification

Date: June 29, 2019
To: Andrew Galvan
Tribe: The Ohlone Indian Tribe
Subject: Notification for Tribal Consultation
Project Name: NCPA Solar Project 1 – Alameda Doolittle Landfill Site
Lead Agency: City of Alameda

Introduction:

The Northern California Power Agency (NCPA) and the City of Alameda is proposing the NCPA Solar Project 1 – Alameda Doolittle Landfill Site Project which may be located in a geographical area that is traditionally and culturally affiliated with The Ohlone Indian Tribe.

Request for Consultation:

California law under Assembly Bill 52 (Public Resources Code §21080.3.1) now allows California Native American tribes 30 days to request consultation regarding possible significant effects that implementation of the proposed project may have on tribal cultural resources. This request must be in writing to the City of Alameda and identify a lead contact person. The City will begin the consultation process within 30 days of receiving the tribes request for consultation. The consultation may include discussion concerning the type of environmental review necessary for the project, the significance of tribal cultural resources discovered, the significance of the project's impacts on tribal cultural resources, and, if necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend.

The consultation does not limit the ability of the tribe to submit information to the City of Alameda regarding the significance of the tribal resources, the significance of the project's impact on tribal cultural resources, or any measures the tribe feels are appropriate to mitigate the potential impacts. If you wish to informally submit information, written comments may be sent to:

Keith S. Dunbar, P.E., BCEE, Hon.D.WRE., F. ASCE
K.S. Dunbar & Associates, Inc.
Environmental Engineering
45375 Vista Del Mar
Temecula, California 92590-4314
(951) 699-2082
E-Mail: ksddpe67@gmail.com

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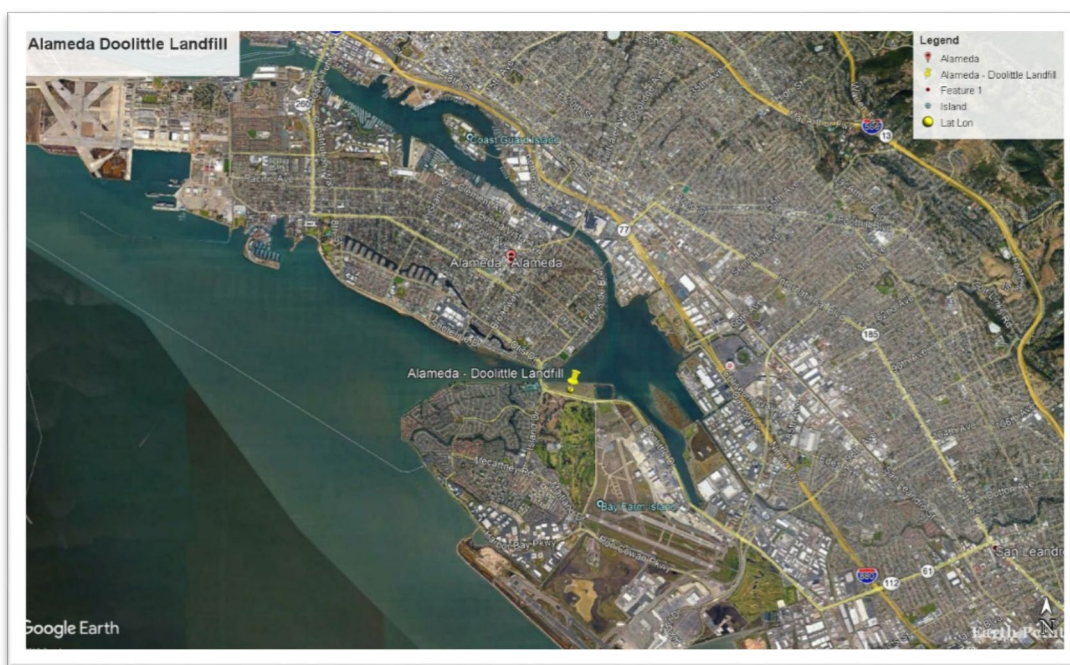


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Figure 2 Proposed Solar Array Locations

Appendix I

MMRP



City of Alameda
Planning, Building and Transportation Department
2263 Santa Clara Avenue, Room 190
Alameda, California 94501-4477

Mitigation Monitoring and Reporting Program

Alameda Municipal Power Solar Project
Alameda Doolittle Landfill Site
Project No. PLN19-0601

Project Sponsor:

Alameda Municipal Power

Prepared by:

City of Alameda
Planning, Building & Transportation Department

January 2020

Mitigation Monitoring and Reporting Program

Alameda Municipal Power Solar Project

The California Environmental Quality Act (CEQA) requires that when a public agency completes an environmental document which includes measures to mitigate or avoid significant environmental effects, the public agency must adopt a reporting or monitoring program. This requirement ensures that environmental impacts found to be significant will be mitigated. The reporting or monitoring program must be designed to ensure compliance during project implementation (Public Resources Code Section 21081.6).

In compliance with Public Resources Code Section 21081.6, the following MITIGATION MONITORING AND REPORTING CHECKLIST has been prepared for the Alameda Municipal Power Solar Project. This Mitigation Monitoring and Reporting Checklist is intended to provide verification that all applicable Mitigation Measures relative to significant environmental impacts are monitored and reported. Monitoring will include: 1) verification that each mitigation measure has been implemented, 2) recordation of the actions taken to implement each mitigation, and 3) retention of records in the Alameda Municipal Power Solar Project file.

This Mitigation Monitoring and Reporting Program delineates responsibilities for monitoring the Project, but also allows the City of Alameda flexibility and discretion in determining how best to monitor implementation. Monitoring procedures will vary according to the type of mitigation measure. Adequate monitoring consists of demonstrating that monitoring procedures took place and that mitigation measures were implemented.

Reporting consists of establishing a record that a mitigation measure is being implemented and generally involves the following steps:

- ❖ The City of Alameda distributes forms to the appropriate persons for verification of compliance.
- ❖ Departments/agencies with reporting responsibilities will review the Initial Study and Mitigated Negative Declaration, which provides general background information on the reasons for including specified mitigation measures.
- ❖ Problems or exceptions to compliance will be addressed to the City of Alameda as appropriate.
- ❖ Periodic meetings may be held during project implementation to report on compliance mitigation measures.
- ❖ Responsible parties provide the City of Alameda with verification that monitoring has been conducted and ensure, as applicable, that mitigation measures have been implemented. Monitoring compliance may be documented through existing review and approval programs such as field inspection reports and plan review.

- ❖ The City of Alameda or Applicant prepares a reporting form periodically during the construction phase and an annual reporting summarizing all project mitigation monitoring efforts.
- ❖ Appropriate mitigation measures will be included in construction documents and/or conditions of permits/approvals.

Minor changes to the Mitigation Monitoring and Reporting Program, if required, would be made in accordance with CEQA and would be permitted after further review and approval by the City of Alameda. Such changes could include reassignment of monitoring and reporting responsibilities, program redesign to make any appropriate improvements, and/or modification, substitution or deletion of mitigation measures subject to conditions described in CEQA Guidelines Section 15162. No change will be permitted unless the Mitigation Monitoring and Reporting Program continues to satisfy the requirements of Public Resources Code Section 21081.6.

Mitigation Monitoring and Reporting Program Checklist

Alameda Municipal Power Solar Project

Mitigation Measure	Action(s)	Timing	Monitoring Party	Responsible Person(s)
MM-BIO-1: If construction occurs between February 1 st and August 31 st , a pre-construction clearance survey for nesting birds shall be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a no-disturbance buffer.	Implementation of MM-BIO-1 if construction takes place between February 1 st and August 31 st .	Prior to Construction.	City of Alameda	Project Applicant or Designee.

<p>The size of the no-disturbance buffer will be determined by the wildlife biologist and will depend on the level of noise and/or surrounding anthropogenic disturbances, line of sight between the nest and the construction activity, type and duration of construction activity, ambient noise, species habituation, and topographical barriers. These factors will be evaluated on a case-by-case basis when developing buffer distances. Limits of construction to avoid an active nest will be established in the field with flagging, fencing, or other appropriate barriers; and construction personnel will be instructed on the sensitivity of nest areas. A biological monitor should be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.</p>				
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