

PUBLIC REVIEW DRAFT

**INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION**

**CLEAN ENERGY PROGRAM: MULTI-SITE SOLAR PHOTOVOLTAIC PROJECT –
PIT T1 AND PIT T2 (DISTRICT JOB NO. 10093)**

FREMONT, CALIFORNIA



LSA

August 2020

This page intentionally left blank

PUBLIC REVIEW DRAFT

**INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION**

**CLEAN ENERGY PROGRAM: MULTI-SITE SOLAR PHOTOVOLTAIC PROJECT –
PIT T1 AND PIT T2 (DISTRICT JOB NO. 10093)**

FREMONT, CALIFORNIA

Submitted to:

Alameda County Water District
43885 S. Grimmer Blvd.
Fremont, California 94537

Prepared by:

LSA
157 Park Place
Pt. Richmond, California 94801
510.236.6810

Project No. AWD1901.D



August 2020

This page intentionally left blank

MITIGATED NEGATIVE DECLARATION

Project Name. Clean Energy Program: Multi-Site Solar Photovoltaic Project - Pit T1 and Pit T2
(District Job No. 10093)

Project Location. The Clean Energy Program: Multi-Site Solar Photovoltaic Project at Pit T1 and Pit T2 would encompass up to approximately 354,000 square feet (approximately 8.1 acres) of Pit T1 and 386,000 square feet (8.9 acres) of Pit T2 at the Alameda County Water District's (District) former Pit T1 and Pit T2 groundwater recharge facilities. The Pit T1 and Pit T2 sites are located just south of the Quarry Lakes Recreation Area, along Paseo Padre Parkway, in the City of Fremont, Alameda County, California. The project site consists of five parcels (Assessor Parcel Numbers [APNs] 501 101001008, 501 131001007, 501 131001209, 501 131001310, and 501 182002300).

Project Description. The Alameda County Water District (District) proposes to install floating solar photovoltaic (PV) power generation systems atop the former Pit T1 and Pit T2 groundwater recharge facilities. Implementation of the project would generate approximately 3,150 kilowatts (kW) alternating current (AC) solar PV between both Pit T1 and Pit T2. The floating solar field would include PV modules, inverters or converters and transformers that would be mounted on, or molded into, floating structures that would float atop the Pit T1 and Pit T2 ponds. The system would use molded plastic pontoons, which contain most of the electronics for the solar arrays. The pontoons would be tied together and connected by short conductor cables. The pontoons would be anchored to the pond bottom, which may be dredged to provide a level surface. The solar panels would be mounted atop the floating structures, extending approximately 2 to 3 feet above the water surface and tilted at a fixed angle (5 to 12 degrees for standard panels; up to 22 degrees with a high-angle variant). Water from the existing pits would be used to cool the pontoons.

Findings. It is hereby determined that, based on the information contained in the attached Initial Study, the project would not have a significant adverse effect on the environment.

Mitigation measures necessary to avoid the potentially significant effects on the environment are included in the attached Initial Study, which is hereby incorporated and fully made part of this Mitigated Negative Declaration. The District has hereby agreed to implement each of the identified mitigation measures, which would be adopted as part of the Mitigation Monitoring and Reporting Program.



Ed Stevenson
Alameda County Water District

8/19/2020

Date

This page intentionally left blank

TABLE OF CONTENTS

TABLE OF CONTENTS	i
FIGURES AND TABLES	ii
LIST OF ABBREVIATIONS AND ACRONYMS.....	iii
1.0 PROJECT INFORMATION	1-1
2.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED.....	2-1
2.1 Determination	2-1
3.0 CEQA ENVIRONMENTAL CHECKLIST	3-1
3.1 Aesthetics	3-1
3.2 Agriculture and Forestry Resources	3-4
3.3 Air Quality	3-6
3.4 Biological Resources.....	3-13
3.5 Cultural Resources	3-20
3.6 Energy.....	3-23
3.7 Geology and Soils	3-27
3.8 Greenhouse Gas Emissions	3-32
3.9 Hazards and Hazardous Materials	3-35
3.10 Hydrology and Water Quality	3-39
3.11 Land Use and Planning	3-45
3.12 Mineral Resources.....	3-47
3.13 Noise.....	3-48
3.14 Population and Housing	3-56
3.15 Public Services.....	3-57
3.16 Recreation	3-59
3.17 Transportation	3-60
3.18 Tribal Cultural Resources	3-63
3.19 Utilities and Service Systems.....	3-65
3.20 Wildfire.....	3-69
3.21 Mandatory Findings of Significance	3-71
4.0 LIST OF PREPARERS	4-1
5.0 REFERENCES	5-1

APPENDICES

- A: CALEEMOD OUTPUT SHEETS
- B: SPECIAL-STATUS SPECIES TABLES

FIGURES AND TABLES

FIGURES

Figure 1-1: Regional Location.....	1-2
Figure 1-2: Project Location	1-3
Figure 1-3: Proposed Solar Facility.....	1-5

TABLES

Table 3-A: Estimated Peak Day Construction Emissions.....	3-8
Table 3-B: Typical Construction Equipment Noise Levels.....	3-50
Table 3-C: Vibration Source Amplitudes for Construction Equipment.....	3-54

LIST OF ABBREVIATIONS AND ACRONYMS

ABAG	Association of Bay Area Governments
ACCWP	Alameda Countywide Clean Water Program
ACTC	Alameda County Transportation Commission
AHF	Above Hayward Fault
APN	Assessor's Parcel Number
AT&T	American Telegraph and Telephone
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Basin Plan	Water Quality Control Plan
BHF	Below Hayward Fault
BMPs	Best Management Practices
CALEEMOD	California Emissions Estimator Model®
Caltrans	California Department of Transportation
CAP	City of Fremont Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CH ₄	Methane
CIP	Capital Improvement Program
City	City of Fremont
CMA	Congestion Management Agency
CNEL	community noise equivalent level
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO ₂ e	CO ₂ equivalents
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRHR	California Register of Historic Resources
dB	decibels
dBA	A-weighted decibels
District	Alameda County Water District
DTSC	Department of Toxic Substances Control
EFZs	Earthquake Fault Zones
ESA	Federal Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration

FUSD	Fremont Unified School District
GHG	Greenhouse Gas
GWh	Gigawatt Hour
GWP	Global Warming Potential
HCP	Habitat Conservation Plan
HFCs	Hydrofluorocarbons
I-680	Interstate 680
IS/MND	Initial Study/Mitigated Negative Declaration
Leq	Equivalent continuous sound level
Ldn	Day-night average level
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
N ₂ O	Nitrous Oxide
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NO ₂	Nitrogen Dioxide
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollution Discharge Elimination System
NWIC	Northwest Information Center
OS	Open Space
Pb	Lead
PF	Public Facility
PFCs	Perfluorocarbons
PG&E	Pacific Gas and Electric Company
PM ₁₀ , PM _{2.5}	Particulate Matter
PPV	Peak Particle Velocity
PRC	Public Resources Code
PRDs	Permit Registration Documents
PV	photovoltaic
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
RMS	Root Mean Square
RWQCB	Regional Water Quality Control Board
SF ₆	Sulfur Hexafluoride
SMARA	State Mining Reclamation Act
SMARTS	Stormwater Multiple Application and Report Tracking System
SO ₂	Sulfur Dioxide
SWRCB	State Water Resources Control Board
SWPPP	Stormwater Pollution Prevention Plan
TMDLs	Total Maximum Daily Loads
USD	Union Sanitary District
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey

USFWS	U.S. Fish and Wildlife Service
VdB	Vibration Velocity Decibels
WDID	Waste Discharge Identification Number
WWTP	Wastewater Treatment Plant
ZE	Zero Emission

This page intentionally left blank.

1.0 PROJECT INFORMATION

1. Project Title:

Clean Energy Program: Multi-Site Solar Photovoltaic Project
Pit T1 and Pit T2
District Job No. 10093

2. Lead Agency Name and Address:

Alameda County Water District
43885 S. Grimmer Blvd.
Fremont, California 94538

3. Contact Person and Phone Number:

Ed Stevenson, Manager of Engineering & Technology Services
Tel: (510) 688-4401
E-mail: ed.stevenson@acwd.com

4. Project Location:

The Clean Energy Program: Multi-Site Solar Photovoltaic Project at Pit T1 and Pit T2 would encompass up to approximately 354,000 square feet (approximately 8.1 acres) of Pit T1 and 386,000 square feet (8.9 acres) of Pit T2 at the Alameda County Water District's (District) former Pit T1 and Pit T2 groundwater recharge facilities. The Pit T1 and Pit T2 sites are located just south of the Quarry Lakes Recreation Area, along Paseo Padre Parkway, in the City of Fremont, Alameda County, California. Neither Pit T1 nor Pit T2 has been actively used for groundwater recharge since the decommissioning and removal of the District's nearby Rubber Dam #2 in 2009. The dam, when inflated in Alameda Creek, diverted water into the Pits for groundwater recharge. The project site consists of five parcels (Assessor Parcel Numbers [APNs] 501 101001008, 501 131001007, 501 131001209, 501 131001310, and 501 182002300). Figures 1-1 and 1-2 show the regional location and aerial view of the project site, respectively.

5. Project Sponsor's Name and Address:

Alameda County Water District
43885 S. Grimmer Blvd.
Fremont, California 94538

6. General Plan Designation:

Open Space – Resource Conservation/Public

7. Zoning:

Open Space (OS)

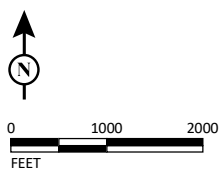


LSA

LEGEND

Project Site- ACWD Pits T1 & T2

FIGURE 1-1



SOURCE: ESRI World Street Maps (02/2020).

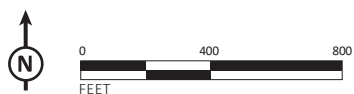
I:\AWD1901.D\GIS\Maps\Figure 1_Regional Location Pit T1-Pit T2.mxd (2/24/2020)

Clean Energy Program: Multi-Site Solar
Photovoltaic Project – Pits T1 and T2
Fremont, Alameda County, California
Regional Location



FIGURE 1-2

LSA



Project Site

Clean Energy Program: Multi-Site Solar
Photovoltaic Project -- Pits T1 and T2
Fremont, Alameda County, California

Aerial Photograph of the Project Site and Surrounding Land Uses

SOURCES: GOOGLE EARTH, 3/28/18; LSA, 2020.

P:\AWD1901D Solar Implementation\CEQA\Graphics\Pits T1T2\Figure_2.ai (4/20/2020)

8. Description of Project :

The Alameda County Water District (District) proposes to install floating solar photovoltaic (PV) power generation systems atop the former Pit T1 and Pit T2 groundwater recharge facilities. Implementation of the project would generate approximately 3,150 kilowatts (kW) alternating current (AC) solar PV between both Pit T1 and Pit T2. Figure 1-3 depicts the proposed solar facility.

Project Background. The District proposes to install solar PV generation systems at numerous District facilities and properties as part of the District's Clean Energy Program (Program). Power generated at each site would be used at the same site, to the extent feasible, with excess power sent to the electrical grid to be used at other District facilities and sites under the Pacific Gas & Electric (PG&E) Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) program or equivalent program under the applicable Community Choice Energy Program (e.g., East Bay Community Energy). The Program is designed to be consistent with various projects currently programmed into the District's Capital Improvement Program (CIP). The Pit T1 and Pit T2 project is one of seven solar sites being considered by the District as part of this Program.

Project Components. The District would construct, operate, and maintain the Pit T1 and Pit T2 Solar Implementation Project, consisting of two floating AC solar PV power generating facilities atop the District's Pit T1 and Pit T2 ponds. The Pit T1 facility would generate approximately 880 kW AC solar PV power and cover approximately 130,000 square feet (3.0 acres) of the existing Pit T1 pond. The Pit T2 facility would generate approximately 2,270 kW AC solar PV power and cover approximately 240,000 square feet (5.5 acres) of the existing pond.

Floating Solar Field. The floating solar field would include PV modules, inverters or converters and transformers that would be mounted on, or molded into, floating structures that would float atop the Pit T1 and Pit T2 ponds. The system would use molded plastic pontoons, which contain most of the electronics for the solar arrays. The pontoons would be tied together and connected by short conductor cables. The pontoons would be anchored to the pond bottom, which may be dredged to provide a level surface. The solar panels would be mounted atop the floating structures, extending approximately 2 to 3 feet above the water surface and tilted at a fixed angle (5 to 12 degrees for standard panels; up to 22 degrees with a high-angle variant). Water from the existing pits would be used to cool the pontoons.

The two pits are hydraulically connected to each other by an unvalved pipeline. Pits T1/T2 were at one time connected to Alameda Creek via a pipeline and diversion structure upstream of the District's Rubber Dam #2. However, this connection was filled in 2009.

Project-related Access. Access to the Pit T1 solar facility would be provided via the existing access point at Sequoia Road off Ortega Common, which consists of a steep dirt/gravel pathway. The existing pathway would likely need to be graded in order to be used for construction access. Pit T2 has no existing vehicular access. A new access point would be provided, likely from Paseo Padre Parkway or the Alameda Creek trail via Sequoia Terrace.



Pit T1

Preliminary PV Target

Group	Nameplate (kWp)	Yr-1 Production (kWh)	Array Area (SF)
NEM	0	0	0
FIT	2,420	3,627,000	354,000
Total	2,420	3,627,000	354,000

LSA

NOT TO SCALE



FIGURE 1-3A

*Clean Energy Program: Multi-Site Solar
Photovoltaic Project -- Pits T1 and T2
Fremont, Alameda County, California
Proposed Project*

SOURCE: ALAMEDA COUNTY WATER DISTRICT, 11/12/19.

P:\AWD1901D Solar Implementation\CEQA\Graphics\Pits T1T2\Figures_3A-3B.ai (4/20/2020)



Pit T2

Preliminary PV Target

Group	Nameplate (kWp)	Yr-1 Production (kWh)	Array Area (SF)
NEM	0	0	0
FIT	2,190	3,361,000	386,000
Total	2,190	3,361,000	386,000

LSA

FIGURE 1-3B



*Clean Energy Program: Multi-Site Solar
Photovoltaic Project -- Pits T1 and T2
Fremont, Alameda County, California
Proposed Project*

SOURCE: ALAMEDA COUNTY WATER DISTRICT, 11/12/19.

P:\AWD1901D Solar Implementation\CEQA\Graphics\Pits T1T2\Figures_3A-3B.ai (4/20/2020)

Site Security, Fencing and Infrastructure. The project site would be secured with approximately 7-foot-high anti-climb fence, or similar. Existing fencing that fronts Pit T2 near Sequoia Avenue and continues along the Union Pacific railroad property line would remain. Controlled access gates would be located at the site driveways. Access gates would be located at specific locations along the perimeter fences, as required, allowing maintenance and security crew access to all portions of the project site.

An electric meter would need to be installed in order to serve each of the sites. If both sites are constructed, a single meter could be installed with interconnection located between the two pits.

Project Construction. Project construction is anticipated to start in the late winter or early spring of 2021 and last approximately six to eight months. Construction activities would be conducted in compliance with the City of Fremont's Municipal Code, which limits construction activities within 500 feet of residential, lodging or hospital uses to between 7:00 a.m. and 7:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on Saturdays and holidays. Sunday construction is not allowed. The construction staging area would be located within the project site. Access to the project site would likely be via Paseo Padre Parkway, Sequoia Terrace, Sequoia Road, Ortega Common, and Riverwalk Drive. Once construction activities are complete, staging areas would be returned to their existing condition.

The onsite construction workforce would consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. It is conservatively assumed that approximately 7 to 12 workers would be on-site during construction activities.

Construction materials such as concrete, conduit pipe, PV modules, wire and cable conductors, fuels, reinforcing steel, and small tools and consumables would be delivered to the site by truck. Initial grading work would include the use of primarily rubber-tired tractors, disk/tillers and vibratory rollers, dredging equipment, and limited use of track-driven excavators, graders, dump trucks, and end loaders, in addition to the support pickups, water trucks, and cranes. Throughout the construction process, temporary aboveground fuel storage tanks may be located at the site for construction equipment fueling.

Operation and Maintenance. Operation of the proposed project would require a workforce of up to four staff on a semi-annual or annual basis to perform inspections, routine maintenance, and minor repairs. Crews of up to four workers would be required on occasion to perform other tasks such as equipment maintenance or replacement.

Solar PV projects use no water, gas, or fuels for the power generation process. The maintenance protocol is mainly routine inspections. Periodic routine maintenance activities consist of semi-annual or annual inspections, service, and cleaning.

Operation and maintenance would primarily require the use of pickup trucks and handheld tools, with very infrequent use of larger equipment for minor equipment maintenance. Pick-up trucks would be in daily use on the site during maintenance activities. Additional maintenance equipment may include forklifts, manlifts, crane trucks, water and chemical application

equipment for weed abatement or dust control. No heavy equipment is expected to be used during normal operation.

9. Surrounding Land Uses and Setting:

The project site is bounded by Alameda Creek and the Quarry Lakes Regional Recreation Area to the north, Sequoia Road to the west, the Union Pacific railroad tracks to the south and residential development to the east. Paseo Padre Parkway bisects the project site, separating Pit T1 from Pit T2. Surrounding land uses consist primarily of single-family residential and recreational uses associated with the Alameda Creek Trail and the Quarry Lakes Regional Recreation Area.

10. Other Public Agencies Whose Approval is Required (e.g., permits, or participation agreements):

- City of Fremont
- Regional Water Quality Control Board (RWQCB)
- Alameda County Flood Control and Water Conservation District
- California Department of Fish and Wildlife (CDFW)

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resource Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

In April 2020, the District provided formal notification to those California Native American tribes that are traditionally and culturally affiliated with the geographic area within which the proposed project is located pursuant to the consultation requirements of AB 52. Letters were sent to all tribal representatives identified by the Native American Heritage Commission. The District received no responses from the tribal representatives during the 30-day comment period.

2.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist in Chapter 3.0. These impacts would be reduced to less than significant with implementation of mitigation measures.

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

2.1 DETERMINATION

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a “Potentially Significant Impact” or “Potentially Significant Unless Mitigated” impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature



Date

8/19/2020

This page intentionally left blank

3.0 CEQA ENVIRONMENTAL CHECKLIST

3.1 AESTHETICS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☒	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

a. Would the project have a substantial effect on a scenic vista? (Less Than Significant Impact)

A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Aesthetic components of a scenic vista generally include (1) scenic quality, (2) sensitivity level, and (3) view access. Scenic vistas identified in the City of Fremont General Plan include Niles Canyon, the East Bay Hills, and San Francisco Bay. The proposed project is located in an area which is primarily characterized by urban development. Development in the project vicinity includes local roads, residential housing, and recreational uses. Paseo Padre Parkway bisects the project site, separating Pit T1 from Pit T2. The project site would be visible from several public viewpoints, including Paseo Padre Parkway and the Alameda Creek Trail.

The project site is located approximately 5 miles east of San Francisco Bay (Bay). Views of the Bay are limited from the project site itself due to its elevation relative to adjacent roadways and surrounding development. Vistas at the project site consist primarily of urban land uses, including residential buildings, roadways, landscaping and vegetation, and other infrastructure. However, the East Bay Hills can be seen to the north from the project area. Views of the project site from scenic areas generally blend in with surrounding urban development, especially when viewed from local roadways.

The project site is not part of a scenic vista nor is it located within the viewshed of a scenic vista. As outlined in Section 1.0, Project Information, the floating solar field would be mounted on, or molded into, floating structures that would float atop the Pit T1 and Pit T2 ponds. The solar panels would be mounted atop the floating structures, extending approximately 2 to 3 feet above the water surface. In addition, site topography is such that the water surface is set low below the sides of the ponds;

therefore, the solar panels would not extend even up to the level of the pond edge. Due to the low heights of the project features and the topography of the site, development of the proposed project (either its construction or operation) would not impact views of the East Bay Hills or the Bay. Therefore, implementation of the proposed project would not result in a substantial adverse effect on a scenic vista and this impact would be less than significant.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (Less Than Significant Impact)

Caltrans Landscape Architecture Program administers the Scenic Highway Program, contained in Streets and Highways Code Sections 260–263. In Alameda County, State Route 84 (Niles Canyon Road) from Mission Boulevard to I-680 near Sunol, and I-680 from Mission Boulevard in Fremont to the Contra Costa County line are officially designated State Scenic Highways. Although the project site is located just south of I-680, this segment of I-680 is not a designated State Scenic Highway; therefore, neither of these State Scenic Highways are located in proximity to the project site and would not be affected by project activities.

The City of Fremont General Plan includes goals, policies, and actions to protect scenic corridors and enhance gateways into the City. Scenic corridors identified in the City of Fremont General Plan include Paseo Padre Parkway, the Bay Area Rapid Transit (BART) line, Mission Boulevard, State Route 84, Niles Canyon Road, and I-680. Paseo Padre Parkway bisects the project site.

No historic buildings or rock outcroppings are located on the project site or in the surrounding vicinity. Furthermore, implementation of the proposed project would not result in the removal of or damage to scenic resources. Therefore, implementation of the proposed project would not damage scenic resources within a State or locally designated scenic roadway and this impact would be less than significant.

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? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? (Less Than Significant Impact)

The existing visual character in the vicinity of the project consists primarily of urban development and recreational open space associated with the Quarry Lakes Regional Recreation Area. The project site location is visible from surrounding public sites, including local roadways, and public facilities, including the Alameda Creek Trail and Quarry Lakes Regional Recreation Area.

Site grading, and facility construction would introduce heavy equipment, including rubber-tired tractors, disk/ tillers and vibratory rollers, track-driven excavators, graders, dump trucks, and end loaders, into the viewshed of all viewer groups creating temporary effects on views of and from the project site during the construction period. However, all temporary construction-related visual impacts such as construction equipment, staging areas, stockpile locations, and construction fencing would be removed following completion of construction.

The proposed project would consist of construction of the solar arrays (including PV panels and mounting hardware), fencing, access roads, and support buildings. The proposed project would cover a portion of the existing water surfaces with a concentration of solar collectors. The site would be surrounded by a chain link fence with landscape screening. Although this change would alter the existing visual character of the site, the site's new visual character would not significantly contrast with the landscape in which the project site is located. The Quarry Lakes Regional Recreation Area is, in essence, a water infrastructure site with recreation uses allowed. The reduction in the aesthetic quality of views would be limited because the solar arrays would be limited in height and their coloring would largely match the color of the water on which they would be placed. Although the height of the solar arrays would be relatively low (no more than 2 to 3 feet above the water surface) and the ponds themselves are sunk below the pond edge, the solar panels may be visible to nearby residents, recreationists on the Alameda Trail, and travelers on local roadways. However, the site perimeter is lined with large trees and shrubs; this vegetation provides screening of the project site from public roadways, the Alameda Trail, and adjacent residential development. The proposed project would not permanently degrade either the visual character of the project site or its surroundings. Therefore, implementation of the proposed project would have a less than significant impact associated with degradation of the existing visual character or quality of the project site and its surroundings.

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (Less Than Significant Impact)

The installation of the proposed solar facility atop the existing ponds would be visually compatible with adjacent urban development and would not create substantial light. New security lighting would likely be installed at the site access points, utilizing a new electric meter that would be installed as part of the proposed project. Security lighting would consist of 10-foot high, downcast, LED luminaires in order to minimize spillover. Lighting would be located at access points near public and/or private roadways with existing sources of nighttime light (e.g, street lights, vehicle head/taillights, lights associated with adjacent urban development).

The proposed project would not create a substantial new source of daytime glare. Glare is a phenomenon that exists when there is a very high degree of contrast between bright and dark areas in a field of view that makes it difficult for the human eye to adjust to differences in brightness. The proposed PV panels could reflect sunlight and cause glare. However, the solar field perimeter would be secured with an approximately 7-foot-high anti-climb fence, or similar, which would provide screening. In addition, large trees and ground cover/shrubs are located along the site perimeter and provide screening of the project site. PV collector panels are designed to absorb as much of the sun's energy as possible to generate electricity, and the panes that protect the collectors' surfaces are usually made of a specially formulated glass that permits 90 percent of the light to reach the collectors and to reflect only 10 percent of the light that falls on them. Consequently, solar collector panels are not as reflective as normal glass surfaces. Efficient operation of these panels involves maximizing sunlight absorption, leading to a minimization of glare. Therefore, the project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. This impact would be less than significant.

3.2 AGRICULTURE AND FORESTRY RESOURCES

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

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

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? (No Impact)

The proposed project would be constructed near the District's exiting Quarry Lakes facility.

The project site is classified as "Urban and Built-Up Land" on maps prepared by the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP).¹ Urban and Built-Up Land is occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. Common examples include residential, industrial,

¹ California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program. 2016. Alameda County Important Farmland 2016. Available online at: <http://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/ala16.pdf> (accessed April 16, 2020).

commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment and water control structures. No Farmland is mapped on or near the project site. Therefore, the project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use and no impact would occur.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract? (No Impact)

The project site is not zoned for agricultural use and is not under a Williamson Act contract.² Therefore, implementation of the project would not conflict with existing zoning for agricultural use, or a Williamson Act contract and no impact would occur.

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))? (No Impact)

The proposed project is not located on forest land or timberland, and would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. Therefore, implementation of the project would not result in any impacts to forestland.

d. Would the project result in the loss of forest land or conversion of forestland to non-forest use? (No Impact)

The project is not located on forest land or timberland, and would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. Therefore, implementation of the project would not result in any impacts to forestland.

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? (No Impact)

Refer to Sections 3.2.1.a and 3.2.1.c. The proposed project would not involve any other changes to the existing environment, which due to their location or nature, could result in conversion of Farmland to a non-agricultural use, or conversion of forest land to a non-forest use. Therefore, the proposed project would have no impact.

² California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program. 2015. Alameda County Williamson Act FY 2014-2015. Available online at: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Alameda_14_15_WA.pdf (accessed November 12, 2018).

3.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

The proposed project is located on the eastern side of the City of Fremont within the Hillside Area in Alameda County. This area is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which regulates air quality in the Bay Area. Air quality conditions in the Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen substantially. In Fremont, and the rest of the air basin, exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

Within the BAAQMD, ambient air quality standards for ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM₁₀, PM_{2.5}), and lead (Pb) have been set by both the State of California and the federal government. The State has also set standards for sulfate and visibility. The BAAQMD is under State non-attainment status for ozone and particulate matter standards. The BAAQMD is classified as non-attainment for the federal ozone 8-hour standard and non-attainment for the federal PM_{2.5} 24-hour standard. This analysis follows the methods outlined in the BAAQMD CEQA Air Quality Guidelines.³

*a. Would the project conflict with or obstruct implementation of the applicable air quality plan?
(Less Than Significant Impact)*

The applicable air quality plan is the BAAQMD's 2017 Clean Air Plan, adopted on April 19, 2017. In addition, the Regional Climate Protection Strategy is included in the 2017 Clean Air Plan, which identifies potential rules, control measures, and strategies that the BAAQMD can pursue to reduce greenhouse gases throughout the Bay Area. The 2017 Clean Air Plan/Regional Climate Protection Strategy serves as a roadmap for the district to reduce air pollution and protect public health and

³ Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.

the global climate. The 2017 Clean Air Plan also includes measures and programs to reduce emissions of fine particulates and toxic air contaminants.

Consistency with the 2017 Clean Air Plan is determined by whether or not the proposed project would result in significant and unavoidable air quality impacts or hinder implementation of control measures (e.g., excessive parking or preclude extension of transit lane or bicycle path). The proposed project would install new solar PV panels over former groundwater recharge ponds. Implementation of the project would generate approximately 3,150 kW AC solar PV between both Pit T1 and Pit T2.

The proposed project, as indicated in the analysis that follows, would not result in significant operational and construction-period emissions. The proposed project does not conflict with the goals of the Clean Air Plan in that the project would maximize clean energy generation. The proposed project would not conflict with any of the control measures identified in the plan or measures designed to bring the region into attainment. Additionally, the proposed project would not substantially increase the population, vehicle trips, or vehicle miles traveled. The proposed project would not hinder the region from attaining the goals outlined in the Clean Air Plan. Therefore, the proposed project would not inhibit or disrupt implementation of any control measures from the applicable Clean Air Plan and impacts would be less than significant.

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? (Less Than Significant with Mitigation Incorporated)

Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria pollutants: CO, O₃, NO₂, SO₂, Pb, and suspended particulate matter (PM). These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

According to BAAQMD's CEQA Guidelines, to meet air quality standards for operational-related criteria air pollutant and air precursor impacts, the project must not:

- Generate average daily construction emissions of reactive organic gases (ROG), nitrogen oxides (NO_x), or PM_{2.5} greater than 54 pounds per day or PM₁₀ exhaust emissions greater than 82 pounds per day;
- Contribute to CO concentrations exceeding the State ambient air quality standards; or
- Generate operation emissions of ROG, NO_x, or PM_{2.5} of greater than 10 tons per year or 54 pounds per day or PM₁₀ emissions greater than 15 tons per year or 82 pounds per day.

Construction and operation emissions associated with the proposed project are analyzed below. As previously discussed and further outlined below, the proposed project would not generate significant operation-period emissions. In addition, with implementation of Mitigation Measure AIR-1, described below, the project would not generate construction-period emissions in excess of

established standards. Therefore, the project would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

Construction Impacts. During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, ROG, directly-emitted particulate matter (PM_{2.5} and PM₁₀), and toxic air contaminants (TACs) such as diesel exhaust particulate matter.

Site preparation and project construction would involve grading, solar panel installation, paving, and other activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction sites. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM₁₀ emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM₁₀ emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site. The emissions listed in Table 3-A represent the maximum daily emissions generated during each construction phase. Detailed calculations are provided in Appendix A.

Table 3-A: Estimated Peak Day Construction Emissions

Construction Phase	Criteria Pollutant Emissions (lbs/day)							
	VOC	NO _x	CO	SO ₂	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}
Site Preparation	2.20	41.95	27.28	0.05	7.23	1.45	3.92	1.42
Grading	1.70	37.64	26.23	0.04	2.69	1.18	1.35	1.16
Building Construction	1.87	27.21	20.10	0.04	0.62	0.95	0.17	0.94
Paving	0.99	20.37	17.73	0.02	0.14	0.67	0.04	0.67
Peak Daily Emissions	2.20	41.95	27.28	0.05	7.23	1.45	3.92	1.42
BAAQMD Thresholds	54.00	54.00	--	--	82.00	--	54.00	--
Exceedance?	No	No	--	--	No	--	No	--

Source: Compiled by LSA Associates, Inc. (March 2020).

Note: Column total presents peak day construction emissions from the model results.

CO = carbon monoxide

NO_x = nitrogen oxides

PM₁₀ = particulate matter less than 10 microns in size

SO₂ = sulfur dioxide

lbs/day = pounds per day

PM_{2.5} = particulate matter less than 2.5 microns in size

BAAQMD = Bay Area Air Quality Management District

VOC = volatile organic compounds

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The BAAQMD has established standard measures for reducing fugitive dust emissions (PM₁₀ and PM_{2.5}). With the implementation of these Basic Construction Mitigation Measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust-related emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO₂, NO_x, volatile organic compounds (VOCs) and some soot particulate (PM_{2.5} and PM₁₀) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Construction emissions associated with the project would be less than significant for ROG, NO_x, PM_{2.5} and PM₁₀ exhaust emissions. Implementation of Mitigation Measure AIR-1 would reduce construction dust emissions to a less-than-significant level.

Mitigation Measure AIR-1: BAAQMD Basic Construction Mitigation Measures.

Consistent with the Basic Construction Mitigation Measures required by the BAAQMD, the following actions shall be incorporated into construction contracts and specifications for the project:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day with reclaimed water, if available.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Structural pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly visible sign shall be posted with the telephone number and person to contact at the Alameda County Water District regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Construction of the proposed project would not exceed daily emissions thresholds. Therefore, air quality impacts associated with construction of the proposed project would be less than significant.

Operational Emissions – Regional Emissions Analysis. Project operations would be automated and unstaffed, requiring minimal ongoing maintenance. Mobile source emissions result from maintenance vehicle trips and generate air pollutant emissions affecting the entire air basin. As discussed above, the proposed project would install new solar PV panels. Maintenance vehicle trips would only occur when the solar panels require periodic maintenance, consisting of semi-annual or annual inspections, service, and cleaning. Thus, the project would not result in a significant increase in the generation of vehicle trips that would increase air pollutant emissions. The project's energy requirements would be provided through the multi-site solar PV panel system, which generates its own power. Furthermore, the solar PV array would offset future emissions, which would otherwise be produced by non-renewable sources of electricity. Maintenance vehicle emissions would be minimal and would not exceed the pollutant thresholds established by the BAAQMD. Therefore, the proposed project would not be a significant source of operational emissions and this impact would be less than significant.

Localized CO Impacts. Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area with the introduction of the catalytic converter in 1975. No exceedances of the State or federal CO standards have been recorded at Bay Area monitoring stations since 1991. The BAAQMD 2017 CEQA Guidelines include recommended methodologies for quantifying concentrations of localized CO levels for proposed projects that would create mobile emissions (e.g., generate vehicle trips). A screening level analysis using guidance from the BAAQMD CEQA Guidelines was performed to determine the impacts of the project. The screening methodology provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD CEQA Guidelines, a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project maintenance traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

Implementation of the proposed project would not conflict with the Alameda County Countywide Transportation Plan for designated roads or highways, a regional transportation plan, or other agency plans. The project site is not located in an area where vertical or horizontal mixing of air is substantially limited. The project would not increase traffic volumes at intersections to more than 44,000 vehicles per hour and intersection level of service associated with the project would not decline with the project. Therefore, the proposed project would not result in localized CO concentrations that exceed State or federal standards and this impact would be less than significant.

As discussed above, with implementation of Mitigation Measure AIR-1, construction of the proposed project would not result in significant levels of any criteria air pollutants or pollutant precursors, including those the State is in non-attainment for (ozone and particulate matter). Operation of the project would not generate a considerable net increase of ozone, particulate matter, or any other criteria pollutant. Therefore, construction and operation of the project would not significantly contribute to cumulative levels of pollution in the region and impacts would be less than significant.

c. Would the project expose sensitive receptors to substantial pollutant concentrations? (Less Than Significant with Mitigation Incorporated)

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks.

According to the BAAQMD, a project would result in a significant impact if it would: individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10.0 in one million, increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient PM_{2.5} increase greater than 0.3 micrograms per cubic meter (µg/m³). A significant cumulative impact would occur if the project in combination with other projects located within a 1,000-foot radius of the project site would expose sensitive receptors to TACs resulting in an increased cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the hazard index (chronic), or an ambient PM_{2.5} increase greater than 0.8 µg/m³ on an annual average basis. Impacts from substantial pollutant concentrations are discussed below and would be less than significant.

The closest sensitive receptors include the single-family residential uses located approximately 100 feet west and east of the project site. The nearest school to the proposed project would be Centerville Junior High School, located approximately 0.3 miles (1,600 feet) south of the project site. As described in Section 3.3.1(b) above, construction of the proposed project may expose surrounding sensitive receptors to airborne particulates, as well as a small quantity of construction equipment pollutants (i.e., usually diesel-fueled vehicles and equipment) only during the construction period lasting no more than 8 months. However, construction contractors would be

required to implement Mitigation Measure AIR-1. With implementation of this mitigation measure, project construction emissions would be below the BAAQMD significance thresholds and, once the project is constructed, the project would not be a source of substantial emissions. Therefore, sensitive receptors are not expected to be exposed to substantial pollutant concentrations during project construction or operation, and potential impacts would be considered less than significant.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (Less Than Significant Impact)

During project construction, some odors may be present due to diesel exhaust. However, these odors would be temporary and limited to the construction period of six to eight months. The proposed project would not include any activities or operations that would generate nuisance odors and once operational, the project would not be a source of odors. Therefore, the proposed project would not create nuisance odors affecting a substantial number of people, and this impact would be less than significant.

3.4 BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. 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?	☐	☒	☐	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

A biological survey was conducted on March 12, 2019 to assess current habitat conditions and to evaluate the potential for the site to support special-status species, natural communities, and jurisdictional waters.

Prior to conducting fieldwork, an official species list was obtained from the United States Fish and Wildlife Service (USFWS), which identifies threatened, endangered, proposed and candidate plant and wildlife species, as well as proposed and final designated critical habitat, that may occur within the boundary of the project site and/or may be affected by the project. The California Natural Diversity Database (CNDDB) was queried for records of special-status plant and wildlife species and sensitive habitat occurrences within 5 miles of the project site. The *Alameda County Breeding Bird Atlas*⁴ was reviewed. A list of all the vertebrates that have been observed while working nearby on District's Rubber Dam #1 and #3 projects in 2018 and 2019 was also reviewed.

⁴ Richmond, B., H. Green, and D.C. Rice. 2011. Alameda County Breeding Bird Atlas. Golden Gate Audubon Society and Ohlone Audubon Society.

Refer to Tables B-1 and B-2 (provided in Appendix B) for a complete list of special-status plant and wildlife species that were analyzed for potential to occur in the project area. Plant and wildlife communities and habitats identified at the project site are described below.

Vegetation. Vegetation communities present on and adjacent to the project site consist mainly of ruderal species and ornamental landscape plants. The banks of the pit ponds have some native species as well, such as California poppy (*Eschscholzia californica*), mule fat (*Baccharis salicifolia*) and coast live oak (*Quercus agrifolia*) that may have colonized the area naturally or been planted. Non-native plants observed included invasive species such as Pampas grass (*Cortaderia selloana*).

Wildlife. Terrestrial wildlife expected to occur in the area include native and non-native wildlife species that are adapted to developed, human-modified landscapes. Native terrestrial species observed around the pits included western fence lizard (*Sceloporus occidentalis*) and California ground squirrel (*Otospermophilus beecheyi*). The shed antlers of a black-tailed deer (*Odocoileus hemionus*) were seen on the northern bank of Pit T2. Common urban-adapted mammals such as northern raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), Norway rat (*Rattus norvegicus*), house mouse (*Mus musculus*), and Virginia opossum (*Didelphis virginiana*) might live on or move through the site. No evidence of bats (e.g., guano, staining) was detected.

Nine aquatic turtles that could not be identified to species were observed in Pit T1. Additionally three turtles were able to be identified as non-native red-eared sliders (*Trachemys scripta elegans*) and one non-native Texas spiny softshell turtle (*Apalone spinifera*) were observed in Pit T1.

Several waterbirds use the ponds. Birds that were observed in and around the pit ponds during the survey include mallards (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), Canada goose (*Branta canadensis*), American coot (*Fulica americana*), and killdeer (*Charadrius vociferus*). The vegetation on the project site provides a place for a variety of native migratory birds to feed and nest. Other common small bird species probably use the site throughout the year. Although no nests were detected, raptors such as the Cooper's hawk (*Accipiter cooperi*) may nest in the trees adjacent to the site.

Non-native grass carp (*Ctenopharyngodon idella*) were observed in both Pit T1 and Pit T2. It is likely that other non-native fishes are also present in the pit ponds.

Potentially Jurisdictional Features. Pit T1 and Pit T2 are potentially jurisdictional features. The ponds would likely be considered Waters of the State, which includes all surface water within the boundaries of the State, including both natural and artificial waterbodies. (California Water Code §13050(e)). However, Pits T1/T2 are not considered Waters of the United States. Under the Clean Water Act, small isolated bodies of water like Pits T1 and T2 are not regulated by the Corps unless they are connected or adjacent to federally-regulated waters. Until 2009, the pits received water from Alameda Creek for groundwater recharge. The pipeline between Pit T1 and Alameda Creek was mortar plugged when Rubber Dam #2 was decommissioned in 2009. The pits are not currently hydrologically connected to Alameda Creek, but they are connected to each other via a culvert under Paseo Padre Parkway.

- 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 Game or U.S. Fish and Wildlife Service? (**Less Than Significant with Mitigation Incorporated**)*

For the purposes of this document, special-status species are defined as follows:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA);
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California Endangered Species Act (CESA);
- Plant species assigned to California Rare Plant Ranks 1A, 1B, 2A, and 2B;
- Animal species designated as Species of Special Concern or Fully Protected by the California Department of Fish and Wildlife (CDFW);
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the CEQA guidelines; or
- Species considered to be a taxon of special concern by local agencies.

Plants. The USFWS species list and CNDDDB query generated a list of 16 special-status plant species that either historically or currently occur within the general area of the site. These species and their potential to occur on the site are detailed in Table B-1 (provided in Appendix B). As shown in Table B-1, none of these species has any potential to occur on the site.

Wildlife. The USFWS species list and CNDDDB query generated a list of 27 special-status animal species that either historically or currently occur within the general area of the site. These species and their potential to occur on the site are detailed in Table B-2 (provided in Appendix B). As detailed in Table B-2, these species —bank swallow (*Riparia riparia*) and western pond turtle (*Emys marmorata*) — have some potential to occur on the site. These species are discussed in more detail below. The site lacks essential habitat features for all of the other species, and is separated from known populations by development including major roadways.

Bank swallow is listed as Threatened under CESA. The species nests in loose soil in cliffs and banks along streams, rivers, and lakes. The birds feed on insects they catch in flight, often over water. The cliffs on the southern side of Pit T1 may be suitable for nesting. The species is rarely seen in Alameda County however. The last confirmed nesting in Alameda County was in 1929.⁵ LSA biologists have not observed the species during extensive work nearby in Alameda Creek,

⁵ Richmond, B., H. Green, and D.C. Rice. 2011. Alameda County Breeding Bird Atlas. Golden Gate Audubon Society and Ohlone Audubon Society.

whereas tree swallows (*Tachycineta bicolor*) and cliff swallows (*Petrochelidon pyrrhonota*) have been observed.

Western pond turtle is a California Species of Special Concern. Female pond turtles excavate nests in friable soils in areas with short or sparse vegetation and usually on south or west facing slopes to allow for exposure to direct sunlight. After depositing the eggs, the female covers them and tamps the soil down. In northern California the hatching turtles may emerge in the fall, or overwinter in the nest and emerge in the spring. Western pond turtle numbers in Pits T1 and T2 and the surrounding area are likely already suppressed due to competition from the non-native red-eared slider. Red-eared sliders compete with food, and displace the native western pond turtle.

As described above, two special-status species, the bank swallow and western pond turtle, could occur on the site. The project site is not located within designated critical habitat for any federally listed species.

Construction of the proposed project could adversely impact the bank swallow if they are present in the area and other migratory bird species by disturbing active nests. Implementation of Mitigation Measure BIO-1 would reduce impacts to the species to a less-than-significant level.

Mitigation Measure BIO-1: Measures to Protect Bank Swallow. If feasible, construction activities shall occur during the non-breeding season (September 1– January 31). If such activities are scheduled during the breeding season (February 1 – August 31), a qualified biologist shall conduct a preconstruction nest survey of all cliffs, trees and shrubs and other suitable nesting habitat in and within 300 feet of the limits of work. The survey shall be conducted not more than 5 days prior to the start of work. If the survey indicates the potential presence of nesting bank swallow or other birds, the biologist shall determine an appropriately sized buffer around the nest and no work shall be allowed in this buffer until the young have successfully fledged. The size of the nest buffer shall be determined by a qualified biologist in consultation with CDFW and shall be based on the nesting species and its sensitivity to disturbance. In general, buffer sizes of up to 300 feet for raptors and 50 feet for other birds should suffice to prevent disturbance, but these buffers may be increased or decreased, as appropriate, depending on the bird species and the level of disturbance anticipated near the nest.

Construction of the proposed project could adversely impact the western pond turtle. During construction, western pond turtles would likely flee any humans they see, altering their normal behavior and impacting their ability to bask and thermoregulate. Installation of the floating solar array atop the ponds would reduce the amount of open-water habitat for this species. Installation of the floating solar array atop the ponds would also reduce the amount of phototrophic organisms, which form the bottom of the food chain, leading to a reduction in the amount of algae and aquatic invertebrates that the turtles eat. Thus, installation of the solar panels would reduce the amount of available food and habitat for western pond turtles. Potential dredging of the bed of the ponds could injure or kill western pond turtles, particularly if the work occurs during the cool winter

months when turtles may be hibernating underwater. Implementation of Mitigation Measure BIO-2 would reduce potential impacts to western pond turtle to a less-than-significant level.

Mitigation Measure BIO-2: Measures to Protect Western Pond Turtle. Prior to commencement of construction, a qualified biologist with the necessary permits shall conduct a turtle trapping program in Pit T1 and Pit T2, following a generally accepted trapping protocol such as those outlined in Bury et. al.⁶ or USGS.⁷ The trapping shall occur during spring and early summer when turtles are active. Non-native turtles shall be removed and permitted relocation adoption through an organization such as the California Turtle & Tortoise Club. If relocation or adoption is not permitted or practicable, the non-native turtles shall be euthanized. Humane methods for euthanasia shall be used by following the American Veterinary Medical Association's *Guidelines for Euthanasia of Animals: 2020 Edition*. Non-native frogs and fish that are potential predators shall also be euthanized. The trapping shall continue for as long as practicable to remove as many non-native turtles as possible. All western pond turtles that are captured shall be processed and immediately released within 100 feet of the point of capture. All captured turtles shall be screened for the potential presence of ulcerative shell disease. The results of the trapping shall be submitted to CDFW.

By removing red-eared sliders and other non-native species from the area, the predation and competition effects on western pond turtles would be reduced. The trapping study would also contribute to the knowledge of the species and document the presence or absence of ulcerative shell disease, thereby informing management considerations and benefitting the species.

- 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, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (No Impact)*

The project would not affect any rivers or riparian habitat. No sensitive natural communities are located within the project site.

- 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? (Less Than Significant with Mitigation Incorporated)*

Pit T1 and Pit T2 are potentially jurisdictional features subject to regulation by the Regional Water Quality Control Board (RWQCB), and CDFW. When a discharge is proposed to waters outside of federal jurisdiction, the RWQCB regulates the discharge under the Porter-Cologne Water Quality

⁶ Bury, R.B., H.H. Welsh Jr., D.J. Germano, and A.T. Ashton (Editors). 2012. Western Pond Turtle: Biology, Sampling Techniques, Inventory and Monitoring, Conservation, and Management. Society for Northwestern Vertebrate Biology, Olympia, Washington.

⁷ U.S. Geological Survey (USGS). 2006. Draft USGS Western Pond Turtle (*Emys marmorata*) Trapping Survey Protocol for the Southcoast Ecoregion. Sacramento, California, 2006.

Control Act through the issuance of Waste Discharge Requirements (WDRs). Fish and Game Code Section 1602 requires any entity to notify CDFW before beginning any activity that may substantially change or use any material from the bed, channel, or bank of any river, stream, or lake. The anchors used to secure the pontoons would be considered fill of/discharge to waters of the State because they would raise the elevation of the bed of the pond. Potential dredging the beds of the ponds to create a level surface for installation of the solar arrays would be considered a substantial change. Construction of the proposed project would fill/discharge to waters of the State; however, this impact would be less than significant with implementation of the following mitigation measure.

Mitigation Measure BIO-3: Mitigation for Fill of Waters of the State. Prior to construction, the impact to jurisdictional waters shall be verified. Any work within water features under the jurisdiction of the CDFW, and/or RWQCB would be a regulated activity that would require permits from the RWQCB (Waste Discharge Requirement), and CDFW (Fish and Game Code Section 1602 Streambed Alteration Agreement). Fill of jurisdictional features shall be mitigated at a minimum ratio of 1:1 (no net loss). All terms of the permits shall be implemented as a condition of the project.

- 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? (Less Than Significant with Mitigation Incorporated)*

The project is unlikely to interfere with the movement of native fish, which are likely absent from the pit ponds. The ponds support a large population of non-native grass carp, and may also support non-native predatory fish that were likely introduced for sport fishing.

Several native bird species could nest in the cliffs, trees, shrubs, and bare ground surrounding Pit T1 and Pit T2. Tree removal and construction activities on the site may result in the destruction of nests and/or cause nest abandonment. Implementation of Mitigation Measure BIO-1, identified above, would reduce impacts on nesting birds to a less-than-significant level.

- e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (No Impact)*

The City of Fremont has a tree protection ordinance, but no protected trees would be removed as part of the proposed project. Trees that do not meet the minimum size to be protected may be removed from the eastern bank of Pit T1 to allow the assembly and installation of the solar panels. Therefore, implementation of the proposed project would not conflict with any local biological protection policies or ordinances, including tree ordinances and there would be no impact.

- 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? (No Impact)*

The project area is not subject to any adopted habitat conservation plan or natural community conservation plan. Therefore, the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Plan, or other approved local, regional, or State habitat conservation plan and no impact would occur.

3.5 CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (Less Than Significant with Mitigation Incorporated)

For a cultural resource to be considered a historical resource (i.e., eligible for listing in the California Register of Historical Resources), it generally must be 50 years or older. Under CEQA, historical resources can include pre-contact (i.e., Native American) archaeological deposits, historic-period archaeological deposits, historic buildings, and historic districts. The California Environmental Quality Act (CEQA) requires that agencies considering projects that are subject to discretionary action shall consider the potential impacts on cultural resources that may occur from project implementation (see Section 15064.5 and Question V of Appendix G of the CEQA Guidelines).

To identify cultural resources at the project site, the following tasks were: (1) a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System; (2) a review of historical maps and aerial photographs to assess the potential for buried pre-contact and historic-period archaeological deposits; and (3) a field survey of the project site by a qualified archaeologist. The District undertook consultation outreach with California tribal organizations pursuant to the requirements of AB 52.

Records Search. The NWIC records search was conducted on February 27, 2020. The search indicated that there are no recorded cultural resources within the project site and 22 resources within a 0.25-mile radius. Of the 22 resources within the search radius, one, a portion of Alameda Creek (P-01-011827), is adjacent to Pit T1 and Pit T2. At least four studies have been conducted in portions of the Pit T1 and Pit T2 project sites.

Field Survey. A field survey of the project site was conducted on March 12, 2019. Exposed soils were inspected for pre-contact (e.g., stone tools, debitage, groundstone, and shell beads), historic-period materials (e.g., metal, glass, ceramics), and soil discolorations that might indicate the presence of archaeological deposits.

Pits T1 and T2 function as groundwater recharging ponds and contained water at the time of survey. Survey coverage was therefore restricted to the perimeter of the pits with the exception of the south and west edges of T2, which were unstable cliffs and avoided due to safety concerns. A single transect was walked around T1; depending on what was accessible, the transect followed the top of

the slope above the water or an access road and narrow trail bisecting the slope in different areas. Ground visibility varied due to vegetation cover.

One transect was walked on the north and east sides of Pit T2 along Paseo Padre Parkway. Because the slope between the water and road was generally steep and overgrown with thick grass, the transect largely followed the guardrail at the top of the slope, where soil was exposed in the landscaping. The transect dropped onto the slope in areas where the gradient was more gradual and rodent backdirt was visible. Only recent trash was observed in both pits.

Originally sand mining pits, Pits T1 and T2 comprise a heavily altered landscape. The areas accessible above the water consist of cut and/or fill slopes, and it is unlikely that any intact ground surface remains. The modification of the landscape is documented in historical maps and aerial photos, which show the project area previously situated in cultivated fields and orchards on the rolling floodplains of Alameda Creek, which was located well to the north. By 1961, gravel mining had encroached with a pit extending from the north into what is now Pit T1. By 1973, Alameda Creek had been channelized to its current location just north of Pit T1, and both pits had been excavated and filled with water. At that time, and continuing at least until 1980, Pit T1 consisted of two pits/ponds separated by a road.

Summary of Results. The NWIC records search and field survey did not identify cultural resources on the project site. One cultural resource, a portion of Alameda Creek (P-01-011827), is adjacent to Pit T1 and Pit T2. Based on the background research and field survey, it is highly unlikely that archaeological resources would be found during project-related ground disturbance in the extremely altered landscape of pits T1 and T2.

As described above, the NWIC records search and field survey did not identify cultural resources on the project site. Despite the negative results of the field survey, it cannot be entirely ruled out that archaeological cultural resources could be encountered during project construction activities at the project site.

Should archaeological deposits be encountered during project ground disturbance, a substantial adverse change in the significance of a historical resource would occur from its demolition, destruction, relocation, or alteration such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5(b)(1)). To mitigate this potential impact, the District would be required to implement Mitigation Measure CULT-1: Accidental Discovery of Archaeological Historical Resources. With implementation of Mitigation Measure CULT-1, potential impacts to historical resources would be reduced to less than significant.

Mitigation Measure CULT-1: Accidental Discovery of Archaeological Historical Resources. Should an archaeological deposit be encountered during project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology contacted to assess the situation, determine if the deposit qualifies as a historical resource, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. If the deposit is found to be significant (i.e., eligible for listing in the

California Register of Historical Resources), the District shall be responsible for funding and implementing appropriate mitigation measures. Mitigation measures may include recording the archaeological deposit, data recovery and analysis, and public outreach regarding the scientific and cultural importance of the discovery. Upon completion of the selected mitigations, a report documenting methods, findings, and recommendations shall be prepared by the District, and submitted to the Northwest Information Center at Sonoma State University. Significant archaeological materials shall be submitted to an appropriate local curation facility and used for future research and public interpretive displays, as appropriate.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Less Than Significant with Mitigation Incorporated)

According to the CEQA Guidelines, “When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource” (CEQA Guidelines Section 15064.5(c)(1)). Those archaeological sites that do not qualify as historical resources shall be assessed to determine if they qualify as “unique archaeological resources” (California PRC Section 21083.2).

Archaeological deposits identified during project construction shall be treated by the District—in consultation with a qualified archaeologist meeting the Secretary of the Interior’s Professional Qualifications Standards for Archeology—in accordance with Mitigation Measure CULT-1. With implementation of Mitigation Measure CULT-1, identified above, impacts to archaeological resources would be less than significant.

c. Would the project disturb any humans remains, including those interred outside of formal cemeteries? (Less Than Significant Impact)

Based on previous archaeological investigation and analysis, there is a low potential for the disturbance of archaeological cultural resources or human remains as a result of the proposed project. In the event that human remains are identified during project activities, these remains would be required to be treated in accordance with Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the Public Resources Code, as appropriate. Section 7050.5 of the California Health and Safety Code states that, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner’s authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification. The NAHC will identify a Native American Most Likely Descendent (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Compliance with the California Health and Safety Code would ensure that impacts to human remains would be less than significant.

3.6 ENERGY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

California is one of the lowest per capita energy users in the United States, ranked 48th in the nation, due to its energy efficiency programs and mild climate.⁸ The project site is located within Alameda County, California. The California Energy Commission (CEC) provides electricity and natural gas consumption data for the State of California and by County. Based on the CEC data, in 2018, California consumed approximately 281,120 gigawatt-hours (GWh) or 281,120,000,000 kWh.⁹ Of this total, Alameda County consumed 10,417 GWh or 10,417,100,000 kWh.¹⁰ In addition, in 2018, California consumed approximately 12,638 million therms or 12,638,000,000 therms, while Alameda County consumed approximately 377 million therms or approximately 377,001,740 therms.¹¹

Gasoline is the most used transportation fuel in California with 15.5 billion gallons sold in 2018. Gasoline fuel is used by light-duty cars, pickup trucks, and sport utility vehicles. Diesel is the second most-used fuel in California with 1.8 billion gallons sold in 2018. Diesel fuel is used primarily by heavy-duty trucks, delivery vehicles, buses, trains, ships, boats and barges, farm equipment, and heavy-duty construction and military vehicles.¹² Both gasoline and diesel are primarily petroleum-based, and their consumption releases greenhouse gas (GHG) emissions, including carbon dioxide (CO₂) and nitrous oxide (N₂O). The transportation sector is the single largest source of GHG emissions in California, accounting for 41 percent of all inventoried emissions in 2017.¹³ To reduce

⁸ United States Energy Information Administration (EIA). 2018a. "California -Profile Overview." Last modified: January 16, 2020. <https://www.eia.gov/state/?sid=CA>

⁹ California Energy Commission. 2018. Energy Consumption Data Management Service. Electricity Consumption by County. Available online at: <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>. (accessed March 2020).

¹⁰ Ibid.

¹¹ California Energy Commission. 2018. Energy Consumption Data Management Service. Gas Consumption by County. Available online at: <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>. (accessed March 2020).

¹² California Energy Commission (CEC). 2019. California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets, https://www.energy.ca.gov/almanac/transportation_data/diesel.html

¹³ California Air Resources Board (CARB). 2019. California Greenhouse Gas Emission Inventory Program. California Greenhouse Gas Emissions for 2000 to 2017, Trends of Emissions and Other Indicators. 2019 Edition. Webpage last reviewed by CARB in 2019. Website: <https://ww2.arb.ca.gov/our-work/programs/ghg-inventory-program>

Statewide vehicle emissions, California requires all motorists to use California Reformulated Gasoline, which is sourced almost exclusively from in-State refineries.

Regulatory Setting. In 2002, the Legislature passed Senate Bill 1389, which required the CEC to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission (ZE) vehicles and their infrastructure needs, and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

The CEC recently adopted the 2019 Integrated Energy Policy Report.¹⁴ The 2019 Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs. The 2019 Integrated Energy Policy Report covers a broad range of topics, including implementation of Senate Bill 350 - Clean Energy and Pollution Reduction Act, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, preliminary transportation energy demand calculations for proposed projects, renewable gas (in response to Senate Bill 1383), updates on California electricity reliability, natural gas outlook, and climate adaptation and resiliency. Alameda County relies on the State integrated energy plan and does not have its own local plan to address renewable energy or energy efficiency.

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation? (Less Than Significant Impact)

The following section describes the proposed project's estimated construction and operation related energy consumption. The BAAQMD has not addressed energy thresholds for construction in their CEQA Guidelines; however, the BAAQMD encourages quantification and disclosure. Thus, construction emissions are discussed in this section. As discussed below, the proposed project would not generate substantial energy consumption or waste energy that would have a significant effect on the environment and this impact would be less than significant.

Construction-Period Energy Use. The anticipated construction schedule assumes that the proposed project would be built over six to eight months. The proposed project would require site preparation, grading, solar panel installations, and surface paving activities during construction.

¹⁴ California Energy Commission, 2020. 2019 Integrated Energy Policy Report. California Energy Commission. Publication Number: CEC-100-2019-001-CMF. January.

Construction of the proposed project would require energy for the manufacture and transportation of construction materials, preparation of the site for grading and building activities, and installation of solar panels and infrastructures. All or most of this energy would be derived from non-renewable resources. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities. However, construction activities are not anticipated to result in an inefficient use of energy as gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the proposed project. Construction of the project would require approximately 40 gallons of gasoline and 20,031 gallons of diesel fuel.¹⁵¹⁶ Energy (i.e. fuel) usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. Construction of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources and construction-related impacts would be less than significant.

Operational Energy Use. Proposed project operations would be automated and unstaffed, and an existing off-site operations center would continuously monitor the production and condition of the solar PV system. The operations center would dispatch maintenance staff to the site on an as-needed basis, which would require minimal vehicle fuel usage. In addition, the new solar panels would be designed to achieve a clean energy goal of the District. Implementation of the project would generate approximately 3,150 kW AC of renewable energy. The net energy indicates that the total amount of energy used by District on an annual basis would be approximately equal to the amount of renewable energy generated on site or through renewable, non-grid, purchase agreements with a local power utility. As such, operation of the proposed project would result in an increase in the consumption of electricity derived from renewable resources as compared to existing non-renewable resources. The gains through energy efficiency would reduce energy consumption and greenhouse gas production at the proposed project sites.

Therefore, operation of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources and operational impacts would be less than significant.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (Less Than Significant Impact)

Energy consumption on the project site during construction and operation would not increase when compared to existing conditions. In addition, the project would be consistent with California's Renewable Portfolio Standard, which has an ultimate target of supplying 100 percent of retail electricity from eligible renewable energy resources by 2045. Because the project's total impact on regional energy supplies would be minor, the proposed project would not conflict with or obstruct

¹⁵ United States Environmental Protection Agency. 2018. Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES2014b . July 2018. Available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P100UXEN.pdf>.

¹⁶ United States Department of Transportation, Bureau of Transportation Statistics. 2018. National Transportation Statistics 2018. Available at: <https://www.bts.gov/sites/bts.dot.gov/files/docs/browse-statistical-products-anddata/national-transportation-statistics/223001/ntsntire2018q4.pdf>.

California's energy conservation plans as described in the CEC's 2019 Integrated Energy Policy Report and impacts would be less than significant.

3.7 GEOLOGY AND SOILS

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

a. *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:*

i. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. (Less Than Significant Impact)*

Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. The location of surface rupture generally can be assumed to be along an active or potentially active major fault trace.

The State of California enacted the Alquist-Priolo Fault Zoning Act in 1972, requiring the State Geologist to delineate Earthquake Fault Zones (EFZs) along known active faults that have high potential for fault rupture. The project site is not located within a designated EFZ.¹⁷ Therefore, the

¹⁷ California, State of. Department of Conservation, 2018. California Earthquake Hazards Zone Application. Website: maps.conservation.ca.gov/cgs/EQZApp/app/ (accessed April 16, 2020).

proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving the rupture of a known earthquake fault.

ii. Strong seismic ground shaking? (Less Than Significant Impact)

The project site and the entire San Francisco Bay Area is in a seismically active region subject to strong seismic ground shaking. Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground-shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The magnitude of a seismic event is a measure of the energy released by an earthquake; it is assessed by seismographs that measure the amplitude of seismic waves. The intensity of an earthquake is a subjective measure of the perceptible effects of a seismic event at a given point. The Modified Mercalli Intensity (MMI) scale is the most commonly used scale to measure the subjective effects of earthquake intensity. It uses values ranging from I to XII.¹⁸ The closest fault to the project site is the Hayward Fault, located approximately 1 mile to the west.

Mapping has been performed by the Association of Bay Area Governments (ABAG) for the likely shaking intensities in the Bay Area that would have a 10 percent chance of occurring in any 50-year period. A large earthquake (magnitude 6.7 or greater) on one of the major active faults in the region would generate violent (MMI 9) ground shaking at the project site.¹⁹

The proposed project would be designed and constructed using standard construction procedures and in accordance with the California Building Code (CBC). No businesses or residences would be constructed as part of the proposed project and people would not regularly access the project site upon completion. Therefore, the proposed project would not expose people or structures to substantial effects related to ground-shaking and this impact would be less than significant.

iii. Seismic-related ground failure, including liquefaction? (Less Than Significant Impact)

Liquefaction is the transformation of saturated, loose, fine-grained sediment to a fluid-like state because of earthquake shaking or other rapid loading. Soils most susceptible to liquefaction are loose to medium dense, saturated sands, silty sands, sandy silts, non-plastic silts and gravels with poor drainage, or those capped by or containing seams of impermeable sediment.

CGS has mapped Seismic Hazard Zones that delineate areas susceptible to liquefaction and/or landslides that require proposed new developments in these areas to conduct additional investigation to determine the extent and magnitude of potential ground failure. According to

¹⁸ United States Geological Survey, 2018. The Modified Mercalli Intensity Scale. Available: www.usgs.gov/natural-hazards/earthquake-hazards/science/modified-mercalli-intensity-scale?qt-science_center_objects=0#qt-science_center_objects, (accessed February 18, 2020).

¹⁹ Association of Bay Area Governments (ABAG), 2020a. Shaking Scenarios Map, Available: mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8, (accessed April 16, 2020).

mapping by CGS,²⁰ the project site is not located within a Seismic Hazard Zone for liquefaction. Mapping performed by ABAG indicates that Pits T1/T2 are designated as an area of low liquefaction susceptibility. Areas surrounding the pits themselves are designated as having moderate to high liquefaction susceptibility.²¹ As the solar facility would be primarily located within the ponds themselves, and the project would require very limited ground disturbance, the impact of seismic-related ground failure, including liquefaction, would be less than significant.

iv. Landslides? (Less Than Significant Impact)

According to by CGS,²² the project site is located within a Seismic Hazard Zone for landslide. The project area is generally level, with the exception of the levees around the ponds themselves. The project site is located within a developed urban area and is not located within an earthquake-induced or rainfall-induced landslide zone, according to ABAG.²³ The proposed project would not involve any work on the levee face and would require limited ground disturbance. Therefore, the proposed project is not likely to adversely impact persons or structures due to landslides. This impact would be less than significant.

b. Would the project result in substantial soil erosion or the loss of topsoil? (Less Than Significant with Mitigation Incorporated)

The potential for soil erosion exists during the period of earthwork activities and between the time when earthwork is completed and new vegetation is established or hardscape is installed. As the solar facility would be installed on the ponds themselves, limited ground-disturbing activities would be required for installation of access roads, trenching for electric conduit connection, etc. However, initial construction activities have the potential to result in erosion, runoff, and sedimentation. However, construction specifications require the preparation of a Stormwater Pollution and Prevention Plan (SWPPP) prior to any ground disturbance activities as required by the Construction General Permit (refer to Section 3.10, Hydrology and Water Quality for a more detailed description). The SWPPP would provide the details of the erosion control measures to be applied on the project site during the construction period, including Best Management Practices (BMPs) for erosion control that are recognized by the Regional Water Quality Control Board (RWQCB). Compliance with State and local regulations regarding stormwater during construction, including preparation and implementation of a SWPPP, as required by Mitigation Measures WQ-1 and WQ-2 below, would

²⁰ California Geological Survey, 2003. Earthquake Zones of Required Investigation, Niles Quadrangle, Available: maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps, (accessed April 16, 2020).

²¹ ABAG, 2020b. Liquefaction Susceptibility Map, Available: mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8, (accessed April 16, 2020).

²² California Geological Survey, 2003. Earthquake Zones of Required Investigation, Niles Quadrangle, Available: maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps, (accessed April 16, 2020).

²³ ABAG, 2020c. Interactive Landslide Hazards Map. Available online at: mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8 (accessed March 21, 2020).

ensure that the proposed project would result in less-than-significant impacts to geology and soils during construction.

- 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? (Less Than Significant Impact)*

Please refer to Section 3.7.a. The proposed solar facility would be designed and constructed in accordance with standard engineering practices and the CBC. The project site is not anticipated to become unstable as a result of the proposed project, or potentially result in on- or off-site landslides, liquefaction, or lateral spreading. Therefore, the proposed project would not result in a geologic hazard from landslide, lateral spreading, subsidence, liquefaction or collapse and the impact is less than significant.

- 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? (Less Than Significant Impact)*

Expansion and contraction of volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. Expansive soils are common throughout California and can cause damage to foundations and slabs unless properly treated during construction.

The majority of the project site consists of open water. Soil types found on the project site include Yolo silt loam (0 to 3 percent slopes, dry), and pits/gravel according to the Natural Resources Conservation Service web soil survey.²⁴ The shrink-swell potential for Yolo silt loam is moderate.²⁵ The proposed project would be designed and constructed using standard construction methods and in compliance with the CBC. In addition, the proposed solar facility would be located atop the ponds themselves; therefore, risks associated with expansive soil would be limited to upland features of the proposed project (e.g., access roads, fencing, utility connections). Therefore, expansive soils, would not pose a risk to life or property, and this impact would be less than significant.

- e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? (No Impact)*

Implementation of the project would not include installation of septic tanks or alternative wastewater disposal systems. Therefore, there would be no impact to soils and wastewater disposal.

²⁴ United States Department of Agriculture Soil Conservation Service, 2019. Web Soil Survey. Available online at: websoilsurvey.sc.egov.usda.gov/App/HomePage.htm (accessed April 16, 2020).

²⁵ United States Department of Agriculture Soil Conservation Service, 1975. Soil Survey of Alameda County, Western Part. Available online at: www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/CA610/0/alameda.pdf (accessed November 12, 2018).

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less Than Significant With Mitigation Incorporated)

The proposed project would not require deep excavation or trenching that would likely encounter paleontological resources. However, in the event that fossil remains are encountered, or paleontologically sensitive bedrock (Monterey Formation or Briones Sandstone) is exposed, impacts to paleontological resources could occur. Implementation of Mitigation Measure GEO-1 would reduce potential impacts to paleontological resources to less than significant.

Mitigation Measure GEO-1: Accidental Discovery of Paleontological Resources. If fossil remains or paleontologically sensitive bedrock is exposed during project construction, all ground-disturbing activities within 25 feet shall be redirected and a qualified paleontologist shall be contacted to review the find. The project team (the District and the paleontologist) shall develop and implement a plan for impact avoidance. Should avoidance be infeasible due to engineering requirements, the project team shall develop and implement a plan to offset the loss of paleontological data through the implementation of a data recovery project, including paleontological recovery. If determined to be a unique paleontological resource, the potentially significant impacts caused by construction may be mitigated through monitoring during construction activity (beyond the area of the initial find), and, if warranted by potential finds, recovery of fossils; preservation, stabilization, and identification of collected resources; curation of resources into a museum repository; and preparation of a final report documenting the monitoring methods and results, to be submitted to the District.

3.8 GREENHOUSE GAS EMISSIONS

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

Greenhouse gases (GHGs) are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO₂);
- Methane (CH₄);
- Nitrous oxide (N₂O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs);
- Sulfur Hexafluoride (SF₆); and
- Nitrogen Trifluoride (NF₃).

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO₂, methane, and N₂O, some gases, like HFCs, PFCs, SF₆, and NF₃ are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of

each gas is measured relative to CO₂, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO₂ over a specified time period. GHG emissions are typically measured in terms of pounds or tons of “CO₂ equivalents” (CO₂e).

For the purposes of this analysis, the stationary source threshold developed by the BAAQMD (10,000 metric tons of CO₂e per year) is considered to determine the significance of GHG emissions.

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less Than Significant Impact)

The following section describes the proposed project’s construction and operational related GHG emissions and contribution to global climate change. As discussed below, the proposed project would not generate substantial GHG emissions that would have a significant effect on the environment and this impact would be less than significant.

Construction Emissions. Construction activities, such as site preparation, site grading, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting the construction crew would produce combustion emissions from various sources. During construction of the proposed project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄, and N₂O. Furthermore, CH₄ is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are encouraged to quantify and disclose GHG emissions that would occur during construction. Utilizing California Emissions Estimator Model® (CalEEMod) to estimate project emissions, it is estimated that the project would generate approximately 272 metric tons of CO₂e during the construction phase (Appendix A). Although not required to mitigate a significant impact, implementation of Mitigation Measures AIR-1, as discussed in Section 3.3, Air Quality, would further reduce construction GHG emissions by limiting construction idling emissions. Construction emissions would be considered less than significant.

Operational Emissions. The proposed project would install solar panels to supply electricity to existing electrical infrastructures for District facilities. Once completed, the proposed project would not generate any GHG emissions or result in substantial vehicle trips that would contribute to an increase in GHG emissions. Maintenance vehicle trips would only occur when the facility requires maintenance. Furthermore, because the solar photovoltaic array would offset GHG emissions associated with direct combustion, the project would result in a net reduction in annual GHG emissions. Therefore, GHG emissions generated by the proposed project would be less than significant.

b. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Less Than Significant Impact)

The City of Fremont Climate Action Plan (CAP),²⁶ adopted in 2012, identifies specific and achievable actions for reducing GHG emissions in Fremont. The actions are organized within a three-tier implementation time frame: short term; medium term; and long term, consistent with the goals and policies outlined in the City's General Plan. The CAP goals and actions relate to land use and mobility, energy, solid waste, water, and municipal services and operations.

As discussed above, the long-term use of the project is to supply electricity to electrical infrastructures for District facilities. The City of Fremont CAP outlines GHG reduction measures for municipal services and operations. Measure M19, which is Increased Use of Renewable, Distributed Energy for Municipal Facilities suggests that District evaluate the potential for providing solar, wind, and other renewable energy systems at the facilities. The new solar panels would be a new renewable distributed energy, consistent with Measure M19. In addition, operation of the solar panels would eliminate the emissions associated with the natural gas fired power generators from local power utility, further reducing GHG emissions associated with current municipal operations.

The proposed project would not result in a substantial increase in GHG emissions and, therefore, would be consistent with the CAP and would not generate emissions that would exceed the project-level significance criteria established by the BAAQMD. Further, the proposed project would result in an increase in the consumption of electricity derived from renewable resources as compared to existing non-renewable resources. The gains through energy efficiency would reduce energy consumption and GHG production. The project would also be consistent with the strategies and policies included in the CAP. Therefore, the proposed project would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions. This impact would be less than significant.

²⁶ Fremont, City of. 2012. *City of Fremont Climate Action Plan*. November.

3.9 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 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?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Less Than Significant Impact)

Hazardous substances include chemicals regulated under both the United States Department of Transportation²⁷ and the U.S. Environmental Protection Agency (USEPA)²⁸ “Hazardous Materials” regulations. Hazardous waste requires specific handling and disposal procedures because of potential damage to public health and the environment. Implementation of the project would result in the installation of a solar PV power generation system to provide renewable energy for use at the project site. After project construction, no routine transport or disposal of hazardous materials would be associated with the proposed project. The proposed project may involve the use of only small quantities of commercially-available hazardous materials (e.g., paint, cleaning supplies, fertilizers). However, the District would be required to comply with existing government regulations

²⁷ U.S. Department of Transportation. 2017. *Hazardous Materials Regulations*. Available online at: www.phmsa.dot.gov/standards-rulemaking/hazmat/hazardous-materials-regulations (accessed July 6, 2020).

²⁸ U.S. Environmental Protection Agency, 2012. *Hazardous Waste Regulations*. Available online at: www.epa.gov/osw/lawsregs/regs-haz.htm (accessed September 6, 2017).

in the use and disposal of any hazardous materials necessary for maintenance of the proposed solar facility, and such materials would not be used in sufficient strength or quantity to create a substantial risk to human or environmental health. Therefore, the proposed project would have a less than significant impact related to the routine transport, use, or disposal of 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? (Less Than Significant with Mitigation Incorporated)

As described in Section 3.9.a above, operation of the project would not require routine use of hazardous materials; therefore, no hazards or hazardous materials impacts related to long-term operation of the project are anticipated. Hazardous materials most likely to be used during construction include typical construction materials such as gasoline, diesel, motor oil, lubricants, solvents, and adhesives. Such materials would be kept at construction staging areas, and would be secured when not in use. In the unlikely event of a spill, fuels would be controlled and disposed of in accordance with applicable regulations. Drips and small spills would be the most likely potential hazardous materials releases to occur; however, any release that occurs in close proximity to a stream or drainage channel could have a significant impact on the environment, if not properly controlled. Pursuant to Mitigation Measure WQ-1, described below, the District would be required to prepare and implement a SWPPP for the proposed project in accordance with the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (NPDES General Construction Permit)(Order No. 2009-0009-DWQ, NPDES No. CAS000002) (SWRCB, 2009) permitting requirements, which would reduce the potential for hazardous materials releases to occur during construction, and would reduce the potential for spills to impact sensitive habitat or human health, to a less-than-significant level. SWPPPs are required for construction sites over one acre that do not qualify for a waiver. Therefore, development of the proposed project would not create a significant hazard to the public or environment. This impact would be less than significant.

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? (Less Than Significant Impact)

Schools in the project area include: American High School, located approximately 1.0 mile west of the project site, Thornton Junior High School, located 1.07 mile to the west of the project site, Centerville Junior High School, located 0.6 mile to the south of the project site, and Washington High School, located 0.8 mile to the south of the project site. As described above, the proposed project would install a solar PV power generation system and would not result in the routine use, transport or disposal of substantial quantities of hazardous materials. Therefore, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school and this impact would be less than significant.

- d. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (Less Than Significant Impact)*

The project site is not included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and therefore would not create a hazard to the public or environment. The project site is not on a State-listed hazardous materials clean-up site. According to the California State Water Resources Control Board (SWRCB) Geotracker website,²⁹ there are no State-listed hazardous materials clean-up sites located within 1,000 feet of the project site. However, several sites, listed as a Leaking Underground Storage Tank (LUST) sites, and one Cleanup Program site are located in the vicinity of the proposed project. All of these sites are designated “closed.” A closed site indicates that regulatory requirements for response actions, such as site assessment and remediation, have either been completed or were not necessary and therefore potential migration of residual contaminants in groundwater beneath the project corridor (if any) does not likely pose a risk to human health and the environment. Therefore, no significant hazard to the public or environment would be associated with this listed site, and this impact would be less than significant.

- e. Would the project be located within an airport land use plan or, where such a plan has not been adopted, within 2 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? (No Impact)*

The project site is not located within an airport land use plan, or within two miles of a public airport or public use airport. The closest airports to the project site are the Hayward Executive Airport, located approximately 13 miles to the north, and the Palo Alto Airport, located approximately 11 miles to the west of the project site, and the Mineta San José International Airport, located approximately 11 miles to the south. Therefore, the project would not result in a safety hazard for people residing or working in the project area and no impact would occur.

- f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (Less Than Significant Impact)*

The City of Fremont’s Disaster Management Operations Plan was developed in compliance with state requirements and also meets the requirements of the Federal Emergency Management Agency (FEMA) as the City’s local hazard mitigation plan. Fremont’s Disaster Management Operations Plan provides policies and procedures for the evacuation, dispersal, or relocation of people from hazardous areas during natural disasters to less threatened areas. The plan also describes the organization and responsibilities for conducting movement operations. Evacuation routes suited for different types of potential disasters are shown in the City’s Disaster Management

²⁹ State Water Resources Control Board. 2018. Geotracker website application. Available online at: <https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=42900+Paseo+Padre+Parkway%2C+Fremont%2C+CA+> (Accessed April 16, 2020).

Operations Plan.³⁰ Because the proposed project would not alter or block adjacent roadways, implementation of the proposed project would not be expected to impair the function of nearby emergency evacuation routes. Therefore, the proposed project would have a less-than-significant impact on implementation of an adopted emergency response plan or emergency evacuation plan.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (Less Than Significant Impact)

The project site is located within a developed urban area and according to the California Department of Fire and Forestry Protection (CalFire), the project site is not located in a Very High Fire Hazard Severity Zone.³¹ Therefore, the proposed project would not expose people or structures to a significant loss, injury or death involving wildland fires and this impact would be less than significant.

³⁰ First Carbon Solutions, 2014. Draft Environmental Impact Report Warm Springs/South Fremont Community Plan, City of Fremont, Alameda County California, State Clearinghouse No. 2013032062. 15 January. Available online at: <https://www.fremont.gov/430/Environmental-Review> (Accessed April 16, 2020).

³¹ CalFire, 2008. Alameda County Very High Fire Hazard Severity Zones in LRA. Available online at: osfm.fire.ca.gov/media/6638/fhszl_map1.pdf (accessed April 16, 2020).

3.10 HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☒	☐	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. 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:	☐	☒	☐	☐
i. Result in substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv. Impede or redirect flood flows?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

The project site is located within the Alameda Creek Watershed. Alameda Creek is the largest creek in Fremont and drains most of the southern Alameda County watershed. The Alameda Creek watershed is over 630 square miles. From the Sunol Valley, Alameda Creek flows through Niles Canyon and enters the Bay Plain in the Niles District near Mission Boulevard. Once in Fremont, much of the water in Alameda Creek is diverted into the Alameda Creek Quarry Lakes where it recharges the Niles Cone Groundwater Basins. Water not diverted into the Quarry Lakes flows in a northerly and then westerly direction and enters San Francisco Bay near the Fremont and Union City boundary.

The City of Fremont is located within the Niles Cone Subbasin of the Santa Clara Valley Groundwater Basin. The Niles Cone Subbasin covers an approximately 105 square mile area and is bounded on the east by the Diablo Range and on the west by San Francisco Bay. The Hayward Fault intersects the easterly edge of the basin and interrupts groundwater flowing westward. This separates the basin into two zones, one above the Hayward Fault (AHF) and one below the Hayward Fault (BHF). The AHF zone has significantly higher groundwater levels than the BHF. Depths of groundwater vary

throughout Fremont depending on location. For example, a depth of about three feet is common near the Bay and depths of 70 feet exist in the flatlands west of the Hayward Fault.³²

Runoff water quality is regulated by the federal National Pollution Discharge Elimination System (NPDES) Program, which controls the discharge of pollutants to water bodies from point and non-point sources. In the Bay Area, this federal regulatory program is administered by the San Francisco Bay Regional Water Quality Control Board (RWQCB), expanded in 1990 to include permitting of stormwater discharges from storm sewer systems, industrial activities and construction sites that disturb more than 1 acre. In addition, the project site would be under the jurisdiction of the Alameda Countywide Clean Water Program (ACCWP), of which the City of Fremont is a participant. ACCWP is a group of local government agencies that operate under one common NPDES Municipal Regional Stormwater Discharge Permit.

According to the RWQCB 2016 Integrated Report (Clean Water Act Section 303(d) List 305(b) Report)³³, impaired water bodies within Fremont include Alameda Creek, contaminated for approximately 41 miles with diazinon from urban runoff and storm sewers. A waterbody listed as impaired triggers development standards and implementation plans known as Total Maximum Daily Loads (TMDLs) for each water quality pollutant, and these standards and implementation plans are ultimately codified in amendments to the San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). The Basin Plan establishes beneficial water uses for waterways and water bodies within the region.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Nos. 06001C0434G, 06001C0442G, 06001C0455G, and 06001C0461G (August 3, 2009),³⁴ the project site is not located within a 100-year flood hazard zone. The 100-year flood zone associated with Alameda Creek is located just north of the project site. The flood zone is separated from the project site by a levee/flood wall.

The two major upstream dams are James Turner (San Antonio Reservoir) and Del Valle, which are inspected regularly by the California Division of Safety of Dams. In addition, the Calaveras Reservoir is also located upstream from Fremont but a further distance away.³⁵ Flood waters resulting from dam failure would take 90 minutes (Turner) and 160 minutes (Del Valle) to reach populated areas of the City.

³² Fremont, City of. 2011. City of Fremont General Plan.

³³ Regional Water Quality Control Board (RWQCB), 2016. *Clean Water Act Sections 303(d) and 305(b) 2016 Integrated for the San Francisco Bay Region*. Available online at: http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/303dlist.shtml (Accessed September 8, 2017).

³⁴ Federal Emergency Management Agency. FEMA Flood Map Service Center website: msc.fema.gov/portal/search?AddressQuery=Driscoll%20Road%2C%20Fremont%2C%20California#searchresultsanchor (Accessed February 19, 2020).

³⁵ Fremont, City of. 2011. op. cit.

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? (Less Than Significant with Mitigation Incorporated)

Construction. Pollutants of concern during project construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and transport of sediment downstream compared to existing conditions. During a storm event, soil erosion could occur at an accelerated rate. In addition, construction-related pollutants such as chemicals, liquid and petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste could be spilled, leaked or transported via storm runoff into adjacent drainages and into downstream receiving waters. Any of these pollutants has the potential to be transported via stormwater runoff into receiving waters (i.e., Washington Creek).

The project is subject to the requirements of the State Water Resources Control Board's National Pollutant Elimination System (NPDES) General Permit for Storm Water Discharge Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended by Orders No. 2010-0014-DWQ and 2012-0006-DWQ, NPDES No. CAS000002) (Construction General Permit). The project would also be subject to the provisions of Chapter 18.205, Grading, Erosion and Sediment Control of the City of Fremont Municipal Code.

In compliance with the Construction General Permit, the Construction Contractor would be required to prepare a SWPPP, and implement construction BMPs during construction activities. Construction BMPs would include, but not be limited to, Erosion and Sediment Control BMPs, designed to minimize erosion and retain sediment on site, and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. Compliance with State and local regulations regarding stormwater during construction, as required by Mitigation Measures WQ-1 and WQ-2 below, would ensure that the proposed project would result in less-than-significant impacts to water quality during construction.

Mitigation Measure WQ-1: Construction General Permit. Prior to the commencement of construction activities, the District shall obtain coverage under the State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and 2012-0006-DWQ, NPDES No. CAS000002, or any other subsequent permit. The District shall submit the Permit Registration Documents (PRDs), including a Notice of Intent (NOI) for coverage under the permit to the State Water Resources Control Board via the Stormwater Multiple Application and Report Tracking System (SMARTS). Construction activities shall not commence until a Waste Discharge Identification Number (WDID) is obtained from SMARTS. A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared by a Qualified SWPPP Developer (QSD) and implemented by a Qualified SWPPP Practitioner (QSP) to address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP shall identify the sources of pollutants that may affect the quality of

storm water and include Best Management Practices (BMPs) to ensure that the potential for soil erosion, sedimentation, and spills is minimized and to control the discharge of pollutants in storm water runoff as a result of construction activities. Upon completion of construction and stabilization of the site, a Notice of Termination (NOT) shall be submitted via SMARTS.

Mitigation Measure WQ-2: Erosion and Sediment Control Plan. Prior to the issuance of grading permits, an Erosion and Sediment Control Plan shall be prepared and implemented in accordance with measures and techniques approved by the City Engineer or its designated contractor in compliance with the provisions of Chapter 18.205, Grading, Erosion and Sediment Control of the City of Fremont Municipal Code. The Erosion and Sediment Control Plan shall indicate the proposed methods for the control of runoff, erosion, and sediment movement during project construction.

Operation. As described in Section 1.0, Project Information, operation of the proposed project would consist of semi-annual to annual inspections, routine maintenance and minor repairs. Impacts related to water quality are not anticipated during operation and maintenance activities.

The proposed project would include minimal installation of new hardscape on the project site. The solar facility would be located atop the ponds themselves, and access roads would consist of permeable gravel. Therefore, implementation of the project would not result in any long-term operational impacts that would violate any water quality standards or waste discharge requirements and this impact would be less than significant.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (Less Than Significant Impact)

As described above, the project site is located within the Santa Clara Valley-Niles Cone Groundwater Basin. Excavation required for the proposed project would be shallow and is not anticipated to encounter groundwater or require dewatering for project construction.

The proposed project would result in minimal changes to impervious surface area. Because the project would not result in the development of large areas of impervious surfaces that would prevent water from infiltrating into the groundwater, nor require direct additions or withdrawals to existing groundwater, the proposed project would result in a less than significant impact associated with depleting groundwater supplies or substantially interfering with groundwater recharge.

- c. *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:*
- i. *Result in substantial erosion or siltation on- or off-site;*
 - ii. *Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;*
 - iii. *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or*
 - iv. *Impede or redirect flood flows? (Less Than Significant with Mitigation Incorporated)*

The proposed project would require minimal grading and disturbance. No streams or rivers would be affected by project construction. Alameda Creek is located just north of the project site; however, the majority of project work would occur within the ponds themselves. Limited work would be required along the site's perimeter to install access routes and fencing.

During construction activities, excavated soil would be exposed and disturbed, drainage patterns would be temporarily altered during grading and other construction activities, and there would be an increased potential for soil erosion and the transport of sediment downstream compared with existing conditions. Additionally, during a storm event, soil erosion could occur at an accelerated rate. As discussed in Section 3.10.a above and specified in Mitigation Measures WQ-1 and WQ-2, the Construction General Permit requires preparation of a SWPPP and implementation of construction BMPs to reduce impacts to water quality during construction, including those impacts associated with soil erosion, and siltation. Therefore, adherence to Mitigation Measures WQ-1 and WQ-2 would ensure that construction of the project would result in a less than significant impact related to altering the existing drainage pattern of the project site during construction activities in a manner that would result in substantial erosion or siltation on- or off-site, increase surface runoff, result in flooding or impede or redirect flood flows.

Because the solar facility would be located on the ponds themselves and access roads would consist of permeable gravel, installation of project components would result in a minimal increase in the total impervious surface on the project site. Therefore, no significant change in either drainage patterns or on-site or off-site effects from erosion and siltation would occur and this impact would be less than significant.

- d. *In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation? (Less Than Significant Impact)*

The project site is not located within a 100-year flood hazard zone as mapped by FEMA.

Dam failure is defined as the structural collapse of a dam that releases the water stored in a reservoir behind the dam. A dam failure is usually the result of the age of the structure, inadequate spillway capacity, or structural damage caused by an earthquake or flood. As described above, earthquake-induced dam failure of the James Turner, Del Valle, or Calaveras Dams could have serious effects on the City of Fremont and the project site. These dams are evaluated annually by the California Division of Safety Dams to ensure that they are safely performing as intended. Regular

inspections and required maintenance of the dams substantially reduce the potential for catastrophic failure. Existing dam inspection and maintenance programs ensure that dam failures remain a very low probability event.

A levee is a type of dam that runs along the banks of a river or canal that provides flood protection. A levee system failure could create severe flooding and high water velocities. Pits T1 and T2 are surrounded by levees; however, the proposed project would not require extensive ground disturbing activities on the top of the existing levees and the proposed floating solar facilities would not impact the integrity of the existing levees. Therefore, no impact would occur.

The project site is not located within a mapped tsunami area for Alameda County³⁶ and no seismically induced seiche waves have been documented in the San Francisco Bay throughout history.³⁷ Therefore, this impact would be less than significant.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (Less Than Significant Impact)

As discussed above, due to the size of the proposed project, construction and operation of the project would be subject to State and regional requirements related to stormwater runoff. Required compliance with State and local regulations regarding stormwater and dewatering during construction and operation would ensure that the proposed project would not conflict or obstruct implementation of a water quality control plan or sustainable groundwater management plan. As a result, this impact would be less than significant.

³⁶ California, State of, 2009. *California Emergency Management Agency. Alameda County Tsunami Inundation Maps*. Available online at: <https://www.conservation.ca.gov/cgs/tsunami/maps/Alameda> (Accessed April 16, 2020).

³⁷ Association of Bay Area Governments and Metropolitan Transportation Commission, 2013. *Plan Bay Area*. July 18.

3.11 LAND USE AND PLANNING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	☒
b. 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?	☐	☐	☒	☐

a. Would the project physically divide an established community? (No Impact)

The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. Implementation of the project would result in the installation of a solar PV power generation system to provide renewable energy for use at the project site. The proposed project would be implemented entirely within the District's existing facility. Therefore, implementation of the project would not physically divide an established community and no impact would occur.

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? (Less Than Significant Impact)

The proposed project would be located within the District's existing facility. Adjacent land uses include residential development and recreational facilities, including the Quarry Lakes Regional Recreation Area and the Alameda Creek Trail. The project site is located within the City of Fremont.

The City of Fremont General Plan and the City of Fremont Municipal Code are the primary land use plans containing policies and regulations applicable to the project. The project would be located entirely within the District's existing facility. The proposed project would not change existing land use within the project area and would not result in the conversion of adjacent land uses or conflicts with applicable City of Fremont land use designations or zoning standards. The proposed project would not conflict with any applicable land use plan, policy or regulation with jurisdiction over the project.

The City of Fremont General Plan (2011) and relevant sections of the City's Municipal Code (2019) outline relevant policies and regulations applicable to the proposed project, including policies to preserve visual, cultural, and natural resources and to protect the health and safety of their citizens. Consistent with the goals and policies of these relevant planning documents, the project has been designed to minimize impacts to natural and cultural resources. Project conformance and/or potential conflicts with these ordinances are described in the relevant resource sections of this Initial Study. Where potentially significant environmental impacts have been identified in this Initial Study/Mitigated Negative Declaration, they have been mitigated to less than significant with

implementation of appropriate mitigation measures. Therefore, the project would be consistent with applicable land use plans, policies and regulations, and no additional mitigation is required.

3.12 MINERAL RESOURCES

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

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (No Impact)

Minerals are any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat and oil bearing rock, but excluding geothermal resources, natural gas and petroleum. Mineral resources within Fremont's city limits include construction aggregate (sand, gravel and crushed rock); salt; and other resources (clay, mineral springs, and limestone). These resources are designated by the State as regionally significant; however, there are currently no active mining operations within the City.³⁸

Six mineral resource sectors in the City are designated by the State Mining and Geology Board as containing regionally significant aggregate resources; however, none of these sites are located on or in the vicinity of the project site. Therefore, the proposed project would not result in the loss of availability of a known mineral resources that would be of value of the region and the residents of the state.

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? (No Impact)

In addition to the State-designated aggregate resources, the City has identified other locally-important mineral resource sites, including former quarries, and salt, clay and limestone deposits.³⁹ None of these sites are located on or in the vicinity of the project site. Therefore, the proposed project would not 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.

³⁸ Fremont, City of. 2011. op. cit.

³⁹ Fremont, City of. 2011. City of Fremont General Plan, Diagram 7-4, Mineral Resources and Sites Subject to SMARA (Surface Mining and Reclamation Act).

3.13 NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a. 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?	☐	☒	☐	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
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 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness; and similarly, each 10 dB decrease in sound level is perceived as half as loud. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for 24-hour sound measurements that better represent human sensitivity to sound at night.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} , the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on dBA. CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

A project would have a significant noise effect if it would substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of applicable regulatory agencies, including, as appropriate, the City of Fremont.

The City of Fremont also addresses noise in the Safety Element.⁴⁰ The Safety Element includes goals, policies, and implementation measures that work to minimize impacts to residents and property due to noise and ground vibration sources. The Safety Element includes projected 2030 noise contours throughout the City which indicate that the project site would be exposed to a noise level of between 60 and 70 dBA L_{dn} primarily associated with vehicle traffic noise on Interstate 680.

In addition, the City of Fremont⁴¹ sets allowable hours for construction activity for development projects in a zoning district on any property within 500 feet of one or more residences, lodging facilities, nursing homes or inpatient hospitals to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. and 6:00 p.m. on Saturdays and holidays. No construction is allowed on Sundays.

- 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? (Less Than Significant Impact with Mitigation Incorporated)*

The following section addresses the short-term construction and long-term operational noise impacts of the proposed project.

Short-Term (Construction) Noise Impacts. Project construction would result in short-term noise impacts on nearby sensitive receptors, the closest of which is located 115 feet west of the Pit T2 pond. Maximum construction noise would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of noise impacts generally would be from one day to several days depending on the phase of construction. The level and types of noise impacts that would occur during construction are described below.

Short-term noise impacts would occur during grading and site preparation activities. Table 3-B lists typical construction equipment noise levels (L_{max}) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor, obtained from the Federal Highway Administration (FHWA) Roadway Construction Noise Model. Construction-related short-term noise levels would be higher than the existing ambient noise levels of 65 to 75 dBA L_{dn} currently in the project area but would no longer occur once construction of the project is completed.

Two types of short-term noise impacts could occur during construction of the proposed project. The first type involves construction crew commutes and the transport of construction equipment and

⁴⁰ Fremont, City of. 2011. *City of Fremont General Plan*. December.

⁴¹ Fremont, City of, 2019. *Construction Hours*. October. Website: <https://fremont.gov/DocumentCenter/View/4095/Construction-Hours?bidId=> (accessed March 2020).

materials to the site, which would incrementally increase noise levels on roads leading to the site. As shown in Table 3-B, there would be a relatively high single-event noise exposure potential at a maximum level of 84 dBA L_{max} with trucks passing at 50 feet.

The second type of short-term noise impact is related to noise generated during grading and construction on the project site. Construction is performed in discrete steps, or phases, each with its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Table 3-B lists maximum noise levels recommended for noise impact assessments for typical construction equipment, based on a distance of 50 feet between the equipment and a noise receptor.

Table 3-B: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)	Maximum Noise Level (L_{max}) at 50 Feet ¹
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Pick-up Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Welder	40	73

Source: Roadway Construction Noise Model (FHWA 2006).

Note: Noise levels reported in this table are rounded to the nearest whole number.

¹ Maximum noise levels were developed based on Spec 721.560 from the Central Artery/Tunnel (CA/T) program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.

L_{max} = maximum instantaneous sound level

Typical maximum noise levels range up to 87 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, including excavation and grading of the site, tends to generate

the highest noise levels because earthmoving machinery is the noisiest construction equipment. Earthmoving and compacting equipment includes excavating machinery such as backhoes, bulldozers, draglines, front loaders, compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

As discussed in Section 1.0, Project Information, project construction is anticipated to start in late winter or early spring 2021 and last approximately six to eight months. Construction activities would be conducted in compliance with the City of Fremont's Municipal Code. The construction staging area would be located within the project site. Access to the project site would likely be via Paseo Padre Parkway, Sequoia Terrace, Ortega Common, and Riverwalk Drive. Once construction activities are complete, staging areas would be returned to their existing condition.

The onsite construction workforce would consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. It is conservatively assumed that approximately seven to 12 workers would be on-site during construction activities.

Construction materials such as concrete, conduit pipe, PV modules, wire and cable conductors, fuels, reinforcing steel, and small tools and consumables would be delivered to the site by truck. Initial grading work would include the use of primarily rubber-tired tractors, disk/tillers and vibratory rollers and limited use of track-driven excavators, graders, dump trucks, and end loaders, in addition to the support pickups, water trucks, and cranes. Throughout the construction process, temporary above ground fuel storage tanks may be located at the site for construction equipment fueling.

This analysis assumes that a tractor, roller, excavator, grader, dump truck, and loader would be operating simultaneously during construction of the proposed project. Based on the typical construction equipment noise levels shown in Table 3-B, noise levels associated with these pieces of construction equipment operating simultaneously would be approximately 85 dBA L_{max} at 50 feet.

The closest sensitive receptors include the residential uses located approximately 115 feet west of the Pit T2 pond. Based on distance attenuation, at 115 feet, there would be a decrease of approximately 7 dBA from the reduced distance compared to the noise reference level measured at 50 feet. Therefore, based on distance attenuation, the closest receptor may be subject to parking lot noise levels of approximately 78 dBA L_{max} . Construction noise is permitted by the City of Fremont when activities occur between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. and 6:00 p.m. on Saturdays and holidays. No construction is allowed on Sundays in Fremont. In addition, Mitigation Measure NOI-1 would be required to limit construction activities to daytime hours and would reduce potential construction period noise impacts for sensitive receptors to less-than-significant levels.

Mitigation Measure NOI-1: Construction Noise Measures. The project contractor shall implement the following measures during construction of the proposed project:

- Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
- Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active project site.
- Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all construction activities.
- Ensure that all general construction related activities are restricted to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. and 6:00 p.m. on Saturdays and holidays. Construction activities shall be prohibited on Sundays.
- Designate a "disturbance coordinator" at the District who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would determine and implement reasonable measures warranted to correct the problem.

Implementation of Mitigation Measure NOI-1 would limit construction hours and require the construction contractor to implement noise-reducing measures during construction, which would reduce short-term construction noise impacts to a less-than-significant level.

Operational Noise Impacts. A characteristic of sound is that a doubling of a noise source is required in order to result in a perceptible (3 dBA or greater) increase in the resulting noise level. The proposed project would include two floating AC solar PV power generating facilities atop the District's Pit T1 and Pit T2 ponds. The floating solar field would include PV modules, inverters or converters and transformers that would be mounted on, or molded into, floating structures that would float atop the Pit T1 and Pit T2 ponds. The system would use molded plastic pontoons, which contain most of the electronics for the solar arrays. The pontoons would be tied together and connected by short conductor cables. The pontoons would be anchored to the bottom. The solar panels would be mounted atop the floating structures, extending approximately 2 to 3 feet above the water surface and tilted at a fixed angle (5 to 12 degrees for standard panels; up to 22 degrees with a high-angle variant).

Typically, operational noise generated by solar PV power generating facilities is associated with axis trackers that enable the panels to rotate to follow the sun's path. However, since the proposed project would be tilted at a fixed angle, operation of the proposed project is not expected to result in a perceptible increase in noise levels in the project vicinity.

In addition, other operational noise sources would include noise associated with operation and maintenance. Operation of the proposed project would require a workforce of up to four staff on a semi-annual or annual basis to perform inspections, routine maintenance, and minor repairs. Crews of up to four workers would be required on occasion to perform other tasks such as equipment

maintenance or replacement. Operation and maintenance would primarily require the use of pickup trucks and handheld tools, with very infrequent use of larger equipment for minor equipment maintenance. Pick-up trucks would be in daily use on the site during maintenance activities. Additional maintenance equipment may include forklifts, manlifts, crane trucks, water and chemical application equipment for weed abatement or dust control. No heavy equipment is expected to be used during normal operation.

As operation and maintenance would only require four staff on a semi-annual or annual basis and the project would not require the use of heavy equipment during normal operation, it is expected that operation and maintenances of the proposed project would also not result in a perceptible noise increase in the project vicinity. Therefore, the operation of the proposed project would not generate noise levels in excess of noise standards or create a substantial increase in ambient noise levels in the Project vicinity. This impact would be less than significant.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels? (Less Than Significant Impact)

Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Vibration energy propagates from a source, through intervening soil and rock layers, to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as the motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of groundborne vibration are construction activities (e.g., pavement breaking, vibrating sheep foot equipment used to compact soil and pile driving, and operating heavy-duty earthmoving equipment), and occasional traffic on rough roads. In general, groundborne vibration from standard construction practices is only a potential issue when within 25 feet of sensitive uses. Groundborne vibration levels from construction activities very rarely reach levels that can damage structures; however, these levels are perceptible near the active construction site. Although vibration levels would have the potential to result in annoyance, with the exception of old buildings built prior to the 1950s or buildings of historic significance, potential structural damage from heavy construction activities rarely occurs. When roadways are smooth, vibration from traffic (even heavy trucks) is rarely perceptible.

The streets surrounding the project area are paved, smooth, and unlikely to cause significant groundborne vibration. In addition, the rubber tires and suspension systems of fire engines and other on-road vehicles make it unusual for on-road vehicles to generate groundborne noise or vibration. Therefore, it is assumed that no such vehicular vibration impacts would occur and no vibration impact analysis of on-road vehicles is necessary. Additionally, once constructed, the proposed project would not contain uses that would generate groundborne vibration.

Construction Vibration. Construction of the proposed project could result in the generation of groundborne vibration. This construction vibration impact analysis discusses the level of human annoyance using vibration levels in vibration velocity decibels (VdB) and assesses the potential for building damages using vibration levels in peak particle velocity (PPV inches per second [(in/sec)]) because vibration levels calculated in root-mean-square (RMS) are best for characterizing human response to building vibration, while vibration level in PPV is best used to characterize potential for damage. The Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment guidelines indicate that a vibration level up to 102 VdB (an equivalent to 0.5 in/sec in PPV) is considered safe for buildings consisting of reinforced concrete, steel, or timber (no plaster), and would not result in any construction vibration damage. For a non-engineered timber and masonry building, the construction vibration damage criterion is 94 VdB (0.2 in/sec in PPV).

Table 3-B shows the PPV and VdB values at 25 feet from a construction vibration source. As shown in Table 3-B, bulldozers and other heavy-tracked construction equipment (except for pile drivers and vibratory rollers) generate approximately 87 VdB of groundborne vibration when measured at 25 feet, based on the Transit Noise and Vibration Impact Assessment. At this level, groundborne vibration would result in potential annoyance to residents and workers, but would not cause any damage to the buildings.

Table 3-C: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L _v at 25 feet	
	PPV (in/sec)	L _v (VdB) ^a
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Sources: *Transit Noise and Vibration Impact Assessment* (FTA 2018).

^a RMS vibration velocity in decibels (VdB) is 1 µin/sec.

µin/sec = micro-inches per second

FTA = Federal Transit Administration

in/sec = inches per second

L_v = velocity in decibels

PPV = peak particle velocity

RMS = root-mean-square

VdB = vibration velocity decibels

Construction vibration, similar to vibration from other sources, would not have any significant effects on outdoor activities (e.g., those outside of residential buildings in the project vicinity). Outdoor site preparation for the proposed project is expected to include the use of bulldozers and loaded trucks. The greatest levels of vibration are anticipated to occur during the site preparation phase. All other phases are expected to result in lower vibration levels. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project boundary (assuming the construction equipment would be used at or near the project

boundary) because vibration impacts occur normally within the buildings. The formula for vibration transmission is provided below.

$$\begin{aligned}L_{\text{vdB}}(D) &= L_{\text{vdB}}(25 \text{ feet}) - 30 \log(D/25) \\PPV_{\text{equip}} &= PPV_{\text{ref}} \times (25/D)^{1.5}\end{aligned}$$

As identified above, the closest sensitive receptors include the residential uses located approximately 115 feet west of the Pit T2 pond. Construction vibration levels at these residences from construction equipment or activity would be below the FTA threshold of 94 VdB (0.2 in/sec PPV) for building damage. Although construction vibration levels at the adjacent sensitive receptors would have the potential to result in annoyance, these vibration levels would no longer occur once construction of the project is completed. Therefore, impacts associated with construction vibration would be less than significant.

- 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 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (No Impact)*

The proposed project is not located within 2 miles of a public or public use airport. Aircraft noise is occasionally audible at the project site; however, no portion of the project site lies within the 60 dBA CNEL noise contours of any public airport nor does any portion of the project site lie within 2 miles of any private airfield or heliport. Therefore, the proposed project would not result in the exposure of people residing or working in the project area to excessive noise levels and no impact would occur.

3.14 POPULATION AND HOUSING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. 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)?	☐	☐	☐	☒
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

- 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)? (No Impact)*

The proposed project would install a solar PV power generation system to provide renewable energy for use at the project site. Land uses in the vicinity consist of residential development, the Quarry Lakes Regional Recreation Area and the Alameda Trail. Development of the project is part of the District's Clean Energy Program. The project would not expand the capacity of the current water system or provide additional major infrastructure so as to encourage population growth or new development. The project would not include any new housing, commercial or industrial space. Therefore, the project would not directly or indirectly induce substantial population growth and no impact would occur.

- b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No Impact)*

The project would be constructed within the District's existing facility. No housing or people would be displaced as a result of implementation of the project and no impact would occur.

3.15 PUBLIC SERVICES

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

a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- i. Fire protection?*
- ii. Police protection?*
- iii. Schools?*
- iv. Parks?*
- v. Other public facilities? (No Impact)*

The project site is located in the City of Fremont, in an urban area served by existing public services.

Fire Protection. Fire protection and emergency response services are provided by the City of Fremont Fire Department. Emergency services are delivered through 13 in-service fire companies from 11 strategically located fire stations in the City. The closest fire station to the project site is Fire Station 6 located at 4355 Central Avenue.⁴²

Police Protection. Police protection in Fremont is provided by the Fremont Police Department. As of 2019, the department consists of over 300 staff, of which more than 200 are sworn personnel, and more than 100 are professional staff.⁴³ The Fremont Police Department is headquartered at 2000

⁴² Fremont, City of. 2019. City of Fremont Fire Department website: fremont.gov/96/Fire-Department (Accessed February 19, 2020).

⁴³ Fremont, City of. 2019. City of Fremont Police Department website: www.fremontpolice.gov/home (Accessed February 19, 2020).

Stevenson Boulevard in Fremont. The project site is located within Zone 2, which covers mostly Northern Fremont.

Schools. The City of Fremont is served by the Fremont Unified School District (FUSD). FUSD is the second largest of the 18 school districts in Alameda County with 28 elementary schools, one pre-kindergarten campus, five junior high schools, five high schools and one continuation school. FUSD operates one special education school for special needs children, an adult school and is a participating District in a regional occupational training program.⁴⁴ FUSD schools in the vicinity of the project site include: American High School, located approximately 1.0 mile west of the project site, Thornton Junior High School, located 1.07 mile to the west of the project site, Centerville Junior High School, located 0.6 mile to the south of the project site, and Washington High School, located 0.8 mile to the south of the project site.

Parks. Refer to Section 3.16, Recreation, for a discussion about parks.

The proposed project would install a solar PV power generation system to provide renewable energy for use at the project site. The project does not include the construction of structures that would increase the population in the area or that would generate a higher demand for fire or police services, schools, parks, or other public facilities. Therefore, the demand for public services for the project would be the same as under existing conditions and no impact would occur.

⁴⁴ Fremont, City of. 2011. op. cit.

3.16 RECREATION

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

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? (No Impact)

The City of Fremont Recreation Services Department operates and maintains 53 parks, providing a wide range of recreation facilities to the community. Total acreage is about 1,148 acres, with about 865 acres owned by the City. The remainder is leased from other agencies.⁴⁵ These facilities include several community parks, historical sites, Central Park with Lake Elizabeth, Aqua Adventure Waterpark, skate park, a sports complex, tennis center, Fremont Park Golf Club, Olive Hyde Art Gallery, three program centers, and four community centers.⁴⁶

The proposed project would install a solar PV power generation system to provide renewable energy for use at the project site. No housing would be constructed as part of the project. Therefore, implementation of the project would not increase the use of existing neighborhood or regional parks in the project vicinity. As described in Section 3.1, Aesthetics, the project site is located adjacent to the Quarry Lakes Recreation Area and is visible from the Alameda Creek Trail; however, views of the proposed solar facility would largely be screened by trees and vegetation around the site perimeter. Implementation of the project would not have an adverse effect on existing park facilities and would not generate a demand for additional recreational facilities. Therefore, no impact would occur.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (No Impact)

Refer to Section 3.16.a, above. The project does not include construction or expansion of existing recreational facilities and no impact would occur.

⁴⁵ Fremont, City of. 2011. Op.

⁴⁶ Fremont, City of. 2019. City of Fremont, Recreation Services webpage: fremont.gov/259/Recreation-Services (Accessed February 19, 2020).

3.17 TRANSPORTATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b. Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d. Result in inadequate emergency access?	☐	☐	☒	☐

a. Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (Less Than Significant Impact)

The Alameda County Transportation Commission (ACTC), the County of Alameda's (County) Congestion Management Agency (CMA), has established a 100 peak-hour trip threshold for requiring preparation of a Traffic Impact Analysis. The threshold assumes that fewer than 100 peak hour trips would not have a substantial effect on the circulation system. As further discussed below, peak hour trip generation would be well below this threshold; therefore, a Traffic Impact Analysis was not prepared. Peak trip generation during project construction and operation is discussed below.

Short-Term (Construction) Impacts. As discussed in Section 1.0, Project Information, project construction is anticipated to start late in the winter or early spring of 2021 and last approximately six to eight months. Construction activities would typically occur from 8:00 am to 5:00 pm, Monday through Friday. Laydown areas for construction would be located off of the public right-of-way within District property. Access to the project site would likely be via Paseo Padre Parkway, Peralta Boulevard, and Interstate 880 (I-880). Once construction activities are complete, staging areas would be returned to existing conditions. The proposed project would result in the installation of floating PV power generation systems atop the existing Pit T1 and Pit T2 ponds located in the City of Fremont. Access to the site for construction would occur at existing driveways used for access to the ponds.

Examples of the types of construction equipment anticipated to be used during construction include: drilling rig, scrapers, bulldozers, graders, dump trucks, crane, boom truck, flat bed trucks, and lifts. The equipment would likely be delivered when its construction phase begins and removed when it ends. It is not expected that heavy equipment related to construction activities would affect the roadway network on a typical day.

The number of construction employees would vary by construction phase, but is expected to be between 7 to 12 people per day during the construction period. In order to present the worst-case trip generation, no carpooling was assumed for construction employees. Therefore, the maximum 12 employees would generate 24 trips per day of which 12 would occur during the AM peak hour and 12 would occur during the PM peak hour.

Construction period worker trips would be temporary and would be fewer than 100 peak hour trips. Therefore, the project would not conflict with a program plan, ordinance or policy addressing the circulation system and the impact would be less than significant.

Operational Impacts. Upon completion of construction, it is anticipated that inspection and maintenance of the equipment would occur on a semi-annual or annual basis. On a typical day, no additional trips are anticipated due to the project.

b. Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)? (Less Than Significant Impact)

According to the screening threshold for small projects, defined in the State of California Governor's Office of Planning and Research Technical Advisory On Evaluating Transportation Impacts in CEQA dated December 2018, "projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact".

As described above, during the short-term construction activity, 24 daily trips are anticipated. Therefore, in accordance with the Technical Advisory, impacts related to CEQA Guidelines section 15064.3, subdivision (b) can be assumed to be less than significant.

c. 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)? (Less Than Significant Impact)

The proposed project would not change the design of any existing roadways. During construction, construction vehicles would be staged off-street and within the project site. Additional heavy vehicles may travel along major arterials and I-680 during construction. Any lane closures or traffic control measures would be consistent with those published in the California Joint Utility Traffic Control Manual. Implementing measures contained within the California Joint Utility Traffic Control Manual would facilitate safe passage of both construction vehicles and private vehicles. As a result, the proposed project would not substantially increase hazards for vehicles due to a design feature or incompatible uses and this impact would be less than significant.

d. Would the project result in inadequate emergency access? (Less Than Significant Impact)

Effects of the proposed project on emergency access would be limited to construction and would be temporary in nature. If lane closures are necessary during heavy equipment ingress or egress, only one lane would be closed and emergency access would still be possible along all roadways and full access would be restored upon completion of equipment movement. Therefore, the proposed

project would not result in inadequate emergency access and this impact would be less than significant.

3.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 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:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or	☐	☐	☒	☐
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 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:

- i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or*
- ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. (**Less Than Significant Impact**)*

Assembly Bill 52 (AB 52), which became law on January 1, 2015, provides for consultation with California Native American tribes during the CEQA environmental review process, and equates significant impacts to “tribal cultural resources” with significant environmental impacts. Public Resources Code (PRC) Section 21074 states that “tribal cultural resources” are:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe and are one of the following:

- Included or determined to be eligible for inclusion in the California Register of Historical Resources.
- Included in a local register of historical resources as defined in subdivision (k) of PRC Section 5020.1.
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

A “historical resource” (PRC Section 21084.1), a “unique archaeological resource” (PRC Section 21083.2(g)), or a “nonunique archaeological resource” (PRC Section 21083.2 (h)) may also be a tribal cultural resource if it is included or determined to be eligible for inclusion in the California Register.

The consultation provisions of the law require that a public agency consult with local Native American tribes that have requested placement on that agency’s notification list for CEQA projects. Within 14 days of determining that a project application is complete, or a decision by a public agency to undertake a project, the lead agency must notify tribes of the opportunity to consult on the project, should a tribe have previously requested to be on the agency’s notification list. California Native American tribes must be recognized by the NAHC as traditionally and culturally affiliated with the project site, and must have previously requested that the lead agency notify them of projects. Tribes have 30 days following notification of a project to request consultation with the lead agency.

The purpose of consultation is to inform the lead agency in its identification and determination of the significance of tribal cultural resources. If a project is determined to result in a significant impact on an identified tribal cultural resource, the consultation process must occur and conclude prior to adoption of a Negative Declaration or Mitigated Negative Declaration, or certification of an Environmental Impact Report (PRC Sections 21080.3.1, 21080.3.2, 21082.3).

None of the tribes contacted for this project responded to the District’s invitation to consult within the 30-day notification period, consistent with the requirements of PRC 21080.3.1. As such, tribal consultation for the proposed project was not conducted and the District’s obligation under AB 52 is complete.

As discussed in Section 3.5, Cultural Resources, the NWIC records search and the archaeological survey completed for the project did not identify evidence of Native American archaeological deposits or ancestral remains. The proposed project would not impact on known tribal cultural resources that are listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources, nor has the District identified a tribal cultural resource at the project site. As noted in Section 3.5, Cultural Resources, implementation of Mitigation Measure CULT-1 would ensure that potential impacts related to previously undiscovered historic or archaeological resources, which are considered tribal cultural resources, would be less than significant.

3.19 UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c. 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?	☐	☐	☒	☐
d. 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?	☐	☐	☒	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

- a. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (Less Than Significant Impact)*

A variety of local and regional purveyors in this area provide and maintain utility and service system facilities associated with electricity, water, stormwater, wastewater, solid waste, communications and natural gas.

Water Supply. The Alameda County Water District has jurisdiction over the water service lines in the City of Fremont. The District stores water in 11 reservoirs and tanks, including Decoto Reservoir and the Appian Tank in Union City. According to the City of Fremont General Plan, total distribution system water use (excluding system losses) was approximately 137 acre-feet per day, or 45 million gallons per day (mgd) (50,000 acre-feet per year) in fiscal year 2007-2008.⁴⁷

The project would not result in the construction of new water supply facilities or expansion of such facilities. During construction, the project contractor may connect to existing nearby fire hydrants in order to access water for dust suppression. A hydrant meter would be used to allow the project contractor to utilize existing fire hydrants. Water use would cease when construction is complete. Sufficient water supplies are available to provide for the project's minimal water needs during the construction phase of the project.

⁴⁷ Fremont, City of. 2011. op. cit.

A solar PV project uses no water, gas, or fuels for the power generation process. The maintenance protocol is mainly routine inspections. Periodic routine maintenance comprises semi-annual or annual inspections, service, and cleaning, which would not require significant water use. Therefore, the proposed project would not require the construction of new or expanded water infrastructure.

Wastewater. The Union Sanitary District (USD) is responsible for collection and treatment of wastewater for a 60 square mile area including Union City, Fremont and Newark. The Alvarado Wastewater Treatment Plant is located in Union City, just west of Union City Boulevard. Wastewater generated within the USD service area is collected and conveyed by gravity sewers to three major pump stations. The Irvington Pump Station serves the southern portion of the service area, the Newark Pump Station serves the central portion and the Alvarado Pump Station serves the northern portion. Wastewater collected in the southern and central areas is transported to the Alvarado Wastewater Treatment Plant (Alvarado WWTP) in Union City via dual 33-inch and 39-inch force mains prior to outfall in the San Francisco Bay after treatment. The northern area wastewater is pumped directly to the WWTP from the Alvarado Pump Station.

Implementation of the project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities. The project would not result in the construction of new water treatment facilities or expansion of such facilities. During construction, water would be required primarily for dust suppression. This water percolates into the ground after use, requiring no wastewater treatment. Therefore, this impact would be less than significant.

Stormwater. The Alameda County Flood Control and Water Conservation District (ACFC), a division of the Alameda County Public Works Agency, provides flood protection for Alameda County residents and businesses. The stormwater system in Fremont is managed through a joint partnership between the ACFC and the City of Fremont. The ACFC has delineated two management zones within the City of Fremont – Zone 5 in the northern part of the City and Zone 6 in the south. Zone 6 includes the following creeks: Laguna, Mission, Canada Del Aliso, Agua Caliente, Agua Fria, Torogues and Scott. Water from these creeks flows to a series of pipelines and channels that discharge to either Coyote Creek or Mowry Slough before continuing to San Francisco Bay. Lake Elizabeth is a reservoir in Zone 6.

The City of Fremont has responsibility for maintaining the majority of the storm drainage system and ensuring that adequate storm drainage facilities are built to support new development. The City maintains local storm drains, replacing pipes and other facilities as needed.

As described in Section 3.10, Hydrology and Water Quality, the proposed project would create minimal impervious surfaces; therefore, the majority of the site would remain pervious, and changes to stormwater runoff would be nominal. Therefore, implementation of the proposed project would not significantly affect the amount of on-site runoff and; therefore, would not require the expansion of stormwater facilities. No additional stormwater drainage facilities would be required and no impact would occur.

Gas, Electricity and Telecommunications. Pacific Gas & Electric (PG&E) provides natural gas and electricity in the City. Traditional telephone service is provided by AT&T and its various precursor companies. Comcast operates the fiber-optic cable communications network. A variety of cellular

and wireless service companies operate in Fremont, providing important voice and data connections for the community.⁴⁸

The proposed project would install a solar PV power generation system to provide renewable energy for use at the project site. A solar PV project uses no water, gas, or fuels for the power generation process. The maintenance protocol is mainly routine inspections. Periodic routine maintenance comprises semi-annual or annual inspections, service, and cleaning, which would not require use of gas, electricity or telecommunications. A new PG&E service would be required to interconnect the new PV system into the electric grid; however, this facility is included as part of the proposed project and the impacts of its construction have been evaluated in this IS/MND. No additional facilities would be required. Therefore, the proposed project would not require or result in the relocation or construction of new or expanded gas, electricity or telecommunications facilities and no impact would occur.

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? (Less Than Significant Impact)

The project would not result in an increase in the amount of water that is currently distributed to the site. New or expanded water supply entitlements would not be required to serve the project. The project would require potable or reclaimed water for dust suppression during project construction. However, the amount of water required would be relatively small and would only be needed during the construction period. Once complete, operation and maintenance activities would only be conducted annually or semi-annually and limited water would be required. Therefore, a less than significant impact related to water supplies would occur as a result of implementation of the project.

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? (Less Than Significant Impact)

Refer to Section 3.19.a above. Implementation of the project would not result in a change in the wastewater treatment needed. Impacts related to wastewater treatment would be less than significant.

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? (Less Than Significant Impact)

Implementation of the project would generate solid waste associated with construction activities, including construction materials, trench spoils, and general refuse. To minimize the amount of solid waste, some solid waste generated by the proposed project, such as excavated soils, would be re-compacted on site. Other non-hazardous waste would be hauled to local disposal centers for

⁴⁸ Fremont, City of. 2011. op. cit.

recycling or taken to landfills. The proposed project would generate a minimal amount of solid waste, which would be disposed of at a local landfill.

The closest landfill to the project site is the Newby Island Landfill (approximately 6 miles south). As of October 2014, the Newby Island landfill had remaining capacity of 21.2 million cubic yards, with a total capacity of 57.5 million cubic yards.⁴⁹ The quantity of solid waste materials associated with construction would be limited to the construction period, and would not pose a significant impact upon existing landfills. No additional solid waste would be generated by long-term operations of the proposed project. Impacts related to solid waste disposal are considered less than significant.

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (Less Than Significant Impact)

As described in Section 3.19.d., implementation of the project would generate solid waste associated with construction activities. To the extent possible, solid waste would be recycled either on-site or transported to a local disposal center for recycling. Solid waste generation would be limited to the construction period; no solid waste would be generated from long-term operation of the proposed project. The proposed project would comply with federal, State, and local statutes and regulations related to solid waste. This impact would be less than significant.

⁴⁹ CalRecycle, 2019. Facility/Site Summary Details: Newby Island Sanitary Landfill (43-AN-0003). Website: www2.calrecycle.ca.gov/swfacilities/Directory/43-AN-0003/ (accessed February 20, 2020).

3.20 WILDFIRE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b. 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?	☐	☐	☐	☒
c. 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 risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d. 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?	☐	☐	☐	☒

a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan? (No Impact)

The project site is not located within any State responsibility areas (SRA) for fire service,⁵⁰ and is not within a very high fire hazard severity zone.⁵¹ In addition, as noted in Section 3.9.f, the proposed project would not impair the implementation of, or physically interfere with, and adopted emergency response plan and no impact would occur.

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? (No Impact)

Refer to Section 3.20.a. Additionally, as noted in Section 1.0, Project Information, the project site is generally level, and is bound by existing development on all sides. Therefore, the proposed project would not exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire and no impact would occur.

⁵⁰ CalFire, 2007. Alameda County Fire Hazard Severity Zones in SRA (map). Available at: osfm.fire.ca.gov/media/7271/fhszs_map1.pdf (accessed February 20, 2020).

⁵¹ CalFire, 2008. Alameda County Very High Fire Hazard Severity Zones in LRA. Available online at: osfm.fire.ca.gov/media/6638/fhszl_map1.pdf (accessed February 18, 2020).

- 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 risk or that may result in temporary or ongoing impacts to the environment? (No Impact)*

Refer to Section 3.20.a. The proposed project is not located within an SRA for fire service and is not within a very high fire hazard severity zone. Therefore, the proposed project would not require the installation or maintenance of associated infrastructure and no impact would occur.

- 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? (No Impact)*

Refer to Section 3.20.a and 3.20.b. The project site is generally level and is not located within an SRA for fire service or a very high fire hazard severity zone. Therefore, the proposed project would not expose people or structures to significant risks as a result of post-fire slope instability or drainage and runoff changes and no impact would occur.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does 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?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

- a. *Does 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? (Less Than Significant with Mitigation Incorporated)*

Implementation of the mitigation measures recommended in this Initial Study would ensure that the construction and operation of the proposed project would not substantially degrade the quality of the environment; reduce the habitat, population, or range of a plant or animal species; or eliminate important examples of California history or prehistory. As described in Section 3.4, Biological Resources, the proposed project would not result in impacts to biological resources, with the exception of potential impacts to bank swallow, western pond turtle, nesting birds and waters of the State. Mitigation measures are recommended to minimize impacts to nesting birds to a less than significant level. As discussed in Section 3.5, Cultural Resources, in the event that unanticipated archeological/historical resources and/or human remains are identified in the project area during construction, mitigation measures would be implemented to reduce potential impacts to a less-than-significant level.

- b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? (Less Than Significant Impact)*

The CEQA Guidelines require a discussion of significant environmental impacts that would result from project-related actions in combination with "closely related past, present, and probably future projects: located in the immediate vicinity (CEQA Guidelines Section 15130[b][1][A]). Cumulative environmental impacts are those impacts that by themselves are not significant, but when considered with impacts occurring from other projects in the vicinity would result in a cumulative impact. Related projects considered to have the potential of creating cumulative impacts in association with the proposed project consist of projects that are reasonably foreseeable and that would be constructed or operated during the life of the proposed project.

The proposed project would be located in a highly developed urban area that is largely built out. According to the City of Fremont development activity map,⁵² several projects have been approved or are currently under review in the project vicinity and could be under construction concurrently with the proposed project. These projects include:

- Leighton Business Center Parking Garage, located at 39350 Civic Center Drive (87,574 square feet of commercial);
- 3515 Walnut Apartments, located at 3515 Walnut Avenue (275 multi-family units and 2,245 square feet of commercial);
- High Town Square, located at 40849 High St (10 multi-family units);
- Lincoln Townhomes, located at 40857 Lincoln St (5 multi-family units);
- Montecito, located at 37350 Sequoia Road (73 multi-family units); and
- Boulevard Heights, located at 40744 Fremont Blvd (67 multi-family units).

As described in this Initial Study/Mitigated Negative Declaration, impacts associated with the proposed project would be largely temporary, construction-related and would be reduced to less than significant with implementation of the mitigation measures contained herein. Other projects under construction concurrent with the proposed project would implement similar mitigation measures. Therefore, the proposed project would not make a considerable contribution towards a cumulative impact related to construction impacts. The proposed project would provide renewable energy for use at the project site and would not result in individual operation period impacts or

⁵² Fremont, City of. 2020. Development Activity Map Amended through January 9, 2020. Available online at: www.fremont.gov/DocumentCenter/View/4983/Development-Activity-Map?bidId= (Accessed April 16, 2020).

make a considerable contribution to permanent operation-period impacts of other projects in the vicinity or the region.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? (Less Than Significant with Mitigation Incorporated)

As described in this IS/MND, any potential environmental impacts from the project would be reduced to less than significant with the implementation of the recommended mitigation measures. With implementation of measures both incorporated into the project design and recommended as mitigations to reduce the impacts associated with air quality, biological resources, cultural resources, water quality, and noise the project would not result in substantial adverse effects on human beings.

This page intentionally left blank.

4.0 LIST OF PREPARERS

LSA Associates, Inc.

157 Park Place

Point Richmond, California 94801

Theresa Wallace, AICP, Principal-in-Charge

Shanna Guiler, AICP, Associate, Project Manager

Tim Lacy, Principal Biologist

John Kunna, Senior Wildlife Biologist

Tim Milliken, Senior Botanist

Andrew Pulcheon, Principal Cultural Resources

Lora Holland, Senior Cultural Resources Manager

Patty Linder, Graphics and Production

Charis Hanshaw, Document Management

7086 North Maple Avenue, Suite 104

Fresno, California 93720

Amy Fischer, Principal, Air Quality & Noise Specialist

Cara Carlucci, Air Quality and Noise Specialist

20 Executive Park, Suite 200

Irvine, California 92614

Arthur Black, Associate/Transportation

This page intentionally left blank

5.0 REFERENCES

- Alameda County Flood Control District, 2017. Alameda County Flood Control District “Explore Watersheds” webpage: <https://acfloodcontrol.org/resources/explore-watersheds/laguna-creek-watershed/> (Accessed April 16, 2020).
- Association of Bay Area Governments and Metropolitan Transportation Commission, 2013. *Plan Bay Area*. July 18.
- Association of Bay Area Governments (ABAG), 2020a. Shaking Scenarios Map, Available: <mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8>, (accessed April 16, 2020).
- ABAG, 2020b. Liquefaction Susceptibility Map, Available: <mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8>, (accessed April 16, 2020).
- ABAG, 2020c. Interactive Landslide Hazards Map. Available online at: <mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8> (accessed March 21, 2020).
- Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.
- Bury, R.B., H.H. Welsh Jr., D.J. Germano, and A.T. Ashton (Editors). 2012. *Western Pond Turtle: Biology, Sampling Techniques, Inventory and Monitoring, Conservation, and Management*. Society for Northwestern Vertebrate Biology, Olympia, Washington.
- CalFire, 2008. Alameda County Very High Fire Hazard Severity Zones in LRA. Available online at: [osfm.fire.ca.gov/media/6638/fhszl_map1.pdf](osfm.fire.ca.gov/media/6638/fhszl_map1.pdf) (accessed April 16, 2020).
- CalFire, 2007. Alameda County Fire Hazard Severity Zones in SRA (map). Available at: [osfm.fire.ca.gov/media/7271/fhszs_map1.pdf](osfm.fire.ca.gov/media/7271/fhszs_map1.pdf) (accessed February 20, 2020).
- California Air Resources Board (CARB). 2019. California Greenhouse Gas Emission Inventory Program. California Greenhouse Gas Emissions for 2000 to 2017, Trends of Emissions and Other Indicators. 2019 Edition. Webpage last reviewed by CARB in 2019. Website: <https://ww2.arb.ca.gov/our-work/programs/ghg-inventory-program>
- California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program. 2016. Alameda County Important Farmland 2016. Available online at: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/ala16.pdf> (accessed April 16, 2020).
- California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program. 2015. Alameda County Williamson Act FY 2014-2015. Available online at: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Alameda_14_15_WA.pdf (accessed November 12, 2018).

- California Department of Conservation, 2018. California Earthquake Hazards Zone Application. Website: maps.conservation.ca.gov/cgs/EQZApp/app/ (accessed April 16, 2020).
- California Energy Commission. 2018. Energy Consumption Data Management Service. Electricity Consumption by County. Available online at: <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>. (accessed March 2020).
- California Energy Commission. 2018. Energy Consumption Data Management Service. Gas Consumption by County. Available online at: <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>. (accessed March 2020).
- California Energy Commission (CEC). 2019. California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets, https://www.energy.ca.gov/almanac/transportation_data/diesel.html
- California Energy Commission, 2020. 2019 Integrated Energy Policy Report. California Energy Commission. Publication Number: CEC-100-2019-001-CMF. January.
- California Geological Survey, 2003. Earthquake Zones of Required Investigation, Niles Quadrangle, Available: maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps, (accessed April 16, 2020).
- California, State of, 2009. *California Emergency Management Agency. Alameda County Tsunami Inundation Maps*. Available online at: <https://www.conservation.ca.gov/cgs/tsunami/maps/Alameda> (Accessed April 16, 2020).
- CalRecycle, 2019. Facility/Site Summary Details: Newby Island Sanitary Landfill (43-AN-0003). Website: www2.calrecycle.ca.gov/swfacilities/Directory/43-AN-0003/ (accessed February 20, 2020).
- Federal Emergency Management Agency. FEMA Flood Map Service Center website: msc.fema.gov/portal/search?AddressQuery=Driscoll%20Road%2C%20Fremont%2C%20California#searchresultsanchor (Accessed February 19, 2020).
- First Carbon Solutions, 2014. Draft Environmental Impact Report Warm Springs/South Fremont Community Plan, City of Fremont, Alameda County California, State Clearinghouse No. 2013032062. 15 January. Available online at: <https://www.fremont.gov/430/Environmental-Review> (Accessed April 16, 2020).
- Fremont, City of. 2012. *City of Fremont Climate Action Plan*. November.
- Fremont, City of. 2011. *City of Fremont General Plan*.
- Fremont, City of. 2011. City of Fremont General Plan, Diagram 7-4, Mineral Resources and Sites Subject to SMARA (Surface Mining and Reclamation Act).

- Fremont, City of, 2019. *Construction Hours*. October. Website:
<https://fremont.gov/DocumentCenter/View/4095/Construction-Hours?bidId=> (accessed March 2020).
- Fremont, City of. 2019. City of Fremont Fire Department website: fremont.gov/96/Fire-Department (Accessed February 19, 2020).
- Fremont, City of. 2019. City of Fremont Police Department website: www.fremontpolice.gov/home (Accessed February 19, 2020).
- Fremont, City of. 2019. City of Fremont, Recreation Services webpage: fremont.gov/259/Recreation-Services (Accessed February 19, 2020).
- Hellquist, C. Barre, Robert F. Thorne & Robert R. Haynes. 2012. *Stuckenia filiformis* subsp. *alpina*, in Jepson Flora Project (eds.) *Jepson eFlora*, [/eflora/eflora_display.php?tid=80318](https://eflora.eflora_display.php?tid=80318), accessed on April 07, 2020.
- Kleinfelder, 2019. Remedial Action Completion Report Quik Stop Market No. 98, 1848 Washington Boulevard, Fremont, California. 27 August. Available online at:
https://documents.geotracker.waterboards.ca.gov/esi/uploads/geo_report/9442449748/T0600101118.PDF (Accessed April 16, 2020)
- Lambert MR, McKenzie JM, Screen RM, Clause AG, Johnson BB, Mount GG, Shaffer HB, Pauly GB. 2019. Experimental removal of introduced slider turtles offers new insight into competition with a native, threatened turtle. *PeerJ* 7:e7444 <http://doi.org/10.7717/peerj.7444>
- Richmond, B., H. Green, and D.C. Rice. 2011. Alameda County Breeding Bird Atlas. Golden Gate Audubon Society and Ohlone Audubon Society.
- Riensch, D.L., S.K. Riensch, and R.E. Riensch. 2019. *Habitat Use, Movement Patterns, and Nest Site Selection by Western Pond Turtle (Actinemys marmorata) in a Managed Central California Rangeland Pond*. *Northwestern Naturalist* 100:90-101.
- State Water Resources Control Board. 2018. Geotracker website application. Available online at:
<https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=42900+Paseo+Padre+Parkway%2C+Fremont%2C+CA> (Accessed April 16, 2020).
- Thomson, R.C., A.N. Wright, and H.B. Shaffer. 2016. California Amphibian and Reptile Species of Special Concern. California Department of Fish and Wildlife. University of California Press, Oakland, California.
- United States Geological Survey (USGS). 2006. Draft USGS Western Pond Turtle (*Emys marmorata*) Trapping Survey Protocol for the Southcoast Ecoregion. Sacramento
- United States Department of Agriculture Soil Conservation Service, 2019. Web Soil Survey. Available online at: websoilsurvey.sc.egov.usda.gov/App/HomePage.htm (accessed April 16, 2020).

United States Department of Agriculture Soil Conservation Service, 1975. Soil Survey of Alameda County, Western Part. Available online at:

[www.nrcs.usda.gov/Internet/FSE MANUSCRIPTS/california/CA610/0/alameda.pdf](http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/CA610/0/alameda.pdf)
(accessed November 12, 2018).

United States Energy Information Administration (EIA). 2018a. "California -Profile Overview." Last modified: January 16, 2020. <https://www.eia.gov/state/?sid=CA>

United States Geological Survey, 2018. The Modified Mercalli Intensity Scale. Available:
www.usgs.gov/natural-hazards/earthquake-hazards/science/modified-mercalli-intensity-scale?qt-science_center_objects=0#qt-science_center_objects, (accessed February 18, 2020).

Woodburn DB, Miller AN, Allender MC, Maddox CW, Terio KA. 2019. Emydomyces testavorans, a new genus and species of onygenalean fungus isolated from shell lesions of freshwater aquatic turtles. J Clin Microbiol 57:e00628-18. <https://doi.org/10.1128/JCM.00628-18>.
Editor David W Warnock.

APPENDIX A

CALEEMOD OUTPUT SHEETS

This page intentionally left blank

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

Pit T1 and T2 Solar Implementation Project

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	296.00	1000sqft	6.80	296,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

Project Characteristics -

Land Use -

Construction Phase - Anticipated construction schedule

Off-road Equipment - Site access construction would include rollers, dozers, and tractors.

Off-road Equipment - Equipment list provided by construction contractor.

Off-road Equipment -

Trips and VMT - Dump trucks and water trucks are included in vendor truck trips. Approx. 7 to 12 construction workers on-site per day.

Vehicle Trips - Maintenance worker trips are included.

Construction Off-road Equipment Mitigation - All off-road equipment over 50 HP will utilize EPA Tier 2 engines. Water exposed area at least three times daily.

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	17760	17700
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	230.00	100.00
tblConstructionPhase	PhaseEndDate	9/27/2021	3/1/2021
tblConstructionPhase	PhaseEndDate	11/9/2020	10/12/2020
tblConstructionPhase	PhaseEndDate	10/25/2021	3/29/2021
tblConstructionPhase	PhaseEndDate	10/12/2020	9/14/2020
tblConstructionPhase	PhaseStartDate	11/10/2020	10/13/2020
tblConstructionPhase	PhaseStartDate	10/13/2020	9/15/2020
tblConstructionPhase	PhaseStartDate	9/28/2021	3/2/2021
tblConstructionPhase	PhaseStartDate	9/29/2020	9/1/2020
tblOffRoadEquipment	HorsePower	203.00	247.00
tblOffRoadEquipment	LoadFactor	0.36	0.40
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	49.00	48.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblTripsAndVMT	WorkerTripNumber	124.00	36.00
tblVehicleTrips	WD_TR	0.00	2.00

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

2.0 Emissions Summary**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1260	1.3080	0.8914	1.9000e-003	0.1755	0.0622	0.2377	0.0888	0.0579	0.1467	0.0000	168.9030	168.9030	0.0366	0.0000	169.8185
2021	0.0586	0.6073	0.5395	1.1400e-003	0.0139	0.0272	0.0411	3.8600e-003	0.0254	0.0293	0.0000	101.7449	101.7449	0.0198	0.0000	102.2408
Maximum	0.1260	1.3080	0.8914	1.9000e-003	0.1755	0.0622	0.2377	0.0888	0.0579	0.1467	0.0000	168.9030	168.9030	0.0366	0.0000	169.8185

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0817	1.3751	0.9774	1.9000e-003	0.0804	0.0465	0.1269	0.0379	0.0458	0.0838	0.0000	168.9028	168.9028	0.0366	0.0000	169.8183
2021	0.0459	0.7533	0.5902	1.1400e-003	0.0139	0.0250	0.0389	3.8600e-003	0.0248	0.0287	0.0000	101.7448	101.7448	0.0198	0.0000	102.2407
Maximum	0.0817	1.3751	0.9774	1.9000e-003	0.0804	0.0465	0.1269	0.0379	0.0458	0.0838	0.0000	168.9028	168.9028	0.0366	0.0000	169.8183

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	30.87	-11.13	-9.56	0.00	50.20	20.01	40.52	54.88	15.20	36.08	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2020	11-30-2020	1.1199	1.1229
2	12-1-2020	2-28-2021	0.8260	0.9099
3	3-1-2021	5-31-2021	0.1537	0.2235
		Highest	1.1199	1.1229

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0255	3.0000e-005	2.7300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.2900e-003	5.2900e-003	1.0000e-005	0.0000	5.6400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0255	3.0000e-005	2.7300e-003	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	1.0000e-005	1.0000e-005	0.0000	5.2900e-003	5.2900e-003	1.0000e-005	0.0000	5.6400e-003

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0255	3.0000e-005	2.7300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.2900e-003	5.2900e-003	1.0000e-005	0.0000	5.6400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0255	3.0000e-005	2.7300e-003	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	1.0000e-005	1.0000e-005	0.0000	5.2900e-003	5.2900e-003	1.0000e-005	0.0000	5.6400e-003

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2020	9/14/2020	5	10	
2	Grading	Grading	9/15/2020	10/12/2020	5	20	
3	Building Construction	Building Construction	10/13/2020	3/1/2021	5	100	
4	Paving	Paving	3/2/2021	3/29/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 6.8

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rollers	2	8.00	80	0.38
Grading	Excavators	1	8.00	158	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Forklifts	2	8.00	89	0.20
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Loaders	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	15.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	36.00	48.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Site Preparation - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0225	0.2329	0.1265	2.2000e-004		0.0123	0.0123		0.0113	0.0113	0.0000	19.0202	19.0202	6.1500e-003	0.0000	19.1740
Total	0.0225	0.2329	0.1265	2.2000e-004	0.0903	0.0123	0.1026	0.0497	0.0113	0.0610	0.0000	19.0202	19.0202	6.1500e-003	0.0000	19.1740

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

3.2 Site Preparation - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.9000e-004	3.0100e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8083	0.8083	2.0000e-005	0.0000	0.8088
Total	4.0000e-004	2.9000e-004	3.0100e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8083	0.8083	2.0000e-005	0.0000	0.8088

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0352	0.0000	0.0352	0.0194	0.0000	0.0194	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0106	0.2095	0.1331	2.2000e-004		7.2700e-003	7.2700e-003		7.1000e-003	7.1000e-003	0.0000	19.0202	19.0202	6.1500e-003	0.0000	19.1740
Total	0.0106	0.2095	0.1331	2.2000e-004	0.0352	7.2700e-003	0.0425	0.0194	7.1000e-003	0.0265	0.0000	19.0202	19.0202	6.1500e-003	0.0000	19.1740

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

3.2 Site Preparation - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.9000e-004	3.0100e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8083	0.8083	2.0000e-005	0.0000	0.8088
Total	4.0000e-004	2.9000e-004	3.0100e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8083	0.8083	2.0000e-005	0.0000	0.8088

3.3 Grading - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0322	0.3494	0.2063	4.1000e-004		0.0167	0.0167		0.0153	0.0153	0.0000	36.1666	36.1666	0.0117	0.0000	36.4591
Total	0.0322	0.3494	0.2063	4.1000e-004	0.0655	0.0167	0.0822	0.0337	0.0153	0.0490	0.0000	36.1666	36.1666	0.0117	0.0000	36.4591

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

3.3 Grading - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-005	2.3500e-003	5.1000e-004	1.0000e-005	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5290	0.5290	3.0000e-005	0.0000	0.5298
Worker	5.2000e-004	3.8000e-004	3.9200e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0543	1.0543	3.0000e-005	0.0000	1.0550
Total	6.0000e-004	2.7300e-003	4.4300e-003	2.0000e-005	1.3200e-003	2.0000e-005	1.3300e-003	3.6000e-004	2.0000e-005	3.7000e-004	0.0000	1.5833	1.5833	6.0000e-005	0.0000	1.5847

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0256	0.0000	0.0256	0.0131	0.0000	0.0131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0164	0.3736	0.2576	4.1000e-004		0.0118	0.0118		0.0116	0.0116	0.0000	36.1666	36.1666	0.0117	0.0000	36.4590
Total	0.0164	0.3736	0.2576	4.1000e-004	0.0256	0.0118	0.0373	0.0131	0.0116	0.0247	0.0000	36.1666	36.1666	0.0117	0.0000	36.4590

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

3.3 Grading - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-005	2.3500e-003	5.1000e-004	1.0000e-005	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5290	0.5290	3.0000e-005	0.0000	0.5298
Worker	5.2000e-004	3.8000e-004	3.9200e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0543	1.0543	3.0000e-005	0.0000	1.0550
Total	6.0000e-004	2.7300e-003	4.4300e-003	2.0000e-005	1.3200e-003	2.0000e-005	1.3300e-003	3.6000e-004	2.0000e-005	3.7000e-004	0.0000	1.5833	1.5833	6.0000e-005	0.0000	1.5847

3.4 Building Construction - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0615	0.5564	0.4886	7.8000e-004		0.0324	0.0324		0.0305	0.0305	0.0000	67.1669	67.1669	0.0164	0.0000	67.5766
Total	0.0615	0.5564	0.4886	7.8000e-004		0.0324	0.0324		0.0305	0.0305	0.0000	67.1669	67.1669	0.0164	0.0000	67.5766

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

3.4 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2300e-003	0.1636	0.0353	3.8000e-004	9.1400e-003	7.6000e-004	9.9000e-003	2.6400e-003	7.3000e-004	3.3700e-003	0.0000	36.8198	36.8198	2.1200e-003	0.0000	36.8728
Worker	3.6100e-003	2.6600e-003	0.0273	8.0000e-005	8.2500e-003	6.0000e-005	8.3100e-003	2.2000e-003	5.0000e-005	2.2500e-003	0.0000	7.3378	7.3378	1.9000e-004	0.0000	7.3426
Total	8.8400e-003	0.1663	0.0626	4.6000e-004	0.0174	8.2000e-004	0.0182	4.8400e-003	7.8000e-004	5.6200e-003	0.0000	44.1577	44.1577	2.3100e-003	0.0000	44.2153

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0450	0.6228	0.5167	7.8000e-004		0.0266	0.0266		0.0263	0.0263	0.0000	67.1668	67.1668	0.0164	0.0000	67.5765
Total	0.0450	0.6228	0.5167	7.8000e-004		0.0266	0.0266		0.0263	0.0263	0.0000	67.1668	67.1668	0.0164	0.0000	67.5765

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

3.4 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2300e-003	0.1636	0.0353	3.8000e-004	9.1400e-003	7.6000e-004	9.9000e-003	2.6400e-003	7.3000e-004	3.3700e-003	0.0000	36.8198	36.8198	2.1200e-003	0.0000	36.8728
Worker	3.6100e-003	2.6600e-003	0.0273	8.0000e-005	8.2500e-003	6.0000e-005	8.3100e-003	2.2000e-003	5.0000e-005	2.2500e-003	0.0000	7.3378	7.3378	1.9000e-004	0.0000	7.3426
Total	8.8400e-003	0.1663	0.0626	4.6000e-004	0.0174	8.2000e-004	0.0182	4.8400e-003	7.8000e-004	5.6200e-003	0.0000	44.1577	44.1577	2.3100e-003	0.0000	44.2153

3.4 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0399	0.3661	0.3481	5.7000e-004		0.0201	0.0201		0.0189	0.0189	0.0000	48.6438	48.6438	0.0117	0.0000	48.9372
Total	0.0399	0.3661	0.3481	5.7000e-004		0.0201	0.0201		0.0189	0.0189	0.0000	48.6438	48.6438	0.0117	0.0000	48.9372

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

3.4 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1200e-003	0.1078	0.0228	2.8000e-004	6.6200e-003	2.2000e-004	6.8400e-003	1.9200e-003	2.2000e-004	2.1300e-003	0.0000	26.4066	26.4066	1.4500e-003	0.0000	26.4429
Worker	2.4100e-003	1.7200e-003	0.0180	6.0000e-005	5.9800e-003	4.0000e-005	6.0200e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	5.1293	5.1293	1.2000e-004	0.0000	5.1323
Total	5.5300e-003	0.1095	0.0409	3.4000e-004	0.0126	2.6000e-004	0.0129	3.5100e-003	2.6000e-004	3.7600e-003	0.0000	31.5359	31.5359	1.5700e-003	0.0000	31.5752

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0305	0.4401	0.3724	5.7000e-004		0.0181	0.0181		0.0179	0.0179	0.0000	48.6438	48.6438	0.0117	0.0000	48.9372
Total	0.0305	0.4401	0.3724	5.7000e-004		0.0181	0.0181		0.0179	0.0179	0.0000	48.6438	48.6438	0.0117	0.0000	48.9372

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

3.4 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1200e-003	0.1078	0.0228	2.8000e-004	6.6200e-003	2.2000e-004	6.8400e-003	1.9200e-003	2.2000e-004	2.1300e-003	0.0000	26.4066	26.4066	1.4500e-003	0.0000	26.4429
Worker	2.4100e-003	1.7200e-003	0.0180	6.0000e-005	5.9800e-003	4.0000e-005	6.0200e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	5.1293	5.1293	1.2000e-004	0.0000	5.1323
Total	5.5300e-003	0.1095	0.0409	3.4000e-004	0.0126	2.6000e-004	0.0129	3.5100e-003	2.6000e-004	3.7600e-003	0.0000	31.5359	31.5359	1.5700e-003	0.0000	31.5752

3.5 Paving - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

3.5 Paving - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-005	2.1400e-003	4.5000e-004	1.0000e-005	1.3000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.5239	0.5239	3.0000e-005	0.0000	0.5247
Worker	4.8000e-004	3.4000e-004	3.5800e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0177	1.0177	2.0000e-005	0.0000	1.0183
Total	5.4000e-004	2.4800e-003	4.0300e-003	2.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.6000e-004	1.0000e-005	3.6000e-004	0.0000	1.5417	1.5417	5.0000e-005	0.0000	1.5430

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3100e-003	0.2012	0.1730	2.3000e-004		6.6700e-003	6.6700e-003		6.6700e-003	6.6700e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	9.3100e-003	0.2012	0.1730	2.3000e-004		6.6700e-003	6.6700e-003		6.6700e-003	6.6700e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

3.5 Paving - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-005	2.1400e-003	4.5000e-004	1.0000e-005	1.3000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.5239	0.5239	3.0000e-005	0.0000	0.5247
Worker	4.8000e-004	3.4000e-004	3.5800e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0177	1.0177	2.0000e-005	0.0000	1.0183
Total	5.4000e-004	2.4800e-003	4.0300e-003	2.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.6000e-004	1.0000e-005	3.6000e-004	0.0000	1.5417	1.5417	5.0000e-005	0.0000	1.5430

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739

5.0 Energy Detail

Historical Energy Use: N

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

5.1 Mitigation Measures Energy

[illegible]

5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0255	3.0000e-005	2.7300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.2900e-003	5.2900e-003	1.0000e-005	0.0000	5.6400e-003
Unmitigated	0.0255	3.0000e-005	2.7300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.2900e-003	5.2900e-003	1.0000e-005	0.0000	5.6400e-003

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.1500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0191					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.6000e-004	3.0000e-005	2.7300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.2900e-003	5.2900e-003	1.0000e-005	0.0000	5.6400e-003
Total	0.0255	3.0000e-005	2.7300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.2900e-003	5.2900e-003	1.0000e-005	0.0000	5.6400e-003

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.1500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0191					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.6000e-004	3.0000e-005	2.7300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.2900e-003	5.2900e-003	1.0000e-005	0.0000	5.6400e-003
Total	0.0255	3.0000e-005	2.7300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.2900e-003	5.2900e-003	1.0000e-005	0.0000	5.6400e-003

7.0 Water Detail

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

Pit T1 and T2 Solar Implementation Project - Alameda County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

Pit T1 and T2 Solar Implementation Project

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	296.00	1000sqft	6.80	296,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

Project Characteristics -

Land Use -

Construction Phase - Anticipated construction schedule

Off-road Equipment - Site access construction would include rollers, dozers, and tractors.

Off-road Equipment - Equipment list provided by construction contractor.

Off-road Equipment -

Trips and VMT - Dump trucks and water trucks are included in vendor truck trips. Approx. 7 to 12 construction workers on-site per day.

Vehicle Trips - Maintenance worker trips are included.

Construction Off-road Equipment Mitigation - All off-road equipment over 50 HP will utilize EPA Tier 2 engines. Water exposed area at least three times daily.

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	17760	17700
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	230.00	100.00
tblConstructionPhase	PhaseEndDate	9/27/2021	3/1/2021
tblConstructionPhase	PhaseEndDate	11/9/2020	10/12/2020
tblConstructionPhase	PhaseEndDate	10/25/2021	3/29/2021
tblConstructionPhase	PhaseEndDate	10/12/2020	9/14/2020
tblConstructionPhase	PhaseStartDate	11/10/2020	10/13/2020
tblConstructionPhase	PhaseStartDate	10/13/2020	9/15/2020
tblConstructionPhase	PhaseStartDate	9/28/2021	3/2/2021
tblConstructionPhase	PhaseStartDate	9/29/2020	9/1/2020
tblOffRoadEquipment	HorsePower	203.00	247.00
tblOffRoadEquipment	LoadFactor	0.36	0.40
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	49.00	48.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblTripsAndVMT	WorkerTripNumber	124.00	36.00
tblVehicleTrips	WD_TR	0.00	2.00

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5769	46.6314	25.9565	0.0452	18.2552	2.4640	20.7192	9.9808	2.2669	12.2477	0.0000	4,385.367 6	4,385.367 6	1.3611	0.0000	4,419.395 1
2021	2.1677	22.5885	18.5233	0.0431	0.6210	0.9711	1.5921	0.1721	0.9132	1.0852	0.0000	4,245.981 8	4,245.981 8	0.7198	0.0000	4,263.375 3
Maximum	4.5769	46.6314	25.9565	0.0452	18.2552	2.4640	20.7192	9.9808	2.2669	12.2477	0.0000	4,385.367 6	4,385.367 6	1.3611	0.0000	4,419.395 1

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.1932	41.9423	27.2845	0.0452	7.2348	1.4545	8.6893	3.9231	1.4211	5.3442	0.0000	4,385.367 6	4,385.367 6	1.3611	0.0000	4,419.395 1
2021	1.7182	26.1135	19.6797	0.0431	0.6210	0.8733	1.4942	0.1721	0.8646	1.0367	0.0000	4,245.981 8	4,245.981 8	0.7198	0.0000	4,263.375 3
Maximum	2.1932	41.9423	27.2845	0.0452	7.2348	1.4545	8.6893	3.9231	1.4211	5.3442	0.0000	4,385.367 6	4,385.367 6	1.3611	0.0000	4,419.395 1

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	42.01	1.68	-5.59	0.00	58.38	32.24	54.36	59.66	28.12	52.14	0.00	0.00	0.00	0.00	0.00	0.00

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1414	2.8000e-004	0.0303	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004	0.0000	0.0691

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1414	2.8000e-004	0.0303	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004	0.0000	0.0691

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2020	9/14/2020	5	10	
2	Grading	Grading	9/15/2020	10/12/2020	5	20	
3	Building Construction	Building Construction	10/13/2020	3/1/2021	5	100	
4	Paving	Paving	3/2/2021	3/29/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 6.8

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rollers	2	8.00	80	0.38
Grading	Excavators	1	8.00	158	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Forklifts	2	8.00	89	0.20
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Loaders	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	15.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	36.00	48.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Site Preparation - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.4928	46.5796	25.3004	0.0433		2.4628	2.4628		2.2658	2.2658		4,193.234 4	4,193.234 4	1.3562		4,227.138 9
Total	4.4928	46.5796	25.3004	0.0433	18.0663	2.4628	20.5290	9.9307	2.2658	12.1964		4,193.234 4	4,193.234 4	1.3562		4,227.138 9

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

3.2 Site Preparation - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0841	0.0518	0.6561	1.9300e-003	0.1889	1.2600e-003	0.1902	0.0501	1.1600e-003	0.0513		192.1332	192.1332	4.9200e-003		192.2563
Total	0.0841	0.0518	0.6561	1.9300e-003	0.1889	1.2600e-003	0.1902	0.0501	1.1600e-003	0.0513		192.1332	192.1332	4.9200e-003		192.2563

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	2.1091	41.8905	26.6284	0.0433		1.4533	1.4533		1.4200	1.4200	0.0000	4,193.234 4	4,193.234 4	1.3562		4,227.138 9
Total	2.1091	41.8905	26.6284	0.0433	7.0458	1.4533	8.4991	3.8730	1.4200	5.2930	0.0000	4,193.234 4	4,193.234 4	1.3562		4,227.138 9

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

3.2 Site Preparation - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0841	0.0518	0.6561	1.9300e-003	0.1889	1.2600e-003	0.1902	0.0501	1.1600e-003	0.0513		192.1332	192.1332	4.9200e-003		192.2563
Total	0.0841	0.0518	0.6561	1.9300e-003	0.1889	1.2600e-003	0.1902	0.0501	1.1600e-003	0.0513		192.1332	192.1332	4.9200e-003		192.2563

3.3 Grading - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.2226	34.9424	20.6245	0.0412		1.6647	1.6647		1.5315	1.5315		3,986.6886	3,986.6886	1.2894		4,018.9230
Total	3.2226	34.9424	20.6245	0.0412	6.5523	1.6647	8.2170	3.3675	1.5315	4.8990		3,986.6886	3,986.6886	1.2894		4,018.9230

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

3.3 Grading - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.3600e-003	0.2324	0.0472	5.6000e-004	0.0136	1.0800e-003	0.0146	3.9000e-003	1.0400e-003	4.9400e-003		58.9957	58.9957	3.2100e-003		59.0760
Worker	0.0549	0.0338	0.4279	1.2600e-003	0.1232	8.2000e-004	0.1240	0.0327	7.6000e-004	0.0334		125.3043	125.3043	3.2100e-003		125.3845
Total	0.0622	0.2662	0.4751	1.8200e-003	0.1368	1.9000e-003	0.1387	0.0366	1.8000e-003	0.0384		184.3000	184.3000	6.4200e-003		184.4605

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.6379	37.3633	25.7595	0.0412		1.1759	1.1759		1.1586	1.1586	0.0000	3,986.6886	3,986.6886	1.2894		4,018.9230
Total	1.6379	37.3633	25.7595	0.0412	2.5554	1.1759	3.7313	1.3133	1.1586	2.4719	0.0000	3,986.6886	3,986.6886	1.2894		4,018.9230

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

3.3 Grading - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.3600e-003	0.2324	0.0472	5.6000e-004	0.0136	1.0800e-003	0.0146	3.9000e-003	1.0400e-003	4.9400e-003		58.9957	58.9957	3.2100e-003		59.0760
Worker	0.0549	0.0338	0.4279	1.2600e-003	0.1232	8.2000e-004	0.1240	0.0327	7.6000e-004	0.0334		125.3043	125.3043	3.2100e-003		125.3845
Total	0.0622	0.2662	0.4751	1.8200e-003	0.1368	1.9000e-003	0.1387	0.0366	1.8000e-003	0.0384		184.3000	184.3000	6.4200e-003		184.4605

3.4 Building Construction - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

3.4 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1766	5.5782	1.1328	0.0134	0.3252	0.0260	0.3512	0.0936	0.0249	0.1185		1,415.8975	1,415.8975	0.0770		1,417.8231
Worker	0.1317	0.0811	1.0270	3.0200e-003	0.2957	1.9700e-003	0.2977	0.0784	1.8200e-003	0.0803		300.7302	300.7302	7.7100e-003		300.9229
Total	0.3083	5.6592	2.1597	0.0164	0.6210	0.0280	0.6489	0.1721	0.0267	0.1988		1,716.6277	1,716.6277	0.0847		1,718.7460

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5502	21.4741	17.8156	0.0269		0.9176	0.9176		0.9084	0.9084	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	1.5502	21.4741	17.8156	0.0269		0.9176	0.9176		0.9084	0.9084	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

3.4 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1766	5.5782	1.1328	0.0134	0.3252	0.0260	0.3512	0.0936	0.0249	0.1185		1,415.8975	1,415.8975	0.0770		1,417.8231
Worker	0.1317	0.0811	1.0270	3.0200e-003	0.2957	1.9700e-003	0.2977	0.0784	1.8200e-003	0.0803		300.7302	300.7302	7.7100e-003		300.9229
Total	0.3083	5.6592	2.1597	0.0164	0.6210	0.0280	0.6489	0.1721	0.0267	0.1988		1,716.6277	1,716.6277	0.0847		1,718.7460

3.4 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

3.4 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1452	5.0841	1.0103	0.0133	0.3252	0.0106	0.3358	0.0937	0.0101	0.1038		1,402.3220	1,402.3220	0.0728		1,404.1428
Worker	0.1216	0.0723	0.9378	2.9100e-003	0.2957	1.9100e-003	0.2976	0.0784	1.7600e-003	0.0802		290.2959	290.2959	6.8900e-003		290.4683
Total	0.2668	5.1564	1.9481	0.0162	0.6210	0.0125	0.6335	0.1721	0.0119	0.1840		1,692.6179	1,692.6179	0.0797		1,694.6110

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4515	20.9571	17.7316	0.0269		0.8608	0.8608		0.8528	0.8528	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	1.4515	20.9571	17.7316	0.0269		0.8608	0.8608		0.8528	0.8528	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

3.4 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1452	5.0841	1.0103	0.0133	0.3252	0.0106	0.3358	0.0937	0.0101	0.1038		1,402.3220	1,402.3220	0.0728		1,404.1428
Worker	0.1216	0.0723	0.9378	2.9100e-003	0.2957	1.9100e-003	0.2976	0.0784	1.7600e-003	0.0802		290.2959	290.2959	6.8900e-003		290.4683
Total	0.2668	5.1564	1.9481	0.0162	0.6210	0.0125	0.6335	0.1721	0.0119	0.1840		1,692.6179	1,692.6179	0.0797		1,694.6110

3.5 Paving - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

3.5 Paving - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.0500e-003	0.2118	0.0421	5.5000e-004	0.0136	4.4000e-004	0.0140	3.9000e-003	4.2000e-004	4.3200e-003		58.4301	58.4301	3.0300e-003		58.5060
Worker	0.0507	0.0301	0.3907	1.2100e-003	0.1232	8.0000e-004	0.1240	0.0327	7.3000e-004	0.0334		120.9566	120.9566	2.8700e-003		121.0285
Total	0.0567	0.2420	0.4328	1.7600e-003	0.1368	1.2400e-003	0.1380	0.0366	1.1500e-003	0.0377		179.3867	179.3867	5.9000e-003		179.5344

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9311	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9311	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

3.5 Paving - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.0500e-003	0.2118	0.0421	5.5000e-004	0.0136	4.4000e-004	0.0140	3.9000e-003	4.2000e-004	4.3200e-003		58.4301	58.4301	3.0300e-003		58.5060
Worker	0.0507	0.0301	0.3907	1.2100e-003	0.1232	8.0000e-004	0.1240	0.0327	7.3000e-004	0.0334		120.9566	120.9566	2.8700e-003		121.0285
Total	0.0567	0.2420	0.4328	1.7600e-003	0.1368	1.2400e-003	0.1380	0.0366	1.1500e-003	0.0377		179.3867	179.3867	5.9000e-003		179.5344

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739

5.0 Energy Detail

Historical Energy Use: N

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691
Unmitigated	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0337					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.8300e-003	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691
Total	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0337					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.8300e-003	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691
Total	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691

7.0 Water Detail

Pit T1 and T2 Solar Implementation Project - Alameda County, Summer

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

Pit T1 and T2 Solar Implementation Project

Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	296.00	1000sqft	6.80	296,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	5			Operational Year	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

Project Characteristics -

Land Use -

Construction Phase - Anticipated construction schedule

Off-road Equipment - Site access construction would include rollers, dozers, and tractors.

Off-road Equipment - Equipment list provided by construction contractor.

Off-road Equipment -

Trips and VMT - Dump trucks and water trucks are included in vendor truck trips. Approx. 7 to 12 construction workers on-site per day.

Vehicle Trips - Maintenance worker trips are included.

Construction Off-road Equipment Mitigation - All off-road equipment over 50 HP will utilize EPA Tier 2 engines. Water exposed area at least three times daily.

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	17760	17700
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	230.00	100.00
tblConstructionPhase	PhaseEndDate	9/27/2021	3/1/2021
tblConstructionPhase	PhaseEndDate	11/9/2020	10/12/2020
tblConstructionPhase	PhaseEndDate	10/25/2021	3/29/2021
tblConstructionPhase	PhaseEndDate	10/12/2020	9/14/2020
tblConstructionPhase	PhaseStartDate	11/10/2020	10/13/2020
tblConstructionPhase	PhaseStartDate	10/13/2020	9/15/2020
tblConstructionPhase	PhaseStartDate	9/28/2021	3/2/2021
tblConstructionPhase	PhaseStartDate	9/29/2020	9/1/2020
tblOffRoadEquipment	HorsePower	203.00	247.00
tblOffRoadEquipment	LoadFactor	0.36	0.40
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	49.00	48.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblTripsAndVMT	WorkerTripNumber	124.00	36.00
tblVehicleTrips	WD_TR	0.00	2.00

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5805	46.6440	25.9199	0.0450	18.2552	2.4640	20.7192	9.9808	2.2669	12.2477	0.0000	4,370.037 4	4,370.037 4	1.3608	0.0000	4,404.057 2
2021	2.1814	22.6435	18.6336	0.0425	0.6210	0.9714	1.5924	0.1721	0.9135	1.0856	0.0000	4,184.239 4	4,184.239 4	0.7199	0.0000	4,201.809 8
Maximum	4.5805	46.6440	25.9199	0.0450	18.2552	2.4640	20.7192	9.9808	2.2669	12.2477	0.0000	4,370.037 4	4,370.037 4	1.3608	0.0000	4,404.057 2

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.1969	41.9549	27.2480	0.0450	7.2348	1.4545	8.6893	3.9231	1.4211	5.3442	0.0000	4,370.037 4	4,370.037 4	1.3608	0.0000	4,404.057 2
2021	1.7319	26.1685	19.7900	0.0425	0.6210	0.8736	1.4946	0.1721	0.8649	1.0370	0.0000	4,184.239 4	4,184.239 4	0.7199	0.0000	4,201.809 8
Maximum	2.1969	41.9549	27.2480	0.0450	7.2348	1.4545	8.6893	3.9231	1.4211	5.3442	0.0000	4,370.037 4	4,370.037 4	1.3608	0.0000	4,404.057 2

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	41.90	1.68	-5.58	0.00	58.38	32.23	54.36	59.66	28.12	52.14	0.00	0.00	0.00	0.00	0.00	0.00

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1414	2.8000e-004	0.0303	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004	0.0000	0.0691

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.1414	2.8000e-004	0.0303	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004	0.0000	0.0691

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2020	9/14/2020	5	10	
2	Grading	Grading	9/15/2020	10/12/2020	5	20	
3	Building Construction	Building Construction	10/13/2020	3/1/2021	5	100	
4	Paving	Paving	3/2/2021	3/29/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 6.8

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rollers	2	8.00	80	0.38
Grading	Excavators	1	8.00	158	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Forklifts	2	8.00	89	0.20
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Loaders	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	15.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	36.00	48.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Site Preparation - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.4928	46.5796	25.3004	0.0433		2.4628	2.4628		2.2658	2.2658		4,193.234 4	4,193.234 4	1.3562		4,227.138 9
Total	4.4928	46.5796	25.3004	0.0433	18.0663	2.4628	20.5290	9.9307	2.2658	12.1964		4,193.234 4	4,193.234 4	1.3562		4,227.138 9

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

3.2 Site Preparation - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0878	0.0644	0.6195	1.7700e-003	0.1889	1.2600e-003	0.1902	0.0501	1.1600e-003	0.0513		176.8030	176.8030	4.6100e-003		176.9183
Total	0.0878	0.0644	0.6195	1.7700e-003	0.1889	1.2600e-003	0.1902	0.0501	1.1600e-003	0.0513		176.8030	176.8030	4.6100e-003		176.9183

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	2.1091	41.8905	26.6284	0.0433		1.4533	1.4533		1.4200	1.4200	0.0000	4,193.234 4	4,193.234 4	1.3562		4,227.138 9
Total	2.1091	41.8905	26.6284	0.0433	7.0458	1.4533	8.4991	3.8730	1.4200	5.2930	0.0000	4,193.234 4	4,193.234 4	1.3562		4,227.138 9

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

3.2 Site Preparation - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0878	0.0644	0.6195	1.7700e-003	0.1889	1.2600e-003	0.1902	0.0501	1.1600e-003	0.0513		176.8030	176.8030	4.6100e-003		176.9183
Total	0.0878	0.0644	0.6195	1.7700e-003	0.1889	1.2600e-003	0.1902	0.0501	1.1600e-003	0.0513		176.8030	176.8030	4.6100e-003		176.9183

3.3 Grading - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.2226	34.9424	20.6245	0.0412		1.6647	1.6647		1.5315	1.5315		3,986.6886	3,986.6886	1.2894		4,018.9230
Total	3.2226	34.9424	20.6245	0.0412	6.5523	1.6647	8.2170	3.3675	1.5315	4.8990		3,986.6886	3,986.6886	1.2894		4,018.9230

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

3.3 Grading - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.7300e-003	0.2347	0.0546	5.4000e-004	0.0136	1.1000e-003	0.0147	3.9000e-003	1.0500e-003	4.9500e-003		57.3745	57.3745	3.5400e-003		57.4630
Worker	0.0572	0.0420	0.4040	1.1600e-003	0.1232	8.2000e-004	0.1240	0.0327	7.6000e-004	0.0334		115.3063	115.3063	3.0100e-003		115.3815
Total	0.0650	0.2767	0.4587	1.7000e-003	0.1368	1.9200e-003	0.1387	0.0366	1.8100e-003	0.0384		172.6808	172.6808	6.5500e-003		172.8445

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.6379	37.3633	25.7595	0.0412		1.1759	1.1759		1.1586	1.1586	0.0000	3,986.6886	3,986.6886	1.2894		4,018.9230
Total	1.6379	37.3633	25.7595	0.0412	2.5554	1.1759	3.7313	1.3133	1.1586	2.4719	0.0000	3,986.6886	3,986.6886	1.2894		4,018.9230

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

3.3 Grading - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.7300e-003	0.2347	0.0546	5.4000e-004	0.0136	1.1000e-003	0.0147	3.9000e-003	1.0500e-003	4.9500e-003		57.3745	57.3745	3.5400e-003		57.4630
Worker	0.0572	0.0420	0.4040	1.1600e-003	0.1232	8.2000e-004	0.1240	0.0327	7.6000e-004	0.0334		115.3063	115.3063	3.0100e-003		115.3815
Total	0.0650	0.2767	0.4587	1.7000e-003	0.1368	1.9200e-003	0.1387	0.0366	1.8100e-003	0.0384		172.6808	172.6808	6.5500e-003		172.8445

3.4 Building Construction - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

3.4 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1856	5.6328	1.3115	0.0131	0.3252	0.0264	0.3516	0.0936	0.0253	0.1189		1,376.988 8	1,376.988 8	0.0849		1,379.111 3
Worker	0.1374	0.1008	0.9697	2.7800e-003	0.2957	1.9700e-003	0.2977	0.0784	1.8200e-003	0.0803		276.7351	276.7351	7.2200e-003		276.9156
Total	0.3230	5.7336	2.2812	0.0158	0.6210	0.0284	0.6494	0.1721	0.0271	0.1992		1,653.723 9	1,653.723 9	0.0921		1,656.026 9

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5502	21.4741	17.8156	0.0269		0.9176	0.9176		0.9084	0.9084	0.0000	2,553.063 1	2,553.063 1	0.6229		2,568.634 5
Total	1.5502	21.4741	17.8156	0.0269		0.9176	0.9176		0.9084	0.9084	0.0000	2,553.063 1	2,553.063 1	0.6229		2,568.634 5

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

3.4 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1856	5.6328	1.3115	0.0131	0.3252	0.0264	0.3516	0.0936	0.0253	0.1189		1,376.9888	1,376.9888	0.0849		1,379.1113
Worker	0.1374	0.1008	0.9697	2.7800e-003	0.2957	1.9700e-003	0.2977	0.0784	1.8200e-003	0.0803		276.7351	276.7351	7.2200e-003		276.9156
Total	0.3230	5.7336	2.2812	0.0158	0.6210	0.0284	0.6494	0.1721	0.0271	0.1992		1,653.7239	1,653.7239	0.0921		1,656.0269

3.4 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

3.4 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1536	5.1215	1.1760	0.0129	0.3252	0.0109	0.3361	0.0937	0.0104	0.1041		1,363.740 5	1,363.740 5	0.0804		1,365.749 4
Worker	0.1269	0.0899	0.8823	2.6800e-003	0.2957	1.9100e-003	0.2976	0.0784	1.7600e-003	0.0802		267.1351	267.1351	6.4400e-003		267.2962
Total	0.2805	5.2114	2.0584	0.0156	0.6210	0.0128	0.6338	0.1721	0.0122	0.1843		1,630.875 5	1,630.875 5	0.0868		1,633.045 6

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4515	20.9571	17.7316	0.0269		0.8608	0.8608		0.8528	0.8528	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	1.4515	20.9571	17.7316	0.0269		0.8608	0.8608		0.8528	0.8528	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

3.4 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1536	5.1215	1.1760	0.0129	0.3252	0.0109	0.3361	0.0937	0.0104	0.1041		1,363.740 5	1,363.740 5	0.0804		1,365.749 4
Worker	0.1269	0.0899	0.8823	2.6800e-003	0.2957	1.9100e-003	0.2976	0.0784	1.7600e-003	0.0802		267.1351	267.1351	6.4400e-003		267.2962
Total	0.2805	5.2114	2.0584	0.0156	0.6210	0.0128	0.6338	0.1721	0.0122	0.1843		1,630.875 5	1,630.875 5	0.0868		1,633.045 6

3.5 Paving - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.210 9	2,207.210 9	0.7139		2,225.057 3
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.210 9	2,207.210 9	0.7139		2,225.057 3

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

3.5 Paving - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.4000e-003	0.2134	0.0490	5.4000e-004	0.0136	4.5000e-004	0.0140	3.9000e-003	4.3000e-004	4.3400e-003		56.8225	56.8225	3.3500e-003		56.9062
Worker	0.0529	0.0375	0.3676	1.1200e-003	0.1232	8.0000e-004	0.1240	0.0327	7.3000e-004	0.0334		111.3063	111.3063	2.6900e-003		111.3734
Total	0.0593	0.2509	0.4166	1.6600e-003	0.1368	1.2500e-003	0.1380	0.0366	1.1600e-003	0.0378		168.1288	168.1288	6.0400e-003		168.2796

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9311	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9311	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

3.5 Paving - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.4000e-003	0.2134	0.0490	5.4000e-004	0.0136	4.5000e-004	0.0140	3.9000e-003	4.3000e-004	4.3400e-003		56.8225	56.8225	3.3500e-003		56.9062
Worker	0.0529	0.0375	0.3676	1.1200e-003	0.1232	8.0000e-004	0.1240	0.0327	7.3000e-004	0.0334		111.3063	111.3063	2.6900e-003		111.3734
Total	0.0593	0.2509	0.4166	1.6600e-003	0.1368	1.2500e-003	0.1380	0.0366	1.1600e-003	0.0378		168.1288	168.1288	6.0400e-003		168.2796

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739

5.0 Energy Detail

Historical Energy Use: N

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691
Unmitigated	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0337					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.8300e-003	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691
Total	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0337					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.8300e-003	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691
Total	0.1414	2.8000e-004	0.0303	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004		0.0648	0.0648	1.7000e-004		0.0691

7.0 Water Detail

Pit T1 and T2 Solar Implementation Project - Alameda County, Winter

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

APPENDIX B

SPECIAL STATUS SPECIES TABLES

This page intentionally left blank

Table B-1: Special-Status Plant Species and Sensitive Natural Communities Evaluated

Species	Status (Federal/State/RPR ¹)	Habitat/Blooming Period	Potential to Occur
<i>Astragalus tener</i> var. <i>tener</i> Alkali milk vetch	--/--/1B.2	Mesic alkaline and adobe clay soils in valley and foothill grassland, adjacent to vernal pools Elevation: 1-60 meters Blooms: March-June	No potential to occur because the conditions of the site are unlike those required for this species. There is one possibly extirpated CNDDDB occurrence within 5 miles of the site where the species was seen in 1895.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	--/--/1B.1	Grazed and ungrazed annual grassland. Alkaline or saline soils sometimes described as heavy white clay (saline clay soil) Elevation: 1-230 meters Blooms: May-October	No potential to occur on the site due to lack of suitable habitat (annual grassland with alkaline or saline soils).
<i>Chloropyron maritimum</i> ssp. <i>palustre</i> Point Reyes salty bird's-beak	--/--/1B.2	Coastal salt marshes and swamps Elevation: 0-10 meters Blooms: June-October	No potential to occur on the site due to lack of salt marsh.
<i>Eryngium aristulatum</i> var. <i>hooveri</i> Hoover's button-celery	--/--/1B.1	Vernal pools Elevation: 3-45 meters Blooms: June-August	No potential to occur on the site due to lack of vernal pools.
<i>Extriplex joaquinana</i> San Joaquin spearscale	--/--/1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland (alkaline soils) Elevation: 1-835 meters Blooms: April-October	No potential to occur on the site due to lack of undisturbed alkaline soils and wet areas.
<i>Helianthella castanea</i> Diablo helianthella	--/--/1B.2	Rocky soils in chaparral/oak woodland interface. Elevation: 60-1300 meters Blooms: March-June.	No potential to occur on the site due to lack of suitable undisturbed chaparral/woodland habitat.
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE/--/1B.1	Vernal pools in cismontane woodland, alkaline playas, and valley and foothill grassland Elevation: 0-470 meters Blooms: March-June	No potential to occur on the site due to lack of vernal pools.

Table B-1: Special-Status Plant Species and Sensitive Natural Communities Evaluated

Species	Status (Federal/State/RPR ¹)	Habitat/Blooming Period	Potential to Occur
<i>Navarretia prostrata</i> Prostrate vernal pool navarretia	--/--/1B.2	Vernal pools and seeps in coastal scrub, meadows, alkaline valley, and foothill grassland Elevation: 3-1,201 meters Blooms: April-July	No potential to occur on the site due to lack of vernal pools or seeps.
<i>Plagiobothrys glaber</i> Hairless popcornflower	--/--/1A	Meadows and seeps (alkaline), coastal salt marshes and swamps Elevation: 15-180 meters Blooms: March-May	No potential to occur due to lack of suitable habitat. There is one possibly extirpated CNDDDB occurrence within 5 miles of the site where the species was seen in 1896, approximately 2.8 miles from the site.
<i>Puccinellia simplex</i> California alkali grass	--/--/1B.2	Alkaline, vernal mesic; sinks, flats, and lake margins, chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools Elevation: 2-930 meters Blooms: March-May	No potential to occur on the site due to lack of alkaline soils and vernal pools.
<i>Suaeda californica</i> California seablite	FE/--/1B.1	Coastal salt marshes and swamps Elevation: 0-15 meters Blooms: July-October	No potential to occur on the site due to lack of salt marsh habitat.
<i>Senecio aphanactis</i> Chaparral ragwort	--/--/1B.2	Foothill Woodland, Northern Coastal Scrub, Coastal Sage Scrub Elevation: 15-800 meters Blooms: January-April	No potential to occur on the site due to lack of suitable habitat.
<i>Spergularia macrotheca</i> var. <i>longistyla</i> Long-styled sand-spurrey	--/--/1B.2	Alkaline, meadows and seeps, marshes and swamps Elevation: 0 - 255 meters Blooms: February-June	No potential to occur on the site due to lack of suitable habitat in the form of meadows, seeps, marshes, or swamps.
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i> Most beautiful jewelflower	--/--/1B.2	Chaparral, valley grassland, foothill woodland, often on serpentine soils Elevation: 95-1,000 meters Blooms: April-September	No potential to occur on the site due to lack of suitable habitat such as serpentine soils. This species is rare due to the impacts of development, non-native plants, and grazing. If the species ever occurred near the site, it was likely extirpated when the area was developed. It would not be able to compete with the nonnative plant species that dominate the site.

Table B-1: Special-Status Plant Species and Sensitive Natural Communities Evaluated

Species	Status (Federal/State/RPR ¹)	Habitat/Blooming Period	Potential to Occur
<i>Stuckenia filiformis</i> ssp. <i>alpina</i> Slender-leaved pondweed	--/--/2B.2	Marshes and swamps; shallow, clear water of lakes and drainage channels Elevation: 300-2,150 meters Blooms: N/A	No potential to occur because the site is outside the known elevation range of the species. Furthermore, the large populations of grass carp within the pond pits would likely extirpate pondweeds from the ponds. There is one presumed extant CNDDDB occurrence within 5 miles of the project. This occurrence is based on an observation made in 1997. The exact location unknown, so it was mapped by CNDDDB as “best guess around the Quarry Lakes area of Alameda Creek Regional Trail.”
<i>Trifolium hydrophilum</i> Saline clover	--/--/1B.2	Vernal pools, marshes and swamps in mesic alkaline valley and foothill grassland Elevation: 0-300 meters Blooms: April-June	No potential to occur on the site due to lack of suitable habitat in the form of vernal pools, marshes, or swamps.

Source: LSA (2020).

¹ Status: Rare Plant Rank (RPR):

1B = California Rare Plant Rank 1B: Plant species rare, threatened, or endangered in California and elsewhere.

2B = California Rare Plant Rank 2B: Plant species rare, threatened or endangered in California, but more common elsewhere.

3 = California Rare Plant Rank 3: Plant species on a review list for plants which need more analysis to rank higher or to remove ranking.

4 = California Rare Plant Rank 4 – Plant species on a watch list, plants of limited distribution.

Table B-2: Special-Status Animal Species Potential to Occur

Species	Status ¹ (Federal/State/CDFW)	Habitat Requirements	Potential to Occur
Amphibians			
<i>Ambystoma californiense</i> California tiger salamander	FT/CT/--	Spends most of its life in underground burrows. Breeds in fish-free vernal pools and ponds, including cattle stock ponds. Breeds after the first rains in late fall and early winter, when the wet season allows the salamander to migrate to ponds, a journey that may be over 1 mile and take several days. Lays eggs in small clusters or singly, which hatch after 14 to 21 days. The pools must hold water for a minimum of 12 weeks for the larvae to successfully metamorphose into their terrestrial form.	No potential to occur. There are eight CNDDB occurrences within 5 miles of the project site that are all separated from the project area by roads and other developments. The ponds are not suitable for breeding because they are permanent and support large populations of non-native predatory fish.
<i>Rana draytonii</i> California red-legged frog	FT/--/CSC	Inhabits permanent and temporary pools, streams, freshwater seeps, and marshes in lowlands and foothills. Uses adjacent upland habitat for foraging and refuge. Breeds during the wet season from December through March in slow parts of streams, lakes, reservoirs, ponds, and other waters with emergent vegetation. Requires water for 4 to 7 months for tadpoles to complete metamorphosis.	No potential to occur. The ponds are not suitable for breeding because they support large populations of non-native predatory fish. No frogs were seen during the survey, and none have been detected by LSA biologists working nearby in 2018 and 2019. There are seven CNDDB occurrences within 5 miles of the project site that are all separated from the project area by roads and other developments.
<i>Rana boylei</i> Foothill yellow-legged frog	--/CE/CSC	Rarely leaves riparian corridors. Breed and deposit eggs shortly after streams reach peak flow in the spring after the winter rains end. Egg masses are typically attached to the downstream side or boulders or cobble, in a sunny, shallow section of low-gradient stream. Breeding rarely occurs in well-shaded (>90 percent closed canopy) sites.	No potential to occur. There is one possibly extirpated CNDDB occurrence within 5 miles of the project site. The ponds are not suitable for the species, which is found in creeks and streams.
Reptiles			
<i>Actinemys (=Emys) marmorata</i> Western pond turtle	--/--/CSC	Permanent or nearly permanent water (fresh to brackish) in a wide variety of habitat types. Requires basking sites such as steep banks, logs, or rocks. Upland areas with friable soils are required for egg laying.	High potential to occur. There are eight CNDDB occurrences within 5 miles of the project site, based on observation made in Alameda Creek and at Quarry Lakes Regional Park. Several turtles were seen during the surveys.

Table B-2: Special-Status Animal Species Potential to Occur

Species	Status ¹ (Federal/State/CDFW)	Habitat Requirements	Potential to Occur
<i>Coluber lateralis euryxanthus</i> Alameda striped racer	FT/CT/--	Lives primarily in scrub and chaparral communities, and has also been observed in nearby grasslands and woodlands. Feeds primarily on lizards. Most active in the spring and fall. Retreats from hot temperatures in the summer and cold temperatures in the winter into burrows or other underground refuges.	No potential to occur. There are five CNDDDB occurrences within 5 miles of the project site, but there are major barriers between known populations and the project site. The site lacks large expanses of suitable habitat and an adequate prey base.
Birds			
<i>Athene cunicularia</i> Burrowing owl	--/--/CSC	Nearly or quite level grassland, prairie, and desert floor with short or sparse vegetation. Subterranean nester that generally uses existing mammal burrows (especially of ground squirrels), but will also excavate its own burrows.	No potential to occur. There are 12 CNDDDB occurrences within 5 miles of the project site. The project site lacks large relatively flat open areas with burrows that the owls would use.
<i>Rallus obsoletus obsoletus</i> California Ridgway's rail	FE/CE/FP	Lives in tidal salt marshes with sloughs and substantial cordgrass (<i>Spartina</i> sp.) cover.	No potential to occur due to lack of tidal salt marsh on the project site.
<i>Coturnicops noveboracensis</i> Yellow rail	--/--/CSC	Shallow marshes; also found in meadows and hay and rice fields in the winter.	No potential to occur. The CNDDDB contains one occurrence of the species within 5 miles of the project. The record is based on a single individual that was collected in 1883. This species is not known to breed in California and is rarely seen in the State.
<i>Geothlypis trichas sinuosa</i> Saltmarsh common yellowthroat	--/--/CSC	Found in salt, brackish, and freshwater marshes; and riparian woodlands. Nests on or near ground in low vegetation.	No potential to occur due to lack of saltmarsh on the project site.
<i>Riparia riparia</i> Bank swallow	-/CT/-	Found along waterbodies. Nests in large colonies on vertical cliffs and stream banks. Catches insects in flight, often over water.	Low potential to occur. The CNDDDB has one record within 5 miles of the pipeline alignment. The observation was made in 1983 in Coyote Hills Regional Park, approximately 3.3 miles from site. The cliffs on the southern edge of Pit T2 possibly provide suitable nesting habitat.

Table B-2: Special-Status Animal Species Potential to Occur

Species	Status ¹ (Federal/State/CDFW)	Habitat Requirements	Potential to Occur
<i>Melospiza melodia pusillula</i> Alameda song sparrow	--/--/CSC	Found in tidal salt marshes on the fringes of south and central San Francisco Bay. Nests primarily in pickleweed and marsh gumplant.	No potential to occur due to lack of tidal salt marsh. There are two presumed CNDDDB extant occurrences within 5 miles of the project site.
<i>Agelaius tricolor</i> Tricolored blackbird	--/CT/CSC	Breeds in large colonies near freshwater, preferably emergent wetland such as cattails and tules, but also in thickets of willow and other shrubs. Requires nearby foraging areas with large numbers of insects.	No potential to occur, due to lack of large amounts of emergent vegetation and nearby foraging areas. There are three CNDDDB occurrences within 5 miles of the project site, but two occurrences are possibly extirpated. The third site had no observations in 2014, and has not been known to support tricolored blackbirds since 1974. The project site does not support large marshes with emergent vegetation.
Northern harrier <i>Circus cyaneus</i>	--/--/CSC	Nests primarily in large expanses of grasslands including fallow agricultural fields, marshes, and meadows.	No potential to occur. The CNDDDB has one occurrence within 5 miles of the project. The observation was made in 1971 of a nest in a field in Coyote Hills Regional Park, approximately 3.3 miles from site. The project site lacks the large open fields this species would nest in.
<i>Sterna antillarum browni</i> California least tern	FE/SE/CFP	Nests on the ground on sandy beaches, alkali flats, and hard-pan surfaces (salt ponds).	No potential to occur. There are no CNDDDB occurrences within 5 miles of the project site. No habitat within the project area.
<i>Charadrius alexandrinus nivosus</i> Western snowy plover	FE/--/CSC	Nests on sandy beaches and salt pond levees.	No potential to occur. There are two CNDDDB occurrences within 5 miles of the project site, but there is no suitable nesting or foraging habitat on or near the site.
Mammals			
<i>Reithrodontomys raviventris</i> Salt marsh harvest mouse	FE/SE/CFP	Found in tidal salt marshes of San Francisco Bay and its tributaries. Requires tall, dense pickleweed (<i>Salicornia</i> spp.) for cover.	No potential to occur due to lack of tidal salt marsh on or near the project site. The CNDDDB has eight presumed extant occurrences within 5 miles of the project. All these occurrences are based on observations made in salt marsh.
Salt-marsh wandering shrew <i>Sorex vagrans halicoetes</i>	--/--/CSC	Tidal salt marshes with abundant driftwood and other debris for shelter and foraging.	No potential to occur due to lack of tidal salt marsh. The CNDDDB has two presumed extant occurrences within 5 miles of the project. Both occurrences are based on observations made in salt marsh.

Table B-2: Special-Status Animal Species Potential to Occur

Species	Status ¹ (Federal/State/CDFW)	Habitat Requirements	Potential to Occur
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	--/--/CSC	Feeds primarily upon moths. This species distribution is limited by suitable roosting sites, which include caves, mines, tunnels, buildings, and other manmade structures.	No potential to occur. There is one presumed CNDDDB extant occurrence within 5 miles of the project site based on an observation made in 1943. No suitable roosting sites present near the site.
<i>Antrozous pallidus</i> Pallid bat	--/--/CSC	Roosts in caves, tunnels, and occasionally buildings and hollow trees. Forages over a variety of habitats, catching arthropods from the ground. Most common in open, dry habitats with rocky areas for roosting.	No potential to occur. The CNDDDB has one presumed extant occurrence mapped to within 5 miles of the project. No evidence of bats (e.g., guano, staining) was detected on bridges in the project site. Might roost on bridges near the project site, but would not forage over the open water on the site.
Invertebrates			
<i>Callophrys mossii bayensis</i> San Bruno elfin butterfly	FE/--/--	Known to occur only on slopes of the coastal mountains in San Mateo County. Lays eggs on the larval host plant stonecrop (<i>Sedum spathulifolium</i>).	No potential to occur. There are no CNDDDB occurrences within 5 miles of the project site, which is located outside the known range of the species and does not contain the host plant.
<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	FT/--/--	Females lay eggs at the base of dwarf plantain (<i>Plantago erecta</i>). After the eggs hatch, the larvae feed on the host plant or may feed on purple owl's clover (<i>Castilleja densiflora</i> or <i>C. exserta</i>). After metamorphosis, the adult butterflies feed on the nectar of a variety of plants that grow in shallow, serpentine-derived soils.	No potential to occur. There are no CNDDDB occurrences within 5 miles of the project site. No dwarf plantain or purple owl's clover occur on the project site. There are no serpentine-derived soils on the project site.
<i>Branchinecta conservancy</i> Conservancy fairy shrimp	FE/--/--	Found only in vernal pools in California's Central Valley and one population in Ventura County.	No potential to occur. There are no CNDDDB occurrences within 5 miles of the project site, which is outside the known range of the species. No vernal pools are present in the project site.
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT/--/--	Inhabits vernal pools and swales during all stages of its life cycle.	No potential to occur. There are no CNDDDB occurrences within 5 miles of the project site. No vernal pools are present in the project site.

Table B-2: Special-Status Animal Species Potential to Occur

Species	Status ¹ (Federal/State/CDFW)	Habitat Requirements	Potential to Occur
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	FT/--	Inhabits a wide variety of seasonal aquatic habitats, including vernal pools, seasonal wetlands, ephemeral stock tanks, and manmade ditches. Reproduces by producing cysts which persist in the dried soil of the water feature until it refills during the rainy season.	No potential to occur. There are two CNDDDB occurrences within 5 miles of the site, but there are no vernal pools or other seasonal wetlands on the project site.
<i>Bombus occidentalis</i> Western bumblebee	--/Candidate Endangered ² --	Feeds upon nectar and pollen from a variety of plants species, but is most adapted to native plant species. Nests in abandoned rodent burrows and bird nests. The flight period in California is from early February to late November, peaking in late June and late September. The flight period for workers and males is from early April to early November. Little is known about sites where queens overwinter. The species is currently restricted to high elevation sites in the Sierra Nevada and scattered coastal areas.	No potential to occur. There are three presumed CNDDDB extant occurrences within 5 miles of the project site, but the most recent observation is from 1971. The land surrounding the pits has few native nectar and pollen plants upon which the species relies. No bumble bees of any species were seen during the site visit.
Fish			
<i>Hypomesus transpacificus</i> Delta smelt	FT/CE--	Only found in estuarine waters from the Sacramento-San Joaquin confluence to San Pablo Bay. Usually found in water with an average salinity concentration of 2 parts per thousand for much of its life cycle, but can tolerate a wide range of salinities and moves into river channels and tidally influenced backwater sloughs.	No potential to occur. There are no CNDDDB occurrences within 5 miles of the project site, and no estuarine waters on or near the site. The site is far outside the known range of the species.
<i>Oncorhynchus mykiss irideus</i> Steelhead - northern California Distinct Population Segment	FT/--	Requires cool, swift moving perennial streams with clean, unsilted gravel beds for spawning and egg deposition.	No potential to occur. There is one CNDDDB occurrence within 5 miles of the site, but it is associated with Alameda Creek. The pit ponds are not hydrologically connected to Alameda Creek.

Table B-2: Special-Status Animal Species Potential to Occur

Species	Status ¹ (Federal/State/CDFW)	Habitat Requirements	Potential to Occur
---------	---	----------------------	--------------------

Source: LSA (2020).

¹ Status:

FT = Federally listed as threatened; FE = Federally listed as endangered

CT = California State listed as threatened; CSC = California species of special concern; CFP = California Fully Protected

² On June 12, 2019, the California Fish and Game Commission (Commission) voted to accept a petition from the Xerces Society (2018) to consider listing four subspecies of bumble bee, including the Western bumble bee (*Bombus occidentalis*), under CESA. As a result of this decision, the Western bumble bee is a state candidate endangered species; as such, it is temporarily afforded the same protection as state-listed threatened or endangered species.