Pittsburg Solar
Recreational Vehicle/Boat Storage

Initial Study – Mitigated Negative Declaration

prepared by

City of Pittsburg
65 Civic Avenue
Pittsburg, California 94565
Contact: Christie Robinson, Acting Planning Manager

prepared with the assistance of

Rincon Consultants, Inc.
449 15th Street, Suite 303
Oakland, California 94612

March 2022

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
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Initial Study

The City of Pittsburg, as the Lead Agency, prepared this Initial Study for the Pittsburg Solar Recreational Vehicle (RV)/Boat Storage Project ("project") in compliance with the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations [CCR] Section 15000 et. Seq.), and the regulations and policies of the City of Pittsburg, California.

1. Project Title

Pittsburg Solar Recreational Vehicle/Boat Storage Project

2. Contact Person and Phone Number

Christie Robinson, Acting Planning Manager
actingplanningmanager@pittsburgca.gov
(925)252-4920

3. Project Location

The project site is located at the southwest junction of the Pittsburg-Antioch Highway and Arcy Lane in the City of Pittsburg, Contra Costa County. Regional access to the site would be available using State Route (SR) 4. Directly north of the site is the Pittsburg-Antioch Highway, on the other side of which are several industrial uses, including sanitation and energy generation. Beyond that is the New York Slough, part of the Sacramento-San Joaquin River Delta, to the north. To the south is a Union Pacific railway line and further south are commercial uses up to SR 4, beyond which are single family homes. Immediately to the west of the project site is a commercial landscape center, with other commercial uses further west. To the east are commercial uses up to Auto Center Drive, beyond which are single family homes. Figure 1 shows the regional location of the project site, Figure 2 provides an aerial image of the project site in its neighborhood context.

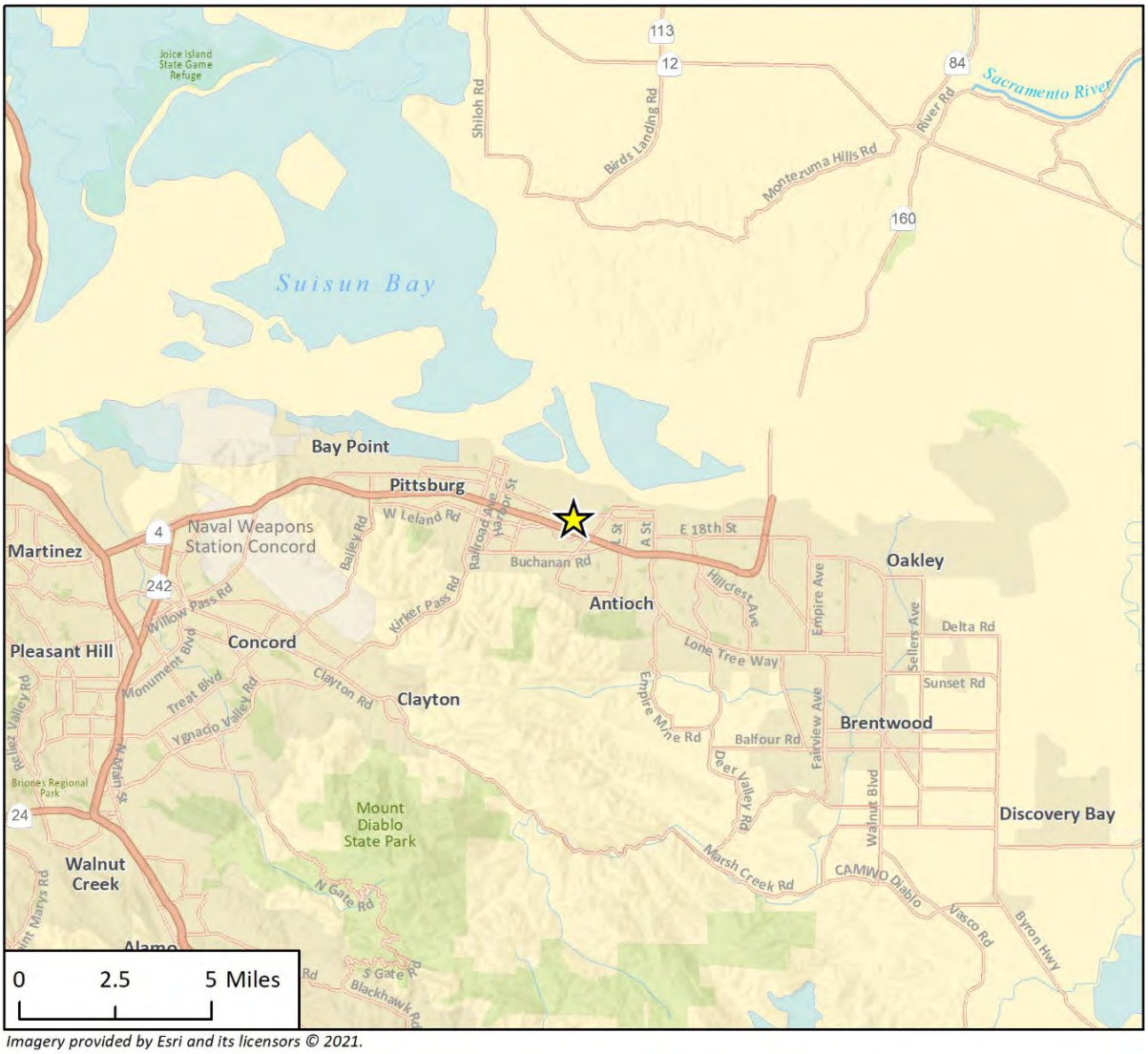
4. Project Sponsor's Name and Address

Chris Koenig
23 Railroad Avenue, Suite 164
Danville, California 94526

5. General Plan Designation and Zoning District

The site is designated Service Commercial (CS) by the City of Pittsburg 2020 General Plan and is zoned as a CS district. CS designations are often populated by automobile repair, contractor's services, and other heavy maintenance activities. Permitted land uses in CS zones include residential, commercial, industrial, and governmental, pending additional use regulations or temporary activity permits for various subtypes of land uses.

Figure 1 Regional Location



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Project Location

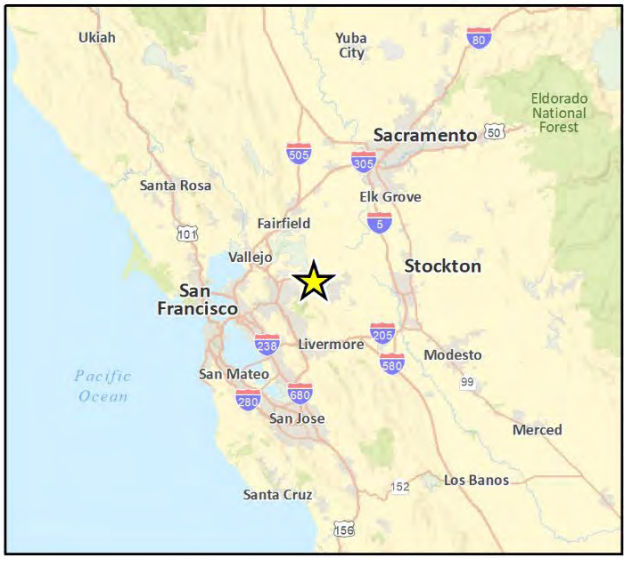


Figure 2 Project Location

Imagery provided by Microsoft Bing and its licensors © 2021.

6. Lead Agency Name and Address

City of Pittsburg
65 Civic Avenue
Pittsburg, California 94565

7. Project Description

The proposed project would involve the construction of a boat and recreational vehicle (RV) storage facility (facility) capped with a solar roof/shade structure on the 12.5-acre lot. The facility would be situated on approximately 10 acres of the site, while the balance of 2.5 acres, a wetland and hillside, would remain undeveloped. Of the developed lot acreage, approximately 0.5 acres would be used for landscaping along the project's frontage and approximately 0.4 acre would be used for two bio-retention areas along site's northern and eastern edges.

The bioretention treatment areas would be constructed to prevent stormwater runoff into the Contra Costa Canal Spillway to the east and existing gutters on the Pittsburg Antioch Highway as an Integrated Management Practice. One bioretention area would encompass 13,150 square feet along the eastern boundary of the project site, and the other would be 3,860 square feet in the northwestern corner of the project site. The water that passes through the eastern bioretention area would be treated and effectively irrigate the wetlands around the Contra Costa Canal Spillway. Construction of the bioretention areas would follow guidelines provided by the Contra Costa Clean Water Program's Stormwater C.3 Guidebook. The bioretention areas would collect any trash that may runoff from the storage facility and maintenance would be required to remove and dispose of that trash periodically.

The project would include approximately 191,920 square feet of solar-covered canopies on nine acres and would provide 220 storage parking stalls under the canopies, with the capacity to accommodate up to 302 parking stalls depending on the size of boats or RVs. Five of the solar covered canopies would be located through the center of the project site and two would be located on the perimeter of the development area of the site. Parking for RVs and boats on the project site would be entirely covered by the solar covered canopies. All RV and boat parking on the site would be striped at a 60-degree angle and sizing would vary. The project would also include a 1,243 square-foot management office building, with one parking spot within an attached indoor garage located in the northeastern portion of the project site. In addition, in the northeastern corner of the project site, there would be five standard parking spaces, including one electric vehicle (EV) parking station, and one van accessible parking space provided for customers. As part of project operation, the project would also include amenities such as an outdoor ice machine, an aboveground propane station, and a RV wastewater dump station in the northeastern corner of the project site. The project would be screened by landscaping, including trellis and vine features, and a 10-foot tall stone-accented wrought-iron fence. Lighting would be installed on the interior and exterior of the perimeter fence and office building.

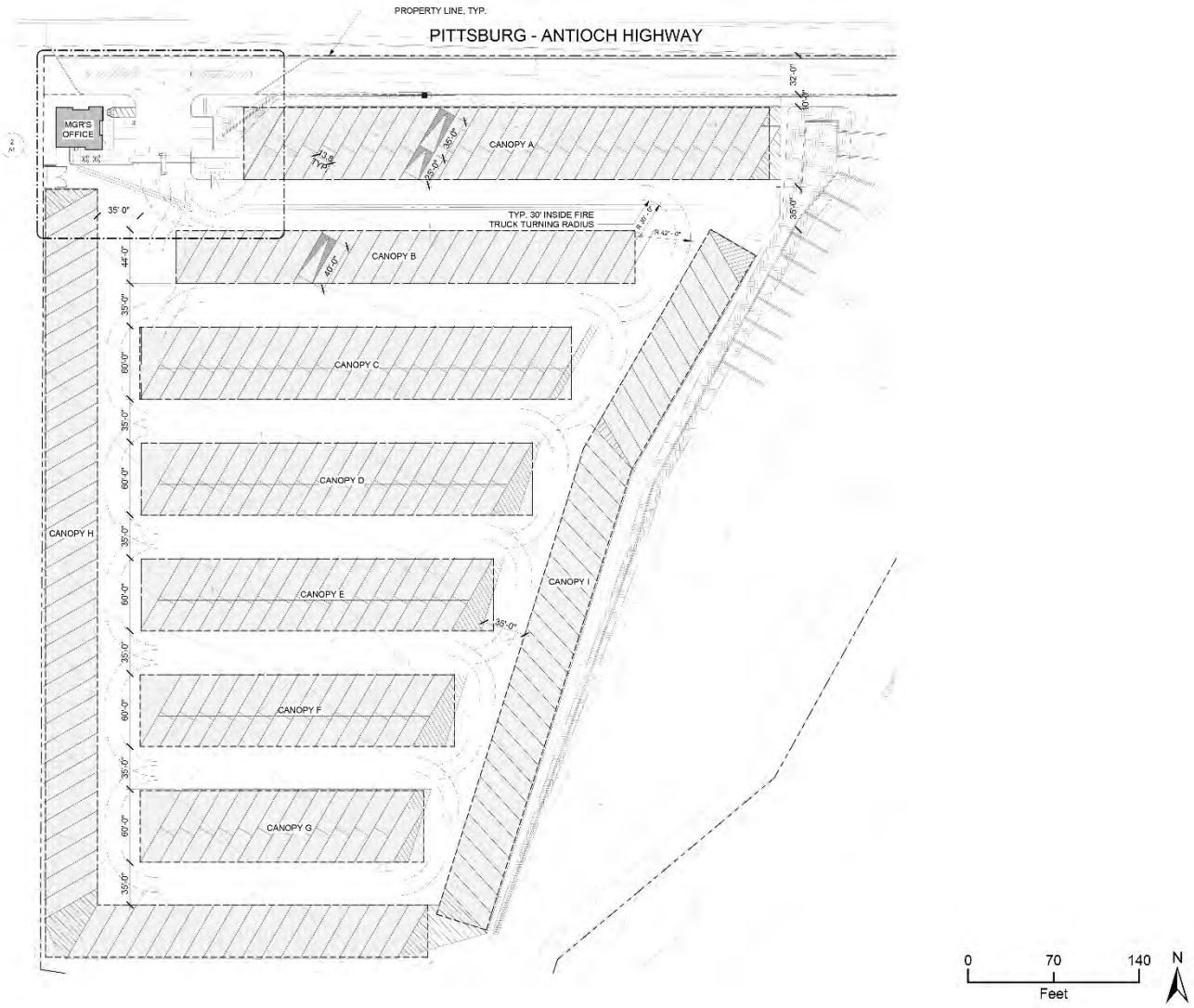
Table 1 summarizes information about the project and Figure 3 shows the proposed site plan, and Figure 4 shows plans for the main office from an eastward perspective.

Table 1 Project Summary

Building Area	Number of Square Feet
Solar Canopy	191,920
Managers Office	1,243
Total	**193,163**
	Number of RV/Boat Stalls
Canopy A	
44 feet x 13.8 feet	1
60 feet x 13.8 feet	25
Canopy B	
44 feet x 13.8 feet	23
Canopy C	
60 feet x 13.8 feet	21
Canopy D	
60 feet x 13.8 feet	18
Canopy E	
60 feet x 13.8 feet	16
Canopy F	
60 feet x 13.8 feet	14
Canopy G	
44 feet x 13.8 feet	1
60 feet x 13.8 feet	12
Canopy H	
44 feet x 13.8 feet	53
Canopy I	
44 feet x 13.8 feet	36
Total	**220**
Parking	**Number of Stalls**
Standard	5
Van Accessible	1

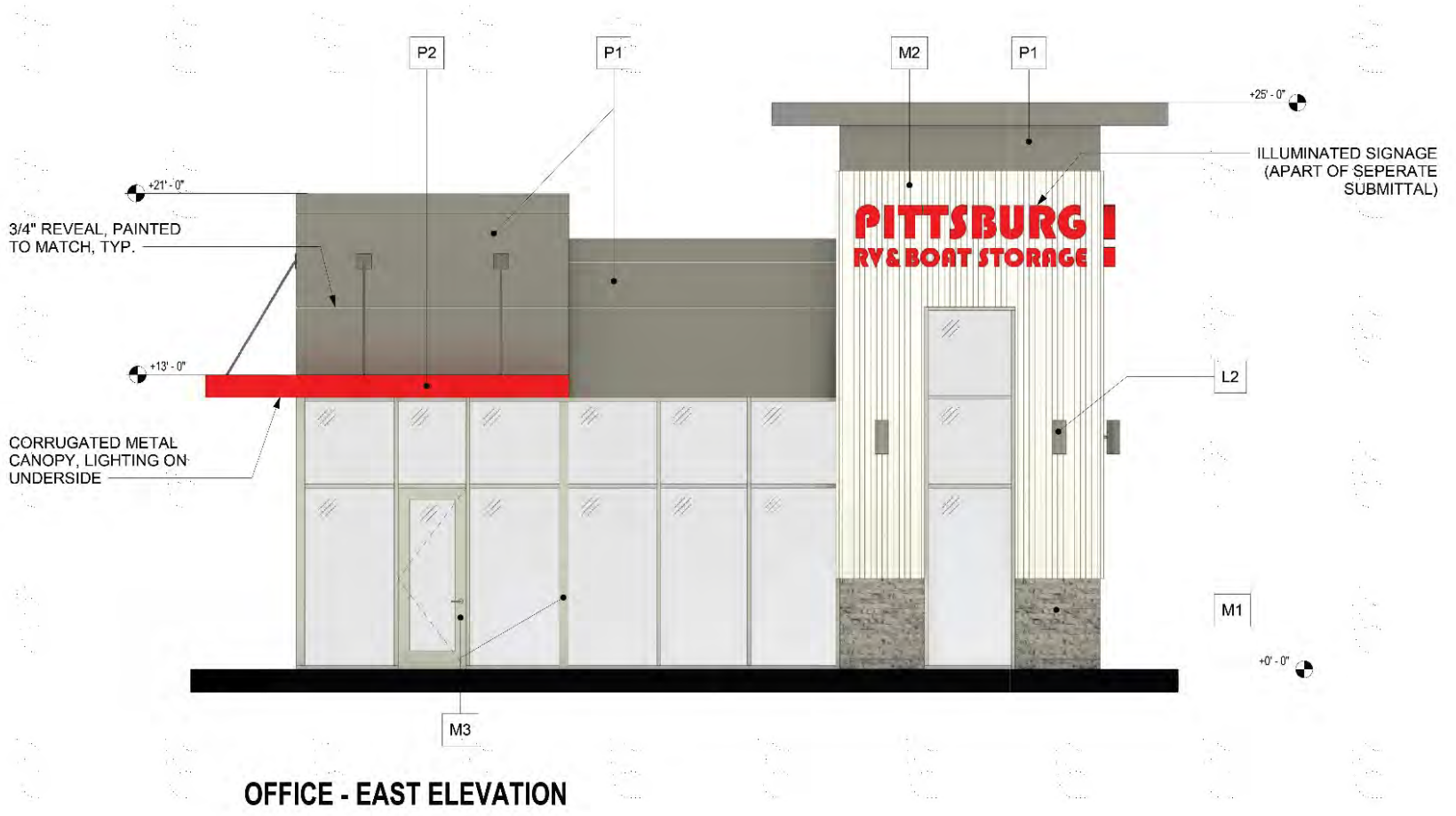
Source: Appendix PLN

Figure 3 Site Plans



Source: FCGA Architecture, 2021.

Figure 4 Main Office



Source: FCGA Architecture, 2021.

Access and Circulation

Access to the facility would be from a driveway located on the southern portion of Pittsburg/Antioch Highway. A sliding gate with a passcode-enabled gate entry keypad would be constructed to provide secure access to the facility. An internal road would provide vehicular access to parking stalls. The interior vehicular circulation would be built to accommodate large RVs and trucks, with minimum 35-foot drive aisles to allow for safe turning. Fire apparatus access would be maintained per Contra Costa Fire Protection District requirements throughout the project site.

Hours of Operation

The proposed project's office hours would be Monday through Friday from 7:00 am to 7:00 pm and would be staffed by one employee during office hours. The site would be accessible to customers 24 hours per day, seven days per week via a gate keypad for any entrance or exit.

Green Building Features

The proposed project would include energy efficient lighting, reclaimed water for outdoor use, water-efficient fixtures, water-efficient irrigation, one electric vehicle charging stall, and would be entirely powered by the solar panels on site. The office use would require an estimated 20 kilowatts of energy for the office use and the car canopies would generate approximately 3 megawatts of energy. Solar on the project site would be expected to generate power for up to 600 homes in the area, annually.

Utilities

Power currently extends to the site, provided by Marin Clean Energy. The project site does not currently have sewer or water connections. The proposed project would provide septic tanks appropriate to accommodate wastewater from the RV wastewater dump station and wastewater generated at the site. A recycled water line is also proposed as part of the project. The proposed project would also include the construction of a well to provide potable water in the bathroom, office, and for the ice machine.

Construction

Construction activities would involve site preparation, grading, trenching for pipelines, facility construction, paving, and architectural coating. Impervious ground cover to be constructed would be approximately 9.2 acres of the project site. Construction equipment and construction personnel would be staged onsite. The project is anticipated to begin in March 2022 and would be completed by December 2022. Construction would occur between the hours of 6:00 a.m. and 8:00 p.m., Monday through Friday.

Table 2 below describes the estimated preparation and construction schedule.

Table 2 Preparation and Construction

Stage	Estimated Start Date	Estimated End Date	Estimated Number of Employees Onsite
Site Preparation	March 2022	March 2022	5
Grading	March 2022	April 2022	10
Building Construction	May 2022	December 2022	15
Paving	April 2022	May 2022	10
Architectural Coating	October 2022	November 2022	10

8. Surrounding Land Uses and Setting

The surrounding neighborhood includes adjacent industrial and commercial land uses and open space and nearby residential uses. The southern portion of the site is bordered by an abandoned railroad, beyond which are several car dealerships and SR 4. Further south of SR 4 are single family residences. To the east of the site is the Contra Costa Canal Spillway and various commercial businesses, including a storage facility and a Costco. To the north of the site is Pittsburg-Antioch Highway and further north is open space that is bordered by industrial use, including the Delta Diablo Sanitation District, Delta Household Hazardous Collection Facility, and Delta Energy Center. To the west of the site is a junkyard and landscape center. The New York Slough is approximately 1 mile north of the project site and the Antioch-Pittsburg Amtrak station is located approximately 1.6 miles northeast of the site. The site is currently undeveloped and covered with dense grasses and weeds. There are two trees along the edge of the seasonal wetland.

9. Other Public Agencies Whose Approval is Required

The City of Pittsburg is the only public agency with discretionary authority to approve this project. The following permit and approval is required from the City prior to project construction:

- Conditional Use Permit for RV/Boat storage use

10. Have California Native American Tribes Traditionally and Culturally Affiliated with the Project Area Requested Consultation Pursuant to Public Resources Code Section 21080.3.1?

The City has received two requests from California Native American tribes to be notified of proposed projects in the City, pursuant to Public Resources Code (PRC) Section 21080.3.1. An information request letter was delivered to the Native American Heritage Commission (NAHC) on September 10, 2021 and NAHC responded on October 14, 2021 indicating that a search of their Sacred Lands Files (SLF) returned negative results.

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Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

☐	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

Determination

Based on 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 to 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 "less than significant with mitigation incorporated" 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 potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Printed Name	Title

Environmental Checklist

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 that would adversely affect daytime or nighttime views in the area?	☐	☐	■	☐

Setting

The project site is an undeveloped parcel surrounded by industrial and commercial usage. The site's landscape is covered by ruderal vegetation and includes no trees. A junkyard borders the site directly to the west, commercial uses border the site to the east, an abandoned railroad borders the site to the south, and north across the Pittsburg-Antioch Highway are several industrial uses. Figure 5 and Figure 6 provide northern and southwestern viewpoints from the proposed project site. Views of the Delta shoreline from public spaces are limited and unavailable through or from the project site. The ridgelines in the southern portion of the City are also identified within the General Plan as identifiable visual resources, although they are not designated as scenic resources. The project site is approximately 14.7 miles northeast from a designated State Scenic Highway, SR 24 (California Department of Transportation [Caltrans] 2021).

Figure 5 Project Site Looking North

Figure 6 Project Site Looking Southwest

Regulatory Setting

A scenic corridor is the view from a road that may include a distant panorama and/or the immediate roadside area (City of Pittsburg 2019a). The City's adopted General Plan does not designate any scenic corridors (City of Pittsburg 2001). The City's General Plan also notes that the Delta shoreline is one of the City's most identifiable visual resources, although it is not designated as a scenic resource (City of Pittsburg 2019a). CS zoning applies to 87.7 acres within the City. General Plan Policy 4-P-5 calls to use landscaping, signs, lighting, and other visual features to announce the gateway along regional roadways.

Pittsburg Municipal Code (PMC) sets forth design guidelines for CS zoning in Chapter 18.52, including front setbacks of 10 feet, a maximum floor to area ratio (FAR) of 0.5, a maximum height of 50-feet, and a minimum of 7 percent of a site set aside for landscaping.

City of Pittsburg Design Guidelines – Commercial/Industrial

Section IV. includes development review design guidelines for commercial and industrial projects that are relevant to the proposed project (City of Pittsburg 1996).

a. Parking areas should be screened from view from any public right-of-way (beaming or hedge-type plant material). Parking areas should be broken up (landscape islands, projections, etc.) to eliminate vast areas of parking especially along street frontages.

c. Existing trees on site should be incorporated into the project side design, unless waived by the City Planner or Planning Commission.

f. Continuous horizontal roof lines should be broken up whenever possible. An expanse should not exceed 50 (fifty) feet in length unless architecture or size dictate a greater expanse.

g. Building entries should be designed as a focal point. They should be designed to set the theme or be the primary feature of the building or commercial center.

h. Building elevations (example: rear of shopping centers) visible from public rights-of-way should be addressed in design review and treated appropriately.

j. All roof mounted equipment should be screened completely from view from all public rights-of-way. A site-line study may be necessary to determine appropriate screening method.

k. All Structures, including, but not limited to, "tilt-up" type structures, should have structural reliefs and articulated entries (Encourage the creation of shadow lines).

m. Downspouts should be designed into the façade of the building unless architecturally treated.

n. Add murals, lattice or some other spaceframe type treatment to blank walls visible from public view.

o. Prototype or "theme" architecture is discouraged.

p. New or remodeled buildings should be designed to be compatible in design, color and materials with adjacent development.

q. The street-oriented elevations shall be designed so as not to present the appearance of a rear elevation (i.e., no loading doors or large blank walls, absence of architectural features found on other elevations, and limited landscaping as typically found on interior property lines).

r. Trash enclosures should include area for collection of recyclables.

Impact Analysis

a. Would the project have a substantial adverse effect on a scenic vista?

A scenic vista is usually defined as a panoramic view from an elevated position or a long-range view from a public vantage point. This can include views of natural features or of the built environment, when architecture and landscaped boulevards offer high-value views of an area considered important to the sense of place. The City of Pittsburg General Plan identifies the ridgelines and Delta shoreline in Pittsburg as identifiable visual resources within the City but are not designated scenic resources (City of Pittsburg 2010b). There are no scenic vistas within or near the project site, or that would be impacted by development of the project site. The project would have no impact.

NO IMPACT

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

The nearest State-designated scenic highway is SR 24 from the east portal of the Caldecott Tunnel to Interstate 680 near Walnut Creek (Caltrans 2021). The City of Pittsburg is not visible from this route. The nearest eligible scenic highway is SR 4 from SR 160 near Antioch to Route 84 near Brentwood (Caltrans 2021). The project site is not located within this portion of SR 4 and is not visible from it. As such, project implementation would have no effect on scenic resources in view of a state scenic highway. There would be no impact.

NO IMPACT

c. Would the project, 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?

The on-site office would be constructed with insulated metal panel siding, meant to imitate a stucco style, and include metal and stone accents on the rest of the building. The project would be screened from the roadway by landscaping including trellis and vine features. There would be a 10-foot tall, stone-accented wrought-iron fence around the entrance to the storage area. The existing on-site visual quality and surrounding scenic quality is generally poor because the site is vacant and untended. The contemporary and minimal design of the office and the storage area itself would not degrade the visual character.

The project would be located in an area designated and zoned as CS. Sites in CS areas generate high volumes of vehicle traffic and other potential adverse impacts. Allowable uses include storage and similar uses, which would include the proposed project. The project's design would follow development standards outlined in PMC Chapter 18.52 for CS districts, as shown in Table 3.

Table 3 Compliance with PMC Development Standards

Development Classification	City Standard	Project
Front Setback	10 foot minimum	10 feet
Floor Area Ratio	0.5 maximum	0.35[1]
Structure Height	50 foot maximum	25 feet
Lot Coverage	60 percent maximum	35 percent
Site Landscaping	7 percent minimum	7.3 percent[2]

[1] The lot is 544,848 square feet. The office building would be 1,243 square feet and the solar canopy would be 191,920 square feet.
[2] 39,900 square feet would be landscaped.

The project would comply with Pittsburg Design Guidelines for Commercial and Industrial projects. The project's parking area and solar canopy would be screened by fencing and landscaping surrounding the project site. There are no existing trees on the site to be incorporated into the project design. The office building would be in compliance with guidelines dictating design of structures.

Therefore, development of the project site under the CS zoning designation would not conflict with applicable zoning requirements and regulations governing scenic quality and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

The project site is in an urbanized area with relatively high levels of existing lighting. The adjacent uses generate light and glare along all sides of the property. Primary sources of light adjacent to the project site are lighting associated with the existing industrial and commercial buildings, including building-mounted and perimeter lighting, as well as interior lighting visible through windows; streetlights; and headlights from vehicles on nearby streets. The project site currently does not generate light, as it is undeveloped land. The primary source of glare adjacent to the project site is the sun's reflection from metallic and glass surfaces on buildings and on vehicles parked in adjacent parking areas.

The proposed project would incorporate exterior lighting around the entrance and sides of the building for the safety of customers accessing the storage facility, which would be accessible 24 hours a day, seven days a week. Interior lighting would be visible through the office building's windows. Cars accessing the storage facility would add a source of light to the area, however lighting from these cars would be brief as they access the site. These light sources would not have a significant impact on the night sky, as they would only incrementally add to the existing background light levels already present from the surrounding street lighting and urban development. Further, there are no sensitive receptors in the project vicinity. The nearest sensitive receptors are residences located approximately 0.3 mile south of the project site, across SR 4. Because of the existing, relatively high ambient lighting levels near the project site and lack of nearby residential development, project development would not substantially alter this condition. Impacts related to lighting would be less than significant.

The proposed project would include building materials, such as windows that may create some glare, but this glare would be minimal and would be screened by the fencing surrounding the

project site. The rooftop solar panels would produce glare, but there currently are no sightlines in the project vicinity above the proposed building or solar canopy, as all surrounding buildings are one-story. Because parking areas would be housed underneath solar panel canopies, there would be minimal glare from parked vehicles and boats. Further, there are no sensitive receivers in the project vicinity that would be adversely affected by glare. Overall, the proposed project would not create a substantial source of glare that would adversely affect day or nighttime views. Impacts related to glare would be less than significant.

LESS THAN SIGNIFICANT IMPACT

2 Agriculture and Forestry Resources

	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 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?	☐	☐	☐	■

Setting

The project site is in an urban area and is currently undeveloped. The City of Pittsburg does not have any land zoned for agricultural use (City of Pittsburg 2010a).

The California Department of Conservation (DOC) manages the Farmland Mapping and Monitoring Program to assess and record suitability of land for agricultural purposes. In each county, the land is analyzed for soil and irrigation quality and the highest quality land is designated as Prime Farmland. The project site and vicinity are designated as Urban and Built-Up Land and the site does not have any identified agricultural or forest land (DOC 2016a).

Regulatory Setting

PRC Section 12220(g) defines forest land as:

> "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."

PRC Section 4526 defines timberland as:

> "land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis."

Government Code Section 51104(g) defines a timberland production zone as:

> "an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h)."

Impact Analysis

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

The project site and surrounding area is located entirely in the Urban and Built Up Land area and is not zoned for agricultural use (DOC 2016a). Project implementation would only modify the project site; therefore, no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would be affected by project implementation and no impact would occur.

NO IMPACT

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))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

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?

The City of Pittsburg does not have any land zoned for forestry (City of Pittsburg 2010a). While some vegetation is present on the project site, the site itself is not considered forest or timberland. The project site does not provide forest and timber resources. As such, the project would not convert forest or timberland uses, and no impact would occur.

NO IMPACT

3 Air Quality

	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?	☐	☐	■	☐

Air Quality Standards and Attainment

The project site is located within the San Francisco Bay Area Air Basin (the Basin), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). As the local air quality management agency, the BAAQMD is required to monitor air pollutant levels to ensure that state and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards.

Depending on whether or not the standards are met or exceeded, the Basin is classified as being in "attainment" or "nonattainment." Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. The BAAQMD is in non-attainment for the state and federal ozone standards, the state and federal $PM_{2.5}$ (particulate matter up to 2.5 microns in size) standards and the state PM_{10} (particulate matter up to 10 microns in size) standards and is required to prepare a plan for improvement (BAAQMD2017a). The health effects associated with criteria pollutants for which the Basin is in non-attainment are described in Table 4.

Table 4 Health Effects Associated with Non-Attainment Criteria Pollutants

Pollutant	Adverse Effects
Ozone	(1) Short-term exposures: (a) pulmonary function decrements and localized lung edema in humans and animals and (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (2) long-term exposures: risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (3) vegetation damage; and (4) property damage.
Suspended particulate matter (PM_{10})	(1) Excess deaths from short-term and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease (including asthma).[a]
Suspended particulate matter ($PM_{2.5}$)	(1) Excess deaths from short- and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes, including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children, such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease, including asthma.[1]

[1] More detailed discussions on the health effects associated with exposure to suspended particulate matter can be found in the following documents: United States Environmental Protection Agency (USEPA), Air Quality Criteria for Particulate Matter, 2004.

Source: USEPA 2018

Air Quality Management

The Bay Area 2017 Clean Air Plan provides a plan to improve Bay Area air quality and protect public health as well as the climate. The legal impetus for the Plan is to update the most recent ozone plan, the 2010 Clean Air Plan, to comply with state air quality planning requirements as codified in the California Health and Safety Code. Although steady progress has been made toward reducing ozone levels in the Bay Area, the region continues to be designated as non-attainment for both the one-hour and eight-hour state ozone standards as noted previously. In addition, emissions of ozone precursors in the Bay Area contribute to air quality problems in neighboring air basins. Under these circumstances, state law requires the Clean Air Plan to include all feasible measures to reduce emissions of ozone precursors and reduce transport of ozone precursors to neighboring air basins (BAAQMD 2017a).

In 2006, the United States Environmental Protection Agency (USEPA) tightened the national 24-hour $PM_{2.5}$ standard regarding short-term exposure to fine particulate matter from 65 µg/m^3 (micro-grams per cubic meter) to 35 µg/m^3. Based on air quality monitoring data for years 2006-2008 showing that the region was slightly above the standard, the USEPA designated the Bay Area as non-attainment for the 24-hour national standard in December 2008. This triggered the requirement for the Bay Area to prepare a State Implementation Plan (SIP) submittal to demonstrate how the region would attain the standard. However, data for both the 2008-2010 and the 2009-2011 cycles showed that Bay Area $PM_{2.5}$ levels currently meet the standard. On October 29, 2012, the USEPA issued a proposed rule to determine that the Bay Area has attained the 24-hour $PM_{2.5}$ national standard. Based on this, the Bay Area is required to prepare an abbreviated SIP submittal that includes an emission inventory for primary (directly emitted) $PM_{2.5,}$ as well as precursor pollutants that contribute to formation of secondary PM in the atmosphere and amendments to the BAAQMD New

Source Review to address $PM_{2.5}$ (adopted December 2012).[1] However, key SIP requirements to demonstrate how a region will achieve the standard (i.e., the requirement to develop a plan to attain the standard) will be suspended as long as monitoring data continues to show that the Bay Area attains the standard.

In addition to preparing the "abbreviated" SIP submittal, the BAAQMD has prepared a report entitled *Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area* (BAAQMD 2012). The report will help guide the BAAQMD's ongoing efforts to analyze and reduce PM in the Bay Area to protect public health better. The Bay Area will continue to be designated as "non-attainment" for the national 24-hour $PM_{2.5}$ standard until the district elects to submit a "redesignation request" and a "maintenance plan" to the USEPA, and the agency approves the proposed redesignation.

Significance Thresholds

This analysis uses the BAAQMD's May 2017 CEQA Air Quality Guidelines to evaluate air quality. The May 2017 Guidelines include revisions made to the 2010 Guidelines, addressing the California Supreme Court's 2015 opinion in the *California Building Industry Association vs. Bay Area Air Quality Management District, 62 California 4th 369* (BAAQMD 2017b). Therefore, the numeric thresholds in the May 2017 BAAQMD CEQA Air Quality Thresholds were used for this analysis to determine whether the impacts of the project exceed the thresholds identified in Appendix G of the CEQA Guidelines.

The BAAQMD has developed screening criteria to provide lead agencies and project applicants with a conservative indication of whether a project could result in potentially significant air quality impacts. If all the screening criteria are met by a project, the lead agency or applicant would not need to perform a detailed air quality assessment of their project's air pollutant emissions and air quality impacts would be considered less than significant. These screening levels are generally representative of new development on greenfield sites without any form of mitigation measures taken into consideration. Storage facilities, such as the one proposed in this project, are not a land use type for which BAAQMD derived screening criteria for operational or construction emissions (BAAQMD 2017b).

Therefore, the project must meet numeric significance thresholds. Table 5 presents the significance thresholds for construction and operational-related criteria air pollutant and precursor emissions used for the purposes of this analysis. These represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the Basin's existing air quality conditions. For the purposes of this analysis, the proposed project would result in a significant impact if construction or operational emissions would exceed any of the thresholds shown in Table 5.

[1] PM is made up of particles emitted directly, such as soot and fugitive dust, as well as secondary particles formed in the atmosphere from chemical reactions involving precursor pollutants such as oxides of nitrogen (NO_x), sulfur oxides (SO_x), volatile organic compounds (VOC), and ammonia (NH_3).

Table 5 Air Quality Thresholds of Significance

	Construction-Related Thresholds	Operation-Related Thresholds	
Pollutant/ Precursor	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tpy)	Average Daily Emissions (lbs/day)
ROG	54	10	54
NO_X	54	10	54
PM_{10}	82 (exhaust)	15	82
$PM_{2.5}$	54 (exhaust)	10	54

Notes: tpy = tons per year; lbs/day = pounds per day; NOX = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ROG = reactive organic gases
Source: Table 2-1, BAAQMD 2017b.

The BAAQMD does not have quantitative thresholds for fugitive dust emissions during construction. Instead, the BAAQMD recommends Best Management Practices (BMPs) be implemented to reduce fugitive dust emissions. The project would implement the BAAQMD *Basic Construction Mitigation Measures* as a project design feature. The BMPs include the following:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered or maintain at least two feet of freeboard.
3. All visible mud or dirt track-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.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. Enclose, cover, water daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.)
6. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
7. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
8. 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). Clear signage shall be provided for construction workers at all access points.
9. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
10. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The air district's phone number shall also be visible to ensure compliance with applicable regulations.

In the absence of a qualified Community Risk Reduction Plan, BAAQMD has established the following *Thresholds of Significance* for local community risks and hazards associated with TACs and $PM_{2.5}$ for assessing individual source impacts at a local level. Impacts would be significant if:

- The project would result in an increased cancer risk of > 10 in one million
- The project would result in an increased non-cancer (i.e., Chronic or Acute) risk of > 1.0 Hazard Index
- The project would result in an ambient $PM_{2.5}$ concentration increase of > 0.3 µg/m^3 annual average

A project would be considered to have a cumulatively considerable impact if the aggregate total of current and proposed TAC sources within a 1,000 feet radius of the project fence-line in addition to the project would exceed the *Cumulative Thresholds of Significance*. Impacts would be significant if:

- The project would result in an increased cancer risk of > 100 in one million
- The project would result in an increased non-cancer (i.e., Chronic or Acute) risk of > 10 Hazard Index
- The project would result in an ambient $PM_{2.5}$ concentration increase of > 0.8 µg/m^3 annual average

Excess cancer risks are defined as those occurring more than or above and beyond those risks that would normally be associated with a location or activity if toxic pollutants were not present. Non-carcinogenic health effects are expressed as a hazard index, which is the ratio of expected exposure levels to an acceptable reference exposure level.

BAAQMD defines sensitive receptors as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and the chronically ill. These facilities include residences, school playgrounds, child-care centers, retirement homes, and convalescent homes.

Methodology

Air pollutant emissions generated by project construction and operation were estimated using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. CalEEMod uses project-specific information, including the project's land uses, square footages for different uses (e.g., apartments low-rise and general office), and location, to model a project's construction and operational emissions. The analysis reflects the construction and operation of the project as described in the project description. The following discussion is based on an air quality and greenhouse gas assessment, included as Appendix AQ. The modeling was based on the construction schedule provided in the project description.

Operational emissions modeled include mobile source emissions (i.e., vehicle emissions), energy emissions, and area source emissions. Mobile source emissions are generated by vehicle trips to and from the project site. The daily trip generation rates were sourced from the project Trip Generation Analysis (Appendix TRA). Construction would occur over approximately 10 months. It is conservatively estimated that material would be imported and exported to account for excavation and fill during grading, in accordance with Mitigation Measure GEO-1, found in Section 7, *Geology and Soils*. Further, it is conservatively assumed that the material import and export would not be balanced. Additionally, trenching for the recycled water pipeline is assumed to occur during the grading phase. The construction equipment used to model emissions is subject to change, but the

analysis herein used conservative estimates for the duration of time a given piece of equipment would be used during construction hours.

Impact Analysis

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The California Clean Air Act requires that air districts create a Clean Air Plan that describes how the jurisdiction will meet air quality standards. The most recently adopted air quality plan is the BAAQMD 2017 Plan. The 2017 Plan updates the most recent Bay Area plan, the 2010 Clean Air Plan, pursuant to air quality planning requirements defined in the California Health and Safety Code. To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors—ROG and NO_X—and reduce transport of ozone and its precursors to neighboring air basins. The 2017 Plan builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter and TACs. The 2017 Plan does not include control measures that apply directly to individual development projects. Instead, the control strategy includes control measures related to stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants.

The 2017 Plan focuses on two paramount goals:

- Protect air quality and health at the regional and local scale by attaining all national and state air quality standards and eliminating disparities among Bay Area communities in cancer health risk from TACs
- Protect the climate by reducing Bay Area GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050

Under BAAQMD's methodology, a determination of consistency with the 2017 Plan should demonstrate that a project:

- Supports the primary goals of the air quality plan
- Includes applicable control measures from the air quality plan
- Does not disrupt or hinder implementation of any air quality plan control measures

A project that would not support the 2017 Plan's goals would not be considered consistent with the 2017 Plan. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support for the clean air plan's goals. As discussed under criterion (b) below, the project would not exceed BAAQMD significance thresholds related to air quality emission), the project would not result in exceedances of BAAQMD thresholds for criteria air pollutants and thus would not conflict with the 2017 Plan's goal to attain air quality standards. The 2017 Plan includes goals and measures to increase the use of electric vehicles, promote the use of on-site renewable energy, and encourage energy efficiency. The project includes features that are consistent with these goals and measures, namely constructing a solar panel canopy above the parking stalls that would generate power to support the project and residential uses in the vicinity. Therefore, the project would not conflict with or obstruct the implementation of an applicable air quality plan and the project would have a less than significant impact.

LESS THAN SIGNIFICANT IMPACT

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?

Project construction would generate temporary construction emissions (direct emissions) and long-term operational emissions (indirect emissions). Project construction generated temporary air pollutant emissions are associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction vehicles, in addition to reactive organic gases (ROG) that would be released during the drying phase following application of architectural coatings. Long-term emissions associated with project operation would include emissions from vehicle trips (mobile sources); electricity use (energy sources); and landscape maintenance equipment, consumer products and architectural coating associated with on-site development (area sources).

Construction Emissions

Table 6 summarizes the estimated maximum daily emissions of pollutants during construction on the project site. As shown in the table, the BAAQMD thresholds would not be exceeded, and impacts would be less than significant.

Table 6 Estimated Maximum Daily Construction Emissions (lbs/day)

Construction Year	ROC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
2022	6	52	39	<1	12	6
BAAQMD Thresholds	54	54	N/A	N/A	82	54
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

lbs/day = pounds per day; ROC = reactive organic compounds, NO_X = nitrogen oxides, CO = carbon monoxide, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter or less, $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

Notes: All emissions modeling was completed made using CalEEMod. See Appendix AQ for modeling results. Some numbers may not add up due to rounding. Emission data is pulled from "mitigated" results, which account for compliance with regulations (including BAAQMD Regulation 8 Rule 3) and project design features. Emissions presented are the highest of the winter and summer modeled emissions.

Operational Emissions

As shown in Table 7 and Table 8, operational emissions would not exceed BAAQMD criteria pollutant thresholds. Therefore, project operation would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment, and impacts would be less than significant.

Table 7 Estimated Maximum Daily Operational Emissions (lbs/day)

Emissions Source	ROC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	<1	<0.1	<0.1	0	<0.1	<0.1
Energy	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	<1	<1	2	<0.1	<1	<1
Total	**<1**	**<1**	**2**	**<1**	**<1**	**<1**
BAAQMD Thresholds	54	54	N/A	N/A	82	54
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

lbs/day = pounds per day; ROC = reactive organic compounds, NO_X = nitrogen oxides, CO = carbon monoxide, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter or less, $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

Notes: All emissions modeling was completed made using CalEEMod. See Appendix AQ for modeling results. Some numbers may not add up due to rounding. Emission data is pulled from "mitigated" results, which account for compliance with regulations (including [including BAAQMD Regulation 8 Rule 3) and project design features. Emissions presented are the highest of the winter and summer modeled emissions.

Table 8 Estimated Annual Operational Emissions (tons/year)

Emissions Source	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Sources	<1	<0.1	<0.1	0	<0.1	<0.1
Energy Sources	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile Sources	<0.1	<0.1	<1	<0.1	<0.1	<0.1
Total	**<0.1**	**<0.1**	**<1**	**<0.1**	**<0.1**	**<0.1**
BAAQMD Thresholds	10	10	N/A	N/A	15	10
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

ROG = reactive organic gases, NO_X = nitrogen oxides, CO = carbon monoxide, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter or less, $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

Notes: All emissions modeling was completed made using CalEEMod. See Appendix AQ for modeling results. Some numbers may not add up due to rounding. Emission data is pulled from "mitigated" results, which account for compliance with regulations (including BAAQMD Regulation 8 Rule 3) and project design features. Emissions presented are the highest of the winter and summer modeled emissions.

LESS THAN SIGNIFICANT IMPACT

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Carbon Monoxide Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal 1-hour standard of 35.0 ppm or the federal and state 8-hour standard of 9.0 ppm (CARB 2016).

BAAQMD recommends comparing project's attributes with the following screening criteria as a first step to evaluating whether the project would result in the generation of CO concentrations that

would substantially contribute to an exceedance of the *Thresholds of Significance*. The project would result in a less than significant impact to localized CO concentrations if:

1. The project is consistent with an applicable congestion management program for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The project would not increase traffic volumes at affected intersections to more than 44, 000 vehicles per hour.
3. The project traffic would not increase traffic volumes at the affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage).

Based on the project Trip Generation Analysis, the project would generate 90 daily trips (Appendix TRA). The project trip generation is far below the screening thresholds listed above. Therefore, the impact of localized CO emissions would not be significant.

Toxic Air Containments

TACs are defined by California law as air pollutants that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. The following subsections discuss the project's potential to result in impacts related to TAC emissions during construction and operation.

Construction

Construction-related activities would result in temporary project-generated emissions of diesel particulate matter (DPM) exhaust emissions from off-road, heavy-duty diesel equipment for site preparation, grading, trenching, excavation, building construction, and other construction activities. DPM was identified as a TAC by CARB in 1998 (CARB 2021).

For assessing community risks and hazards, BAAQMD recommends a 1,000-foot influence area around the project site boundary. No sensitive receptors were identified within 1,000 feet of the project site, and the closest sensitive receptors are approximately 1,500 feet south of the project site. Therefore, given the distance of receptors and temporary nature of construction, risks and hazards from construction activities would not expose sensitive receptors to substantial TAC concentrations. Impacts would be less than significant.

Operation

Sources of operational TACs include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities. The project does not include construction of new gas stations, dry cleaners, highways, roadways, or other sources that could be considered new permitted or non-permitted source of TAC or $PM_{2.5}$ in proximity to receivers. In addition, the project would not introduce a new stationary source of emissions and the mobile emissions generated from the project would be minimal and spread over a broad geographical area. Furthermore, there are no sensitive receptors within 1,000 feet of the project. Therefore, project operation would not expose nearby sensitive receivers to substantial pollutant concentrations. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

During construction activities, heavy equipment and vehicles would emit odors associated with vehicle and engine exhaust and during idling. However, these odors would be intermittent and temporary and would cease upon completion, and odors disperse with distance. Overall, project construction would not generate other emissions, such as those leading to odors, affecting a substantial number of people. Construction-related impacts would be less than significant.

Table 3-3 in the BAAQMD's 2017 *CEQA Air Quality Guidelines* provides odor-screening distances for land uses that have the potential to generate substantial odor complaints. The uses in the table include wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, and chemical plants (BAAQMD 2017b). Odors are typically associated with industrial projects involving the use of chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes, as well as sewage treatment facilities and landfills. The proposed development is a storage facility, which is not a land use typically associated with odors. The facility would include a septic system; however, it would be buried at a depth in accordance with Contra Costa Health Services (CCHS), which is responsible for review, permitting, and inspection of septic tanks, discussed further in Section 7, *Geology and Soils.* The septic system would be required to implement odor control and solid-liquefying chemicals and must be used in the chemical toilet holding tank at all times the chemical toilet is available for use (CCHS 2018). Project operation would not generate other emissions, such as those leading to odors, that would affect a substantial number of people. Therefore, impacts related to odor during operation would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

This section utilizes a Planning Survey conducted by Marcus H. Bole & Associates on October 17, 2021 and peer reviewed by Rincon Consultants and is included as Appendix BIO.

Existing Setting

The project site is covered in ruderal non-native grasses and forbs, and includes two trees. The site is relatively flat, with elevations ranging from approximately 20 to 40 feet above mean sea level. Portions of the site have been filled with gravel to facilitate vehicle access. The Contra Costa Canal Spillway, which is classified as a man-made aqueduct, is east of the project site. The Antioch-Pittsburg Highway runs north of the proposed site and facilitates regular vehicle movement around the perimeter of the site. Consistent traffic to the north, commercial uses to the east and west, and the Union Pacific railway and more commercial uses to the south impede potential wildlife access to and from the site.

There are more than 23 special-status plant species and more than 15 special-status wildlife species that may occur in the project vicinity, according to California Department of Fish and Wildlife (CDFW). None of the plant species are expected to occur on the site considering the years of extensive disturbance. Vegetation on the site currently includes ruderal vegetation such as, soft chess (*Bromus hordeaceus*), slender wild oats (*Avena barbata*), red brome (*Bromus madritensis spp*.), mustard (*Hirscheldia spp. & Brassica nigra*), and meadow fescue (*Festuca pratensis*) (Appendix BIO).

Only one of the special-status wildlife species is known to occur on or near the project site, the western burrowing owl (*Athene cunicularia*). Common wildlife observed onsite include the northern mockingbird (*Mimus polyglottos*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), Western meadowlark (*Sturnella neglecta*), American robin (*Turdus migratorius*), and the American pipit (*Anthus rubescens*). Also observed are mammals such as raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), house mouse (*Mus musculus*), and the black-tailed jackrabbit (*Lepus calif*ornicus) (Appendix BIO).

There is a 0.39 acre seasonal wetland in the northeastern portion of the site. The seasonal wetland is dominated by creeping spikerush (*Eleocharis macrostachya*), annual beard grass (*Polypogon monspeliensis*), broadleaf pepperweed (*Lepidium latifolium)*, common tule (*Schoenoplectus acutus var. occidentalis*), and Mediterranean barely (*Hordeum marinum ssp. gussoneanum*). A single red willow (*Salix laevigata*) and a Fremont's cottonwood (*Populus fremontii*) exist along the edges of the seasonal wetland (Appendix BIO).

Regulatory Setting

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (ESA) in 1973 to protect species that are endangered or threatened with extinction. The ESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend. The ESA makes it unlawful to "take" a listed animal without a permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." Through regulations, the term "harm" is defined as "an act which actually kills or injures wildlife." Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC Section 703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the United States Fish and Wildlife Service (USFWS). The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e., exotic) species (50 Code of Federal Regulations Section 10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA.

Clean Water Act, Section 401

The Clean Water Act (Section 401) requires water quality certification and authorization for placement of dredged or fill material in wetlands and OWUS. In accordance with the Clean Water Act, criteria for allowable discharges into surface waters have been developed by the State Water Resources Control Board, Division of Water Quality. The resulting requirements are used as criteria in granting National Pollutant Discharge Elimination System (NPDES) permits or waivers, which are obtained through the Regional Water Quality Control Board (RWQCB) per the Clean Water Act (Section 402). Any activity or facility that will discharge waste (such as soils from construction) into surface waters, or from which waste may be discharged, must obtain an NPDES permit or waiver from the RWQCB. The RWQCB evaluates an NPDES permit application to determine whether the proposed discharge is consistent with the adopted water quality objectives of the basin plan.

California Endangered Species Act

The California Endangered Species Act (CESA) is similar to the ESA, but pertains to state-listed endangered and threatened species. The CESA requires state agencies to consult with the CDFW when preparing documents to comply with the CEQA. The purpose is to ensure that the actions of the lead agency do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species. In addition to formal listing under the federal and state endangered species acts, “species of special concern” receive consideration by CDFW. Species of special concern are those whose numbers, reproductive success, or habitat may be threatened.

California Fish and Wildlife Code

The California Fish and Wildlife Code (Section 3503.5) states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (all owls except barn owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The California Fish and Wildlife Code (Section 3503) also states that “it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.”

Rare and Endangered Plants

The California Native Plant Society (CNPS) maintains a list of plant species native to California with low population numbers, limited distribution, or otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California.

Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The CNPS California Rare Plant Rank (CRPR) categorizes plants as the following:

- Rank 1A: Plants presumed extinct in California;
- Rank 1B: Plants rare, threatened, or endangered in California or elsewhere;
- Rank 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
- Rank 3: Plants about which we need more information; and
- Rank 4: Plants of limited distribution.

The California Native Plant Protection Act (California Fish and Game Code Section 1900-1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered as defined by CDFW. An exception to this prohibition allows landowners, under specific circumstances, to take listed plant species, provided that the owners first notify CDFW and give the agency at least 10 days to retrieve (and presumably replant) the plants before they are destroyed. Fish and Wildlife Code Section1913 exempts from the 'take' prohibition 'the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way."

East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan

The East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) is intended to provide an effective framework to protect natural resources in eastern Contra Costa County, while improving and streamlining the environmental permitting process for impacts on endangered species. The HCP/NCPP Plan allows Contra Costa County and the City of Pittsburg, among other jurisdictions, to control endangered species permitting for activities and projects in the region that they perform or approve. The HCP/NCPP Plan provides for comprehensive species, wetlands, and ecosystem conservation and contribute to the recovery of endangered species in northern California. Contra Costa County, the City, and other jurisdictions would then be able to use those permits to extend take authorization to development and other activities that meet the terms of the HCP/NCPP Plan. The HCP/NCPP Plan proposes to provide take authorization for 28 listed and non-listed species (i.e., covered species). The HCP/NCPP Plan includes conservation measures to protect all 28 list and non-listed species, whether they are currently listed.

Pittsburg General Plan

The biological resources and wetlands policies in the Resource Conservation Element of the City's General Plan aim to protect and sustainably manage the unique biological resources and wetlands in the city. The goal and policies related to biological resources and wetlands are shown below:

> **Policy 2-P-44:** Ensure—through a combination of on- and off-site mitigation—that new development results in no net loss of wetlands.

Goal 9-G-1: Protect conservation areas, particularly habitats that support special status species, including species that are State or federally listed as endangered, threatened, or rare.

Goal 9-G-2: Guide development in such a way that preserves significant ecological resources.

Goal 9-G-3: Support the reclamation of wetlands and marshlands along local industrial waterfronts.

Policy 9-P-1: Ensure that development does not substantially affect special status species, as required by State and federal agencies. Conduct assessments of biological resources as required by CEQA prior to approval of development within habitat areas of identified special status species.

Policy 9-P-2: Establish an on-going program to remove and prevent the reestablishment of invasive species and restore native species as part of development approvals on sites that include ecologically sensitive habitat.

Policy 9-P-3: Participate in the development of a regional Habitat Conservation Plan (HCP) and consider its adoption for preservation of native species throughout eastern Contra Costa County.

Policy 9-P-9: Establish creek setbacks along riparian corridors, extending a minimum of 50 to 150 feet laterally on each side of the creekbed. Setback buffers for habitat areas of identified special status species and wetlands may be expanded as needed to preserve ecological resources.

Policy 9-P-12: Protect and restore threatened natural resources, such as estuaries, tidal zones, marine life, wetlands, and waterfowl habitat.

Policy 9-P-25: Encourage rehabilitation and revegetation of riparian corridors and wetlands throughout the City to contribute to bioremediation and improved water quality.

Impact Analysis

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

According to the CNDDB, more than 23 special-status plant species are known to occur in the project vicinity. These plants occur in specialized habitats, i.e., brackish and freshwater marshes, swamps, and riparian scrub. It is highly unlikely that special status plants occur within the project site, since the project area has been extensively disturbed over the years and there are areas of gravel scattered over the ground (Appendix BIO).

Existing trees adjacent to the project site could contain bird nests and birds that are protected under the Migratory Bird Treaty Act (MBTA). Protected birds include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows, and others, including their body parts (feathers, plumes etc.), nests, and eggs. Project construction could have the potential to adversely affect protected nesting birds. Therefore, the project would be required to implement Mitigation Measure BIO-1.

According to the CNDDB, more than 15 special-status wildlife species are known to occur in the project vicinity. The only special status species that has the potential to occur onsite or in the project vicinity is the western burrowing owl (*Athene cunicularia*) (Appendix BIO). The Contra Costa County HCP has indicated that the site's ruderal grassland habitat is considered suitable breeding and foraging habitat for the western burrowing owl. Owls were not detected on the site during field surveys conducted by Marcus H. Bole & Associates from September to October 2021; however, the site does support the California ground squirrel (*Otospermophilus beecheyi*) whose burrows are

used by the western burrowing owl for nesting and general habitation in the region. Only a few burrows were found onsite, and those burrows did not exhibit the presence of the western burrowing owl (molted feathers, cast pellets, prey remains, eggshell fragments, or excrement). There could also be western burrowing owls in ground nests. However, the potential to encounter western burrowing owls on the project site during ground disturbance activities would remain. Therefore, implementation of Mitigation Measure BIO-1 to protect burrowing owls would be required to reduce impacts to be less than significant.

Mitigation Measure

BIO-1 Nesting Bird Avoidance

To avoid impacts to nesting birds and raptors, vegetation removal and initial ground disturbance shall occur outside the nesting bird breeding season (March 1 through August 31). If construction must begin during the nesting bird breeding season, a nesting bird and raptor pre-construction survey shall be conducted by a qualified biologist in the disturbance footprint plus a 250-foot buffer, no more than two weeks prior to the initiation of construction activities. If the project is phased, a subsequent pre-construction survey shall be conducted prior to each phase of construction, if there is a break in construction activities greater than two weeks. If no active nests are observed, no further action would be required.

Pre-construction nesting bird and raptor surveys should be conducted during the time of day when birds are active and should be of sufficient duration to reliably conclude presence/absence of nesting birds and raptors on the project site and in the designated buffer. A report of the nesting bird and raptor surveys results, if applicable, shall be submitted to the City for review and approval prior to clearance for grading. If nests are found, their locations shall be flagged and mapped onto an aerial photograph of the project site at a scale no less than 1” = 200’ and/or recorded with the use of a GPS unit. Avoidance buffers shall be established around active nests. Depending upon the species, suitable minimum buffers may be as follows:

- Non-raptor species – minimum of 50 feet
- Raptor species – minimum of 250 feet

Appropriate buffers shall be determined and demarcated by a qualified biologist. If active nests are present, all construction work shall be conducted outside the established buffer zone from the nest. No ground disturbance shall occur in this buffer until the qualified biologist confirms that breeding/nesting is completed and all the young have fledged. If buffer zones are determined to be infeasible, a qualified biological monitor must be on-site to monitor construction activities in the buffer zones to ensure active nests and nesting birds are not impacted. Nesting bird surveys are not required for construction activities that occur between September 1 and January 31.

Implementation of Mitigation Measure BIO-1 would ensure protection of nesting birds and would reduce impacts to less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

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?

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?

The project site does not support existing natural plant or wildlife communities; however, there is a 0.39-acre seasonal acre seasonal wetland on the northeastern portion of the project site. There are several grasses, one red willow (*Salix laevigata*) and a Fremont's cottonwood (*Populus fremontii*) on or at the edge of the wetland. The wetland swale is in an area that is significantly lower in elevation from most of the project site and would be difficult to develop. The swale does not lie within a discernable drainage way and was likely created as a borrow pit from when the Contra Costa Canal was constructed (Appendix BIO). The swale collects seasonal precipitation from a small watershed to the south of the swale. There is no exit (culvert) for precipitation to continue a northerly flow under the Pittsburg-Antioch Highway so it sits in the depression, becoming the seasonal wetland, until it is subject to either evaporation or percolation.

The Pittsburg General Plan calls for protection and conservation of riparian habitats, creeks, shorelines, and wetlands in Goal 9-G-3 and Policies 2-P-44, 9-P-9, 9-P-12, and 9-P-25. The project site is located within the East Contra Costa County HCP/NCCP area (East Contra Costa County Habitat Conservation Plan Association 2006), which provides for a streamlined permitting process to protect wetlands and mitigate impacts. The HCP/NCCP calls for payment or restoration when a jurisdictional wetland is impacted by construction. If the on-site jurisdiction wetland, (i.e., the seasonal swale in the northeastern portion of the project site) were to be impacted by construction, mitigation measures in the HCP/NCCP and USACE directives would be triggered. To avoid impacting the seasonal wetland during project construction Mitigation Measure BIO-2 would be required. Operational runoff on the seasonal wetland would be prevented through use of bioretention areas, which would prevent pollutants from entering the wetland but would still allow water filtration and would continue to provide a water source for the seasonal wetland area.

Mitigation Measure

BIO-2 Wetlands Buffer

During project construction, the seasonal wetland within the northeastern portion of the project site shall be avoided and protected with a 25-foot buffer. During construction, the wetland and buffer shall be fenced and protected with silt fence/straw wattles. Signage shall also be installed prohibiting access to the fenced off area. Installation and maintenance of the wetland buffer shall be confirmed by a CDFW or East Contra Costa HCP/NCPP qualified biologist.

Compliance with Mitigation Measure BIO-2 would ensure protection of wetlands and reduce impacts to wetlands to less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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?

The project site consists of ruderal vegetation and disturbed areas. Land use in the vicinity are primarily commercial or industrial with no connectivity to natural habitats and is therefore not expected to support wildlife movement. The project site is in an urbanized area and is surrounded by developed land. The site is not located within a known regional wildlife movement corridor or other sensitive biological area as indicated by the USFWS Critical Habitat portal or CDFW Biogeographic Information and Observation System (USFWS 2020; CDFW 2020). The project would have no impact to wildlife movement corridors.

NO IMPACT

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Implementation of the proposed project would not involve the removal of trees. Therefore, the project would not conflict with any local policies or ordinances protecting biological resources, including Chapter 18.84, Article XIX of PMC that includes tree preservation and protection standards for removal, maintenance, and planting for which a permit is required to remove and protected trees on a site. The project would not conflict with other local policies or ordinances related to environmental resources. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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?	☐	☐	■	☐

In July 2021, Genesis Society Archaeological – Historical – Cultural Resource Management Services (Genesis Society) prepared a cultural resources study, which included: a cultural resources records search at the California Historical Resources Information System Northwest Information Center (NWIC), located at Sonoma State University; an NAHC SLF search, and a pedestrian field survey (Jensen 2021). This study was peer reviewed by Rincon in September 2021 and is included as Appendix CUL.

This section provides an analysis of the project's impacts on cultural resources, including historical and archaeological resources, as well as human remains. CEQA requires a lead agency to determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC], Section 21084.1). A historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR); a resource included in a local register of historical resources; or any object, building, structure, site, area, place, record, or manuscript a lead agency determines to be historically significant (CEQA Guidelines, Section 15064.5[a][1-3]).

A resource shall be considered historically significant if it:

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

In addition, if it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC, Section 21083.2[a], [b]).

PRC, Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

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

Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Rincon completed a review of historical topographic maps and aerial imagery to ascertain the development history of the project site. Historical topographic maps from 1908 to 1965 depict the project site as undeveloped bounded to the north by current day Pittsburg-Antioch Highway, to the south by a rail line, and a water feature to the east (USGS 2021a; NETR Online 2021). Aerial imagery from 1949 depicts the project site as undeveloped with ranches and residential buildings to the east and west, as well as the highway to the north, and the rail line to the south (NETR Online 2021). Imagery from 1957 to 1987 depict the project site similar to that of 1949, with grading of the project site throughout various years (NETR Online 2021). From 1969 to 1995, topographic maps show commercial development to the east and west of the project site, with no development within the project site (USGS 2021a; NETR Online 2021). Imagery from 1987 depict the residence to the east demolished, and commercial development starting in 1993, carried through 2021 (NETR Online 2021).

There are no identified cultural resources within the project site. The aerial imagery and historical topographic map review did not identify the project site as being developed, nor did it identify any potential built environment resources within the project site. Additionally, the Genesis Society survey and research were returned with negative results for cultural resources within the project site. Therefore, no built environment resources are present that may be impacted by the project. There would be no impact to built environment resources on the project site.

NO IMPACT

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

An NWIC records search was performed to identify previously recorded cultural resources, as well as previously conducted cultural resources studies within the project site and a 0.25-mile radius surrounding it. The National Register of Historic Places (NRHP), the CRHR, the Office of Historic Preservation Historic Properties Directory, the California Inventory of Historic Resources, the Archaeological Determinations of Eligibility list, as well as historic topographic map and aerial imagery review were also reviewed (Appendix CUL).

The NWIC records search identified 41 cultural resources studies conducted within a 0.25-mile radius of the project site, seven of which evaluated portions of the project site. The NWIC search

identified five previously recorded cultural resources within a 0.25-mile radius of the project site, none of which occur within the project site.

The site has been disturbed by grading starting in 1987 at the earliest. Additionally, substantial development surrounds the project site in all directions. On July 25, 2021, Genesis Society conducted an intensive pedestrian survey by walking 20-meter interval parallel transects across the project site. There was some evidence of previous farming, ranching, grubbing, and grading disturbance to the project site, as well as modern trash dumping. No prehistoric or historic-period archaeological or built environment resources were identified during the efforts; therefore, it was concluded that no resources will be affected by the project (Appendix CUL).

Rincon contacted the NAHC on September 10, 2021, to request an updated SLF search of the project site. The NAHC emailed a response on October 14, 2021, stating the SLF search was negative.

As the SLF search was returned with negative results, and no prehistoric resources were identified within the project site, the project site is considered to have low archaeological sensitivity. However, it is possible that unanticipated archaeological deposits and/or human remains could be encountered and damaged during ground-disturbing activities, especially if those activities would occur in less-disturbed areas. Consequently, mitigation would be necessary to reduce potential impacts to archaeological resources, including those that may be considered historical resources.

Mitigation Measure

CUL-1 Worker's Environmental Awareness Program

An environmental professional shall conduct a Worker's Environmental Awareness Program (WEAP) training on archaeological sensitivity for all construction personnel prior to the commencement of any ground-disturbing activities within the project area. The training material should be developed by an archaeologist who meets or exceeds the Secretary of Interior's Professional Qualification Standards for archaeology (National Park Service [NPS] 1983). Archaeological sensitivity training should include a description of the types of cultural material that may be encountered, cultural sensitivity issues, regulatory issues, and the proper protocol for treatment of the materials in the event of a find.

CUL-2 Unanticipated Discovery of Cultural Resources

If archaeological resources are encountered during construction, work within 50 feet of the find shall be halted and a qualified archaeologist meeting the Secretary of Interior's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately be contacted to evaluate the find pursuant to Public Resources Code Section 21083.2. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for determining CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to significant resources. If the resource is of Native American origin, the NAHC shall be contacted to ensure that the Most Likely Descendant can assess the find. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Pittsburg for review and approval and submitted to the NWIC after completion. Recommendations contained within prepared reports shall be implemented throughout the remainder of ground disturbance activities.

CUL-3 Archaeological and Tribal Construction Monitoring

In the event of the identification of cultural resources on the project site, a professionally qualified archaeologist and Tribal representative shall monitor ground-disturbing construction conducted during project implementation. The monitors shall observe ground-disturbing construction to identify potential archaeological deposits and avoid or limit damage to such deposits. The monitors shall have the discretion to reduce the intensity of monitoring, or suspend such monitoring, if field conditions clearly indicate that no potential intact archaeological deposits could be encountered. Should an intact archaeological deposit be identified, the monitors shall be empowered to temporarily halt construction in the vicinity of the find. The archaeologist shall, in consultation with the Tribal representative and City, evaluate the eligibility of the deposit for inclusion in the California Register of Historical Resources. If the deposit is eligible, the project shall attempt to feasibly avoid damage to the deposit (e.g., redesign or capping). If avoidance is not feasible, the archaeologist shall, in consultation with the Tribal representative and City, develop and implement a plan to recover the scientifically consequential data represented by the deposit in a manner respectful of tribal concerns. A report of the finds of any resource evaluation and/or data recovery efforts shall be submitted to the Northwest Information Center in Sonoma State as a condition for access to its archives. Implementation of Mitigation Measure CUL-1 through CUL-3 would reduce impacts to cultural resources to less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

The cultural resources records search did not identify cemeteries or archaeological resources containing human remains within the project site. However, the discovery of human remains is always a possibility during ground disturbing activities, as would be required for development within the site. Human burials outside of formal cemeteries often occur in prehistoric archaeological contexts. In addition to being potential archaeological resources, human burials have specific provisions for treatment in California Public Resources Code Section 5097. Additionally, the California Health and Safety Code (Sections 7050.5, 7051, and 7054) has specific provisions for the protection of human burial remains. Existing regulations address the illegality of interfering with human burial remains, and protects them from disturbance, vandalism, or destruction. Public Resources Code Section 5097.98 also addresses the disposition of Native American burials, protects such remains, and establishes the NAHC as the entity to resolve any related disputes.

If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the NAHC, which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Compliance with Public Resources Code Section 5097.98 and State of California Health and Safety Code Section 7050.5 would ensure impacts to human remains are less than significant.

LESS THAN SIGNIFICANT IMPACT

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?	☐	☐	■	☐

Electricity

In 2020, California's total electric generation was 272,576 gigawatt-hours (GWh), of which 190,913 GWh was produced in-state (California Energy Commission [CEC] 2020). California's non-CO_2 emitting electric generation sources accounted for more than 51 percent of the total in-state generation, which was down from about 53 percent in 2019. Contra Costa County consumed approximately 9,639 GWh of electricity, or 3.4 percent of the electricity generated in California, in 2019 (CEC 2019a). If electricity is required during construction, the project would use electricity provided by Marin Clean Energy (MCE) or Pacific Gas and Electric (PG&E). The project would generate its own electricity on site through solar panels once operational. Table 9 details electricity consumption in Contra Costa County and California, and for the provider, PG&E. The City of Pittsburg has not adopted an energy efficiency plan but encourages the use of solar power with General Plan Policy 2-P-19, which calls to revise the City's Subdivision Ordinance to encourage solar access and other energy-saving devices.

Table 9 2019 County, State, and Provider Electricity Consumption

Energy Type	Contra Costa	PG&E[1]	California	Proportion of PG&E Consumption	Proportion of Statewide Consumption[2]
Electricity (GWh)	9,639	78,390	282,194	28%	3.4%

GWh = gigawatt-hours

[1] MCE delivers energy through PG&E

[2] For reference, the population of Contra Costa County (979,431 persons) is approximately 2.5 percent of the population of California (39,466,855 persons) (California Department of Finance 2021).

Source: CEC 2021c

Petroleum

To reduce statewide vehicle emissions, California requires that all motorists use California Reformulated Gasoline (CaRFG), a cleaner formulation of gasoline that results in lower emissions of ozone, CO and other air pollutants when burned. Californians consumed approximately 1.7 billion gallons of diesel fuel and 12.6 billion gallons of gasoline in 2020 (CEC 2020). Gasoline is the most used transportation fuel in California and is used by light-duty cars, pickup trucks, and sport utility vehicles (CEC 2018). Diesel is the second most used fuel in California and is used primarily by heavy duty-trucks, delivery vehicles, buses, trains, ships, boats and barges, farm equipment, and heavy-duty construction and military vehicles (CEC 2018). Both gasoline and diesel are primarily petroleum-based, and their consumption releases greenhouse gas (GHG) emissions, including carbon dioxide (CO_2) and NO_X.

In 2019, approximately 39.4 percent of the state's energy consumption was used for transportation activities (USEIA 2020). Californians presently consume over 19 billion gallons of motor vehicle fuels per year (CEC 2018). Though California's population and economy are expected to grow, gasoline demand is projected to decline from roughly 15.6 billion gallons in 2017 to between 12.1 billion and 12.6 billion gallons in 2030, a 19 percent to 22 percent reduction. This decline comes in response to both increasing vehicle electrification and higher fuel economy for new gasoline vehicles (CEC 2018). Fuel consumption in Contra Costa County in comparison with California is shown in Table 10

Table 10 2020 Annual Gasoline and Diesel Consumption

Fuel Type	Contra Costa County (gallons)	California (gallons)	Proportion of Statewide Consumption[1]
Gasoline	336 million	12.6 billion	2.7%
Diesel	23 million	1.8 billion	1.3%

[1] For reference, the population of Contra Costa County (979,431 persons) is approximately 2.5 percent of the population of California (39,466,855 persons) (California Department of Finance 2021).

Source: CEC 2020

Impact Analysis

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?

During project construction, energy would be consumed in the form of petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, and vehicles used to deliver materials to the site. The project would require site preparation and grading, including hauling material off-site; pavement and asphalt installation; building construction; architectural coating; and landscaping and hardscaping.

The total consumption of gasoline and diesel fuel during project construction was estimated using the assumptions and factors from CalEEMod (Appendix AQ). Table 11 presents the estimated construction energy consumption, indicating construction equipment, hauling and vendor trips, and worker trips would consume approximately 6,576 gallons of gasoline and 39,314 gallons of diesel fuel over the project construction period. Fuel consumption calculations can be found in Appendix AQ.

Table 11 Estimated Fuel Consumption During Construction

Fuel Type	Gallons of Fuel
Diesel Fuel (Construction Equipment)	34,206
Diesel Fuel (Hauling & Vendor Trips)	5,108
Other Petroleum Fuel (Worker Trips)	6,576
Total	**45,890**

Source: Appendix AQ

The construction energy estimates are conservative because the equipment used in each phase of construction was assumed to be operating 8 hours of every construction day in the phase the equipment would be used. In reality, not all equipment would be used on every construction day nor all day. Project construction would be temporary and typical of similar projects. Construction equipment would be maintained to all applicable standards, and construction activity and associated fuel consumption and energy use would be temporary and typical for construction sites. It is also reasonable to assume contractors would avoid wasteful, inefficient, and unnecessary fuel consumption during construction to reduce construction costs. In addition, construction contractors would be required to comply with the provisions of 13 California Code of Regulations (CCR) Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes, which would minimize unnecessary fuel consumption. Construction equipment would be subject to the USEPA Construction Equipment Fuel Efficiency Standard (40 Code of Federal Regulations Parts 1039, 1065, and 1068), which would minimize inefficient fuel consumption. Therefore, the project would not involve the inefficient, wasteful, and unnecessary use of energy during construction, and the construction-phase impact related to energy consumption would be less than significant.

Operational Energy Demand

Project operation would increase energy demand in the form of gasoline consumption as the project would generate its own renewable energy on site. Increased gasoline consumption would be associated with new vehicle trips to and from the site. The estimated annual VMT that would be generated by the project (Appendix AQ) is used to calculate operational gasoline consumption. Table 12 shows the estimated total annual fuel consumption of the project using the estimated VMT and the assumed vehicle fleet mix (Appendix AQ). In addition to fuel consumption, project operation would consume approximately 0.09 GWh of electricity per year, or less than 1 percent of total electricity use in Contra Costa County in 2019 (CEC 2019a).

The project includes the construction of solar canopies over the parking stalls that would generate approximately 3 megawatts of energy per day, which would power the on-site office (which would require 20 kilowatts of energy per day). This would offset other regional demand for nonrenewable energy.

Table 12 Estimated Project Annual Energy Consumption

Source	Energy Consumption[1]	
Transportation Fuels[2]		
Gasoline	9,544 gallons	1,048 MMBtu
Diesel	1,556 gallons	198 MMBtu
Electricity	0.09 GWh	307 MMBtu
Total Project Energy Consumption		**1,573 MMBtu**

MMBtu = million metric British thermal units; GWh = gigawatt hours

[1] Energy consumption is converted to MMBtu for each source.

[2] The estimated number of average daily trips associated with the project is used to determine the energy consumption associated with fuel use from operation of the project. According to CalEEMod calculations (see Appendix AQ), the project would result in approximately 214,572 annual VMT.

See Appendix AQ for CalEEMod output results for electricity and natural gas usage and fuel consumption calculations

The project would be required to comply with all standards set in California Building Code (CBC) Title 24, which would minimize the wasteful, inefficient, or unnecessary consumption of energy resources during operation. California's Green Building Standards Code (CALGreen; California Code of Regulations, Title 24, Part 11) requires implementation of energy efficient light fixtures and building materials into the design of new construction projects.

Furthermore, the 2019 Building Energy Efficiency Standards (CBC Title 24, Part 6) requires newly constructed buildings to meet energy performance standards set by the Energy Commission. As the name implies, these standards are specifically crafted for new buildings to result in energy efficient performance so that the buildings do not result in wasteful, inefficient, or unnecessary consumption of energy. The standards are updated every three years and each iteration is more energy efficient than the previous standards. Furthermore, the project would have the capacity to generate 3 MW of renewable energy on site and would further reduce its use of nonrenewable energy resources. Therefore, project operation would not result in wasteful or unnecessary energy consumption.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The project would be subject to local, regional, and state energy requirements and thus, would not conflict or obstruct a state or local plan for renewable energy or energy efficiency. The on-site solar system would offset 100 percent of the project's energy use and generate enough solar renewable energy (approximately 2 megawatt hours per year) to supply approximately 600 homes in Pittsburg and the surrounding area. The project would supply the solar energy generated to MCE as a part of MCE's Feed-in Tariff program, whereby MCE purchases the solar energy at a discounted rate and sells the energy under MCE's Local Sol energy option. Thus, the project would support Senate Bill 100, which calls for a 100 percent clean and carbon-free California by 2045. The project would be required to comply with all state and local plans for renewable energy and energy efficiency. Therefore, the project would not conflict with any state or local plans for energy efficiency, and this impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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:				
1. 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?	☐	☐	■	☐
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
4. 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 wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	■	☐
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■	☐	☐

This discussion is based on a design-level geotechnical investigation, conducted by Berlogar Stevens & Associates on June 11, 2018, and is included as Appendix GEO.

Setting

Active faults are defined by the State of California to be a fault that has surface displacement within the Holocene time (approximately the last 10,000 years). Potentially active faults as defined by the State of California are faults that have shown evidence of surface displacement during the Quaternary (last 1.6 million years). Any fault that is sufficiently active describes a fault that has some evidence of Holocene displacement on one or more of its segments or branches. Associated issues with earthquakes include landslides, which is a movement of surface material down a slope. Other issues include lateral spread and liquefaction, which are processes in which material flows in a fluid-like movement; lateral spread refers to this movement over a gentle slope during a landslide, and liquefaction refers to water-saturated sediment losing strength due to ground-shaking. Subsidence and collapse can also occur, which refer to the caving in or sinking of land.

The Bay Area contains both active and potentially active faults. Major active faults in or near Pittsburg include the Clayton fault located approximately 5 miles southwest of the site, the Davis fault located approximately 4.1 miles east of the site, and the Concord fault located approximately 10 miles southwest of the site (DOC 2015).

Expansive soils are soils that swell in density and volume as they absorb water and contract as they lose water. Associated problems include cracking and deterioration of roadway surface, as they expand and contract during seasonal wet and dry cycles. According to the Natural Resource Conservation Service's Web Soil Survey, multiple soil types that occur in Pittsburg have a potential for shrinking and swelling behavior, including but not limited to Brentwood Clay loam, Capay clay, and Rincon clay loam (NRCS 2021). In areas underlain by expansive soils, the shrinking and swelling of soil can disrupt or damage paved surfaces. The project site is topographically flat and soils are classified as Rincon clay loam (NRCS 2021).

The project site is situated in the Suisun Bay within the Coast Ranges geomorphic province of California (California Geological Survey 2002). The surface geology of the project site is entirely mapped as Quaternary old (Pleistocene) alluvial-fan and fluvial deposits (Qpaf), derived from modern stream courses (Helley and Graymer 1997). Pleistocene alluvial-fan and fluvial deposits consist of dense brown gravely and clayey sand or clayey gravel that fines upward to sandy clay and locally contain freshwater mollusks and extinct late Pleistocene vertebrate fossils (Helley and Graymery 1997). Based on the findings of the site-specific geotechnical investigation, the subsurface borings did not encounter any significant fill deposits and typically encountered an upper soil layer consisting of several feet of very stiff to hard silty clay (Appendix GEO). The sedimentary deposits underlying the soil layer were described as predominately very stiff to hard silty to sandy clays and dense clayey sands, which is consistent with the lithology description provided by Helley and Graymer (1997; Appendix GEO).

The paleontological sensitivities of the geologic units underlying the project site were evaluated based on a desktop review of existing data, including geologic maps, published literature, and online fossil locality and collections databases. Fossil collections records from the Paleobiology Database (PBDB) and University of California Museum of Paleontology (UCMP) online database were reviewed for known fossil localities in Contra Costa County (Paleobiology Database 2021; UCMP 2021). Based on the available information contained within existing scientific literature and the UCMP database, paleontological sensitivities were assigned to the geologic units underlying the

project site. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units.

The UCMP reports 49 vertebrate fossil localities from unnamed Pleistocene units in Contra Costa County (UCMP 2021). In addition, the PBDB reports five localities in the northern East Bay region (i.e., western parts of Contra Costa and Alameda Counties) (PBDB 2021). Collectively, these localities have produced nearly the full suite of Pleistocene fossil specimens of elephant relatives (*Mammuthus* and *Mammut*), ground sloths (*Glossotherium* and *Megalonyx*), horse (*Equus*), bison (*Bison*), and camels (*Camelops* and *Hemiauchenia*). Based on the paleontological locality searches and literature review, the mapped geologic unit within the project site (i.e., Quaternary old alluvial-fan and fluvial deposits [Qpaf]) is assigned a high paleontological sensitivity, in accordance with SVP standards (PBDB 2021; UCMP 2021; SVP 2010).

The Society of Vertebrate Paleontology (SVP) has developed a system for assessing paleontological sensitivity and describes sedimentary rock units as having high, low, undetermined, or no potential for containing significant nonrenewable paleontological resources (SVP 2010). This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present

Regulatory Setting

Federal and State

ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT

Following the 1989 Loma Prieta earthquake, the Seismic Hazards Mapping Act (SHMA) was passed by the California legislature in 1990. The SHMA (PRC Chapter 7.8, Section 2690-2699.6) directs the Department of Conservation, California Geological Survey to identify and map areas prone to liquefaction, earthquake-induced landslides and amplified ground shaking. It also requires that agencies only approve projects in seismic hazard zones following site-specific geotechnical investigations to determine if the identified hazard is present and the inclusion of appropriate mitigation to reduce earthquake-related hazards.

SEISMIC HAZARDS MAPPING ACT

The Seismic Hazards Mapping Act of 1990 was enacted, in part, to address seismic hazards not included in the Alquist-Priolo Act, including strong ground shaking, landslides, and liquefaction. Under the Alquist-Priolo Act, the State Geologist is responsible for identifying and mapping seismic hazards. CGS Special Publication 117, adopted in 1997 by the State Mining and Geology Board, constitutes guidelines for evaluating seismic hazards other than surface faulting and for recommending mitigation measures as required by PRC Section 2695(a). In accordance with the mapping criteria, the CGS seismic hazard zone maps identify areas with the potential for a ground shaking event that corresponds to 10 percent probability of exceedance in 50 years.

The purpose of the Seismic Hazards Mapping Act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards. Cities, counties, and state agencies are directed to use seismic hazard zone maps developed by CGS in their land-use planning and permitting processes. The Seismic Hazards Mapping Act requires site-specific geotechnical investigations prior to permitting most urban development projects in seismic hazard zones.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Construction projects which disturb one or more acres of soil or are part of a larger common plan of development that disturbs one or more acres of soil must obtain coverage under the statewide NPDES General Permit for Discharges of Stormwater Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ). In order to obtain coverage under the Construction General Permit, a project-specific Stormwater Pollution Prevention Plan (SWPPP) must be prepared. The SWPPP outlines BMPs to reduce stormwater and non-stormwater pollutant discharges, including erosion control, minimizing contact between construction materials and precipitation, and strategies to prevent equipment leakage or spills.

Impact Analysis

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

The project site is not in an Earthquake Fault Zone as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known active or potentially active faults exist on the site. Thus, the likelihood of surface rupture occurring from active faulting at the site is low. The project site would not likely be subject to ground rupture. Furthermore, the project site would not be developed with residential uses and would be estimated to have one employee who would be at the site approximately twelve hours per day. Under the Alquist-Priolo Act, development of a building for human occupancy, such as a commercial or residential building, is restricted near active fault traces. Other facilities, such as non-occupied buildings, roads, utilities, or parking areas, are not subject to this restriction. A structure for human occupancy is defined in the Alquist-Priolo Act as a structure that is occupied a minimum of 2,000 person/hours per year. The proposed office would be the only structure on the site intended for human occupancy (during office hours). The nearest fault to the project site is the Concord Fault, located 10 miles southwest of the site. As such, the structure intended for human occupancy on site would be located far enough away from the fault and would be required to be constructed pursuant to current CBC seismic requirements.

Therefore, the risk or loss, injury, or death involving rupture of a known earthquake fault would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Major earthquakes have occurred in the vicinity of Pittsburg in the past and can be expected to occur again in the near future (Pittsburg 2010b). Strong ground shaking at the project site could result from a rupture of faults near the City or of the major regional earthquake faults in the Bay Area. Such strong ground shaking could damage structures on the project site. However, no residential structures would be constructed on the site that could be vulnerable to collapse during ground shaking. As discussed above, under criteria a.1, the commercial structure would be located 10 miles northeast of the nearest fault, which would reduce the risk of loss, injury, or death involving strong seismic ground shaking.

Further, the structure would be required to be constructed to meet current seismic standards in the current CBC intended to ensure that buildings could withstand the adverse effects of strong ground shaking. With compliance with required compliance with all applicable City building and fire code standards, as well as the CBC (CBC, Title 24 of the California Code of Regulations), regarding seismic safety, design and construction of the proposed project would be engineered to withstand the expected ground acceleration that may occur at the project site. Additionally, PMC Section 15.88.050 requires that project applicants submit a Soils and Engineering Geology Report that includes a discussion about seismic activity that may affect the development. Project construction would also be subject to review and approval by City building and safety officials prior to project approval. Proper engineering, including compliance with the CBC, would minimize the risk to life and property associated with potential seismic activity in the area. Impacts related to seismic shaking would therefore be less than significant

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Liquefaction, which is primarily associated with unconsolidated, saturated materials, is most common in areas of sand and silt or on reclaimed lands. In these areas, ground failure and differential settlement could result from a severe earthquake, damaging paved surfaces and elevated structures. Liquefaction potential is highest in areas underlain by poorly engineered Bay fills, Bay mud, and unconsolidated alluvium. The northeast portion, comprising most of the project site, is identified as being within a liquefaction zone (DOC 2016b). However, the sandy soils encountered in the borings taken in the geotechnical investigation were dense to very dense and were predominantly hard clayey sand (Appendix GEO). Further, the groundwater depth is approximately 35 feet below ground surface (Appendix GEO). Therefore, the risk of liquefaction would be low. Additionally, the proposed office structure would be sited on the northwestern portion of the project site and would not be located within a liquefaction zone. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The project site is a flat, undeveloped, approximately 12.5-acre parcel in an urbanized area of the City. As there are no significant slopes in the project vicinity, no substantial landslide risks would be associated with the site. Pursuant to the USGS Landslide Inventory, the project site is not within a landslide hazard zone (USGS 2021b). Impacts related to landslides would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

The proposed project would include construction activities that could potentially result in soil erosion. The project would be required to follow applicable CMC requirements and would be subject to the erosion control requirements of PMC Chapter 15.88. Pursuant to Section 15.88.030(B), “all land-disturbing or land-filling activities or soil storage shall be undertaken in a manner designed to minimize surface runoff, erosion and sedimentation.” In addition to local erosion control regulations, development would be required to comply with the NPDES

Construction General Permit Requirements, which would limit peak post-project runoff levels to pre-project levels. The project applicant would also be required to prepare a SWPPP, a sediment and erosion control plan that describes the activities to prevent stormwater contamination, control sedimentation and erosion, and comply with the requirements of the statewide permit. Therefore, the project would have a less than significant impact from soil erosion or the loss of topsoil.

LESS THAN SIGNIFICANT IMPACT

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?*

d. *Would the project 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?*

The project site is not within an area mapped as having landslides (USGS 2021b). Therefore, the project has a low potential for slope instability occurring at the site and impacts would be less than significant.

Project construction would have impacts regarding expansive soils as near-surface soils are classified as moderately to highly expansive (Appendix GEO). There would be a paved surface that would contain personal property, RVs and boats. Compliance with CBC and PMC Chapter 15.88 would minimize potential loss of property due to the site's location on expansive soils. Expansive soil's ability to undergo significant shrinking or swells due to moisture content may result in unacceptable settlement or heave of structures, pavements and concrete slabs-on-grade supported over these materials. This settlement or heaving could have adverse impacts to anyone employed at or using the facilities of the proposed project. To reduce the potential detrimental effects of expansive soils implementation of Mitigation Measures GEO-1 through GEO-5 would be required to further address expansive soils on the project site. Therefore, impacts would be less than significant with mitigation incorporated.

Mitigation Measures

GEO-1 Site Preparation and Grading

The project applicant and/or their contractor shall cut off above ground vegetation at ground surface and remove it by scraping with grading equipment. Exposed subgrade in areas that are at a finished grade, have been cut to a finished grade, or that would receive fill shall be scarified to a depth of 12 inches, be moisture conditioned and compacted. If soft or saturated soils are encountered during excavation and compaction, then the applicant's Geotechnical Engineer shall determine if deeper excavations shall be required to expose firm soils.

If conventionally reinforced non-structural concrete slab-on-grade floors and pavements are used, expansive soils shall be removed or over-excavated and replaced with non-expansive soils as fills, which shall be placed in thin lifts of 6 to 9 inches. The onsite soil shall be free of deleterious matter or rocks greater than 4 inches in largest dimension. The material used as fills shall be relatively impervious when compacted. Clean sand or very sandy soil is not acceptable, as they may drain into the expansive soils below, which could result in swelling. To meet acceptable conditions as non-expansive fill, the fill must meet the following properties and be property moisture conditioned, placed, and compacted:

- 20 to 50 percent passing no. 200 sieve
- Maximum 12 plasticity index
- 40 maximum liquid limit
- 20 maximum expansion index
- Expansive on-site clayey soils – 85 to 90 percent relative compaction at no less than 5 percent over the optimum moisture content.
- Non-expansive import soils – at least 90 percent relative compaction at no less than 3 percent over the optimum moisture content.
- The top 12 inches of finished subgrade in pavement areas should be moisture conditioned to at least 3 percent above the optimum moisture content and compacted to at least 93 percent relative compaction.
- Aggregate base in pavement areas, including below concrete slabs for vehicle parking, should be moisture conditioned to at least 3 percent above the optimum moisture content and compacted to at least 95 percent relative compaction.

Observation and soil density tests shall be performed by the Geotechnical Engineer to assist the contractor in obtaining the required degree of compaction and proper moisture content. The Geotechnical Engineer shall be notified at least 48 hours prior to commencement of grading to discuss procedures and methods with the contractor. The City shall review and approve the Geotechnical Engineer's soil density tests prior to providing building permits for the project.

GEO-2 Utility Trenches

To maintain the desired support for foundations, the project applicant and/or their contractor shall locate utility trenches running parallel or near-parallel to building foundations away from the foundation such that the base of the trench excavation is located above an imaginary plane having an inclination of 1 horizontal to 1 vertical (1H:1V), extending downward from the bottom edge of the foundation toward the trench location. Where trench locations are restricted and must be in close proximity to foundations, footings or slab edges located adjacent to utility trenches shall be deepened during the design of the project as necessary so that their bearing surfaces are below an imaginary plane having an inclination of 1H:1V, extending upward from the bottom edge of the adjacent utility trench.

The walls of trenches extending into the clayey soils will likely stand in vertical cuts in the upper 4 to 5 feet with appropriate shoring, provided proper moisture content in the soils is maintained and that the trench walls are not subjected to vibration or surcharge loads above the excavation. Where weaker soils are encountered in the upper 4 to 5 feet of the site or trenches extend deeper than 5 feet, trench sidewalls shall be sloped no steeper than 1H:1V in stiff cohesive soil. In the event that granular soils are encountered, trench sidewalls shall be no steeper than 1.5H:1V in moist granular soils and no steeper than 2H:1V in dry granular soils. Flatter trench slopes may be required if seepage is encountered during construction or if exposed soil conditions differ from those encountered in our borings. Heavy construction equipment, building materials, excavated soil, and vehicular traffic shall not be allowed within 5 feet of the top (edge) of the excavation.

Utility trench backfill above the bedding and shading materials may consist of on-site soils that have been processed to remove rock fragments over 4 inches in largest dimension, rubbish, vegetation and other undesirable substances. Backfill materials shall be placed in level lifts about 4 to 12 inches in loose thickness, moisture conditioned and mechanically compacted. Lift thickness will be a

function of the type of compaction equipment in use. Thinner lifts (4- to 6-inch lifts) shall be required for manually operated equipment, such as wackers or vibratory plates, and thicker lifts possible where a sheepsfoot wheel is used on the stick of an excavator. Jetting shall not be used for densification of backfill on this project. Trench backfill consisting of on-site fine-grained soil (clays) shall be moisture conditioned to about 5 percent above optimum and compacted to between 85 and 90 percent relative compaction. Where sand or well-graded gravel would be used as backfill, it shall be moisture conditioned to slightly above the optimum moisture content and compacted to at least 93 percent relative compaction.

Prior to subgrade preparation, utility trench backfill in the pavement areas shall be properly placed and compacted. The top 12 inches of soils for pavement subgrade shall be scarified, moisture conditioned to at least 3 percent above the optimum moisture content and compacted to at least 93 percent relative compaction to provide a smooth, unyielding surface. The compacted subgrade shall be non-yielding when proof-rolled with a loaded ten-wheel truck, such as a water truck or dump truck, prior to pavement construction. Subgrade soils shall be maintained in a moist and compacted condition until covered with the complete pavement section. Class 2 aggregate base shall conform to the requirements found in Caltrans Standard Specifications Section 26. The aggregate base shall be placed in thin lifts in a manner to prevent segregation, uniformly moisture conditioned to slightly above the optimum moisture content and compacted to at least 95 percent relative compaction to provide a smooth, unyielding surface. The City shall review and approve utility trenching prior to providing building permits for the project.

GEO-3 Surface Drainage and Bioretention Areas

The project applicant and/or their contractor shall design grading so that surface water shall not be allowed to collect on or adjacent to structures or pavements. Final site grading shall provide surface drainage away from structures, pavements and slabs-on-grade to reduce the percolation of water into the underlying soils. If recommended surface gradients cannot be met or where there are landscape areas around the structure that cannot drain freely through sheet flow, area drains shall be considered. Even with the recommended gradients there is a potential that ponding conditions may develop adjacent to the building over time. Where positive drainage around building cannot be established and maintained as part of the site grading design, area drains shall be provided.

Pavement areas shall be sloped and drainage gradients maintained to carry surface water off the site. Typical pavement design includes surface gradients of 2 percent in asphalt concrete pavement areas to provide surface drainage and to reduce the potential for water to penetrate into the pavement structure. Current site gradient is about 1.4 percent. The slope gradient shall not be creased, with increases for drainage where possible.

Bioretention swales and basins shall be located at least 5 feet away from foundations, pavements and exterior concrete flatwork. Bioretention swales and basins in close proximity to foundations have the potential to undermine the foundation or cause a reduction in the soil bearing capacity. Bioretention swales and basins located in close proximity to pavements and exterior concrete flatwork can cause settlement of these structures as well as cracking associated with lateral extension of these structures with lateral movement of the supporting soils. Where a 5 foot separation is not practical or possible due to site constraints, bioretention areas located within five feet of foundations, pavements or concrete flatwork shall be constructed with structural side walls capable of withstanding the loads from the adjacent improvements. In the case of a building foundation in close proximity to a bioretention area, a deepened foundation edge designed as a retaining structure may be an option. The applicant's Civil Engineer shall coordinate their work with

the foundation designer. The foundation or foundation slab edge section shall extend 6 inches below a plane projected up from the base of the bioretention basin toward the foundation at a slope of 1H:1V. Lateral earth pressures on the foundation or down-turned slab edge shall be considered by the foundation designer. Precast units may be an expedient method of installing bioretention facilities that are capable of supporting concrete flat work, roadways and foundations.

Bioretention areas located within 5 feet of building foundations or pavements shall also be lined with impermeable liners. A perforated drain pipe shall be provided within the basin when a liner is installed or where the site soils have a low permeability rate and infiltration capacity (i.e., the clay soils at the subject site). The perforated pipe shall lead to a solid-wall pipe to convey accumulated water to a suitable point of discharge. The City shall review and approve surface drainage and bioretention areas prior to providing building permits for the project.

GEO-4 Building Foundations

The project applicant and/or their contractor shall design foundation plans such that the proposed building shall be supported by conventional, relatively shallow continuous strip footings along the building perimeter and at interior load bearing walls, with spread footings for columns. All footings shall be founded on engineered fill, as described under Mitigation Measure GEO-1, or undisturbed native soils. The footings shall be designed using an allowable soil bearing pressure of 3,000 pounds per square foot (psf) for dead plus live loads. The allowable bearing pressure should be increased by one-third when considering the effects of short-term wind or seismic loads. Continuous footings shall have a minimum width of 12 inches and shall be embedded a minimum of 24 inches below the lowest adjacent exterior finish grade or pad grade for interior column footings. Continuous strip footings shall be reinforced with a minimum of two number 5 deformed reinforcing steel bars at the top and two at the bottom to provide structural continuity, to permit spanning of local irregularities in soil conditions and to aid in reducing the potential for abrupt differential settlement. The applicant's Structural Engineer shall determine the actual width and reinforcement of the foundations.

Lateral loads shall be resisted by friction between the base of the slab and the supporting subgrade, or by passive resistance acting against the vertical faces of the foundations. An allowable friction coefficient of 0.35 between the foundation and supporting subgrade shall be used. For passive resistance, an allowable equivalent fluid weight of 250 pounds per cubic foot (pcf) acting against the perimeter of the foundation shall be used for design purposes. The passive pressure would be assumed to act starting at the top of the lowest adjacent finish grade in paved areas and at a depth of 1 foot below finish grade in unpaved areas. The passive lateral load resistance value discussed above is only applicable where the concrete for the foundation is placed directly against either undisturbed or properly compacted soils.

Total post-construction settlement under static building loads shall be less than approximately 3/4-inch with differential settlement along perimeter walls that are approximately 1/2-inch in 40 feet. Should the bearing pressures exceed those discussed herein, there would be an impact on the estimated settlement.

The footing excavations shall be observed by the Geotechnical Engineer prior to placement of rebar in the footings. The soil in the footings shall not be permitted to dry out during construction. The foundation excavations shall be watered regularly during the hot summer months to prevent drying of the exposed soils in the footing excavation. Concrete for footings shall be placed against undisturbed engineered fill soils. The City shall review and approve the Structural Engineer's building plans prior to providing building permits for the project.

GEO-5 Concrete Specifications

CONCRETE FLOOR SLABS

The project applicant and/or their contractor shall design all conventionally reinforced "non-structural" interior concrete floor slabs to be supported by non-expansive fill as discussed under Mitigation Measure GEO-1. Where subgrade soils have lost moisture, the subgrade soils shall be moisture conditioned through soaking to reestablish a soil moisture content of at least 3 percent above optimum within a few days of concrete placement.

The slabs shall be designed for soils with high expansion potential. At a minimum, reinforcement consisting of No. 4 steel reinforcing bars (rebar) at 18 inches on center each way shall be used. General practice is to place the steel reinforcement at mid-height in the slab. Care must be taken during construction to keep the reinforcement from being pushed to the bottom of the slab. The actual required steel reinforcement and placement of the reinforcing steel shall be determined by the project Structural Engineer. The minimum recommended steel would not prevent the development of slab cracks but would aid in keeping the construction joints and minor cracks associated with concrete shrinkage relatively tight and in reducing the potential for differential movement between adjacent panels.

Slab control joints shall be spaced in accordance with the recommendations presented in the ACI Manual of Concrete Practice. For a 5-inch-thick slab a maximum spacing of 12.5 feet each way is recommended. In the event that control or contraction joints are to be constructed by saw cutting of the slabs, saw cuts shall be made by soff-cut sawing. Saw cuts for contraction joints are generally made within 4 to 12 hours after the initial hardening of the concrete, as required by atmospheric conditions. The contractor shall be responsible for monitoring of the concrete during initial set or hardening and to determine the optimal timing for cutting of the slabs. The use of low water/cement ratio concrete, water reducing agents, quality aggregates, limiting the amount of fine aggregates in the concrete mix and implementation of continuous curing as soon as the concrete is finished would all aid in reducing concrete shrinkage and cracking.

EXTERIOR CONCRETE FLATWORK

With the exception of slabs subject to vehicular loads, exterior concrete flatwork such as on-site sidewalks can be placed directly on the prepared subgrade. The use of aggregate base as support for concrete flatwork shall be avoided except in traffic areas where required as part of a structural section. A 6-inch section (minimum section) of Class 2 aggregate base shall be used for support of concrete slabs that would be subjected to vehicular traffic.

Where on-site exterior concrete slabs-on-grade are planned, exterior slabs-on-grade (i.e., sidewalks) shall be cast free from adjacent footings or other edge restraint. Using a strip of ½-inch thick asphalt impregnated felt or other commercially available expansion joint material between the slab edges and the adjacent structure would accomplish this. Where there is a concern that a trip hazard could develop at doorways due to differential movement between the exterior slab-on-grade and the adjoining foundation, or where concrete flatwork abuts embedded curbs, consideration shall be given to tying the slab to the foundation or curb with reinforcing steel (rebar) dowels. Frequent construction or crack control (contraction) joints shall be provided in all concrete slabs where cracking is objectionable. Deep, scored joints spaced no more than 6 feet apart shall be considered to control shrinkage cracking. Scoring of contraction joints shall extend slightly deeper than one-quarter the slab thickness to be effective. Steel reinforcement (rebar as opposed to wire mesh) shall also be considered to reduce cracking and the potential for tripping hazards to develop between

adjacent concrete panels due to expansive soil movement and/or tree roots. Minimum reinforcement consisting of No. 3 steel reinforcing bars shall be 18 inches on center each. The minimum steel would not prevent the development of slab cracks but would aid in keeping the construction joints relatively tight and in reducing the potential for differential movement between adjacent panels.

Subgrade soils shall be properly moisture conditioned during grading operations and maintained until covered by concrete or restored prior to concrete placement if necessary. The moisture content of the subgrade soils shall be checked several days prior to the placement of concrete or baserock where required. The subgrade shall be wetted or presoaked to at least 5 percent over optimum moisture content prior to placing concrete. Even with proper site preparation there would be some effects of soil moisture change on concrete flatwork. The City shall review and approve the concrete floor and flatwork plans prior to providing building permits for the project.

Significance After Mitigation

Implementation of Mitigation Measures GEO-1 through GEO-5 would reduce impacts to expansive soils to be less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

There is no sewer service available on the site, so a septic tank and leach fields would be located at the southern end of the project site. Sewage would be pumped via a small lift station from the RV waste dump station and office bathroom to the septic tank. Septic tank and leach field installation would be subject to review, approval, and permitting by CCHS prior to commencement of septic system construction. CCHS provides a Septic System Installation Checklist to guide installation of septic systems in the county (CCHS 2021). Further, Contra Costa County Ordinance No. 2018-25 amended Chapter 420-6 to include regulations regarding septic systems, which requires regular monitoring to provide maximum protection to water quality and public health by required minimum standards for the design, construction, operation, and abandonment of septic tanks (Contra Costa County 2018). Installation and use of the septic system would be required to follow CCHS guidelines and the Contra Costa County Ordinance Code and impacts to soils would be less than significant.

LESS THAN SIGNIFICANT IMPACT

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

According to the geotechnical investigation, project-related ground disturbance would be limited to cuts and fills of approximately 2 feet or less in depth (Appendix GEO). Given the nature of project construction and existing site conditions, ground disturbance (i.e., excavations) would not extend below the boundary between the upper soil layer and deposits of Quaternary old (Pleistocene) alluvial-fan and fluvial deposits (Qpaf) and thus would be unlikely to impact fossiliferous deposits. Although project construction would not be expected to uncover paleontological resources, a remote possibility for such resources to be uncovered exists, and therefore impacts could be significant.

Mitigation Measure GEO-6 would be required to avoid impacts to paleontological resources in the event of unanticipated fossil discoveries. This measure would apply to project construction and would reduce the potential for impacts to unanticipated fossils present on site by providing for the recovery, identification, and curation of paleontological resources.

Mitigation Measure

GEO-6 Unanticipated Discovery of Paleontological Resources

In the event an unanticipated fossil discovery is made during project construction, construction activity shall be halted within 50 feet of the fossil, and the applicant shall notify and retain a qualified professional paleontologist to evaluate the discovery, determine its significance, and determine if additional mitigation or treatment is warranted. Work in the area of the discovery shall resume once the find is properly documented and authorization is given to resume construction work. Any significant paleontological resources found during construction monitoring shall be prepared, identified, analyzed, and permanently curated in an approved regional museum repository under the oversight of a qualified paleontologist. The City shall review and approve the qualified paleontologist's findings once the report has been completed.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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?	☐	☐	☐	■

Overview of Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. Climate change is the result of numerous, cumulative sources of GHG emissions contributing to the "greenhouse effect," a natural occurrence which takes place in Earth's atmosphere and helps regulate the temperature of the planet. The majority of radiation from the sun hits Earth's surface and warms it. The surface, in turn, radiates heat back towards the atmosphere in the form of infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping into space and re-radiate it in all directions.

GHG emissions occur both naturally and as a result of human activities, such as fossil fuel burning, decomposition of landfill wastes, raising livestock, deforestation, and some agricultural practices. GHGs produced by human activities include carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (Intergovernmental Panel on Climate Change 2021).[2]

[2] The Intergovernmental Panel on Climate Change's (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change's (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

Regulatory Framework

California implemented Assembly Bill (AB) 32, the "California Global Warming Solutions Act of 2006." AB 32 required the reduction of statewide GHG emissions to 1990 emissions levels (essentially a 15 percent reduction below 2005 emission levels) by 2020 and the adoption of rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. On September 8, 2016, the Governor signed Senate Bill 32 into law, extending AB 32 by requiring the State to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program and the Low Carbon Fuel Standard, and implementation of recently adopted policies and legislation, such as SB 1383 (aimed at reducing short-lived climate pollutants including methane, hydrofluorocarbon gases, and anthropogenic black carbon) and SB 100 (discussed further below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends local governments adopt policies and locally appropriate quantitative thresholds consistent with a statewide per capita goal of six metric tons (MT) of CO_2e by 2030 and two MT of CO_2e by 2050 (CARB 2017a).

Other relevant state and local laws and regulations include:

- **SB 375:** The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. Metropolitan Planning Organizations are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the Metropolitan Planning Organization's Regional Transportation Plan (RTP). On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The regional targets for the Metropolitan Transportation Commission (MTC), which includes Contra Costa County, are a reduction of 10 percent by 2020 and 19 percent by 2035 as compared to 2005 levels (CARB 2017b).
- **SB 100:** Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.
- **California Building Standards Code (California Code of Regulations Title 24):** The California Building Standards Code consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2019 Title 24 standards. Part 6 is the Building Energy Efficiency Standards, which establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. Part 12 is the California Green Building Standards Code (CALGreen), which includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures.

Significance Thresholds

Individual projects do not generate sufficient GHG emissions to influence climate change directly. However, physical changes caused by a project can contribute incrementally to significant cumulative effects, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines Section 15064[h][1]).

In the 2017 BAAQMD CEQA Air Quality Guidelines, the BAAQMD outlines an approach to determine the significance of projects. The BAAQMD recommends that lead agencies determine appropriate GHG emissions thresholds of significance based on substantial evidence in the record. 2017 BAAQMD CEQA Air Quality Guidelines establish the following significance thresholds for operational GHG emissions from land use development projects (BAAQMD 2017b):

- Compliance with a qualified GHG reduction strategy
- Annual emissions less than 1,100 MT of CO_2e per year
- Annual emissions less than 4.6 MT of CO_2e per service population (residents and employees) per year

The BAAQMD mass emissions threshold of 1,100 MT of CO_2e per year was designed to capture 90 percent of all emissions associated with projects in the Basin and require implementation of mitigation so that a considerable reduction in emissions from new projects would be achieved. According to the California Air Pollution Control Officers Association white paper *CEQA & Climate Change*, a quantitative threshold based on a 90 percent market capture rate is generally consistent with AB 32 (California Air Pollution Control Officers Association 2008). SB 32, codified in 2016, sets a more stringent emission reduction target of 40 percent below the 1990 level by 2030. Because BAAQMD has not adopted a threshold for 2030 yet, this analysis uses a bright-line threshold of 660 MT of CO_2e per year (equivalent to a 40 percent reduction of the 1,100 MT of CO_2e per year threshold based on the State's 2030 target).

The BAAQMD has not established a quantitative significance threshold for evaluating construction-related emissions, but it does recommend quantifying and disclosing construction-generated GHG emissions. As there is no way of knowing the lifespan of the proposed project, the total emissions generated during construction were amortized over 30 years and added to the operational emissions, and assessed against the BAAQMD's significance thresholds for operational GHG emissions.

Methodology

GHG emissions associated with project construction and operation were estimated using CalEEMod, version 2020.4.0, with the assumptions described under Section 3, *Air Quality*, and Appendix AQ, in addition to trip generation rates and VMT estimates provided in Appendix TRA, and the following:

- **Energy Reductions.** The CEC's Building Energy Efficiency Standards describes numerous requirements to which new development must adhere to be compliant with the 2019 Title 24 standards. Additionally, the project would generate enough solar power to offset its energy use and supply energy for approximately 600 regional homes.

- **Water Usage.** CalEEMod does not incorporate water use reductions achieved by CALGreen (Part 11 of Title 24). New development would be subject to CALGreen, which requires a 20 percent increase in indoor water use efficiency and use of indoor water-efficient irrigation systems. Thus, in order to account for compliance with CALGreen, a 20 percent reduction in indoor water use and the use of water-efficient irrigation systems were included in the water consumption calculations for new development.

Impact Analysis

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Project construction and operation would generate GHG emissions. Calculations of CO_2, methane, and nitrous oxide emissions are provided to identify the magnitude of potential project effects.

Project construction would generate temporary GHG emissions primarily as a result of operation of construction equipment on-site as well as from vehicles transporting construction workers to and from the project site and heavy trucks to transport building materials and soil export. Project construction would generate an estimated total of 423 MT of CO_2e, all of which would occur in 2022. Even without amortizing construction emissions, the 660 MT of CO_2e threshold would not be exceeded.

Project operation would generate GHG emissions associated with area sources (e.g., fireplaces, landscape maintenance), energy and water usage, vehicle trips, and wastewater and solid waste generation. As shown in Table 13, annual project operational emissions would total approximately 76 MT of CO_2e per year, or less than 0.1 MT of CO_2e per service person per year, which would not exceed the locally-applicable, project-specific threshold of 3.2 MT of CO_2e per year. Therefore, impacts would be less than significant.

Table 13 Annual Operational GHG Emissions

Emission Source	Annual Emissions (MT of CO_2e per year)
Operational	**76**
Area	<0.1
Energy	13
Mobile	62
Solid Waste	1
Water	1
Service Population (Residents + Employees)	74,498
Emissions per Service Person	**<0.1**
Threshold	**3.2**
Threshold Exceeded?	**No**

MT = metric tons; CO_2e = carbon dioxide equivalents
Notes: Emissions modeling was completed using CalEEMod. See Appendix AQ for modeling results.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Several plans and policies have been adopted to reduce GHG emissions in the Bay Area region, including the State's 2017 Scoping Plan and BAAQMD's Climate Protection Planning Program. The project's consistency with the 2017 Scoping Plan is discussed in the following subsection. The City's General Plan does not contain policies relating GHG emissions, but a Sustainability Plan is being drafted and would include policies related to emissions reductions. According to the City's GHG Emission Inventories (City of Pittsburg 2019), community wide emissions have reduced 9 percent from approximately 471,000 MT CO_2e in 2005 to 428,500 MT CO_2e in 2016. Further, emissions per capita has reduced 21 percent from 5.2 MT CO_2e per capita to 4.2 MT CO_2e per capita in the same time period.

2017 Scoping Plan

The project would be consistent with CARB's 2017 Scoping Plan goals through project design, which includes complying with the latest Title 24 Green Building Code and Building Efficiency Energy Standards and creating its own energy, installing energy-efficient LED lighting, water-efficient faucets and toilets, and water efficient landscaping and irrigation. As discussed in Section 6, *Energy*, the project would generate its own renewable energy through on-site solar panels and would exceed Title 24 Green Building Code and Building Efficiency Energy Standards. Further, the project would produce and sell solar energy to PG&E or MCE to be used regionally, which would support SB 100 targets. Therefore, the project would be consistent with the 2017 Scoping Plan.

NO IMPACT

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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 0.25 mile of an existing or proposed school?	☐	☐	■	☐
d. Be located on a site that is included on a list of hazardous material 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 in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	■	☐
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?	☐	☐	☐	■

Setting

There are 55 listings on the EnviroStor database with a Pittsburg address. Of the 55 listings, eight are listed as corrective action, 13 as evaluation, one as military evaluation, eight as non-operating, one as operating, one as post-closure, one as school cleanup, eight as school investigation, four as state response, three as tiered permit, and seven as voluntary cleanup (City of Pittsburg 2019a). The project site is not identified as any of these sites on the EnviroStor databases.

In May 2019, a GeoTracker search was performed to identify any known or suspected sources of environmental hazards within the City of Pittsburg (City of Pittsburg 2019a). There were 56 locations with a Pittsburg address listed in the GeoTracker database for Leaking Underground Storage Tanks (LUST). Fifty-one of the locations have undergone LUST cleanup and the State has closed the case. There are five locations in Pittsburg with an open case (City of Pittsburg 2019a). The project site was not identified as a listed location containing a LUST. A subsequent GeoTracker search in October 2021 yielded no new listing in Pittsburg with an open LUST case.

The following databases were checked, pursuant to Government Code Section 95962.5, on October 28, 2021 for known hazardous materials contamination at the project site:

- **United States Environmental Protection Agency**
  - Comprehensive Environmental Response, Compensation, and Liability Information System/Superfund Enterprise Management System/ Envirofacts database search
- **State Water Resources Control Board**
  - GeoTracker search for leaking USTs and other cleanup sites
- **California Department of Toxic Substances Control**
  - EnviroStor search for hazardous facilities or known contamination sites
  - Hazardous Waste and Substances Site List (Cortese)

Regulatory Setting

Department of Toxic Substances Control

As a department of the California Environmental Protection Agency, the Department of Toxic Substances Control (DTSC) is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of Resource Conservation and Recovery Act (RCRA) and the California Health and Safety Code.

DTSC also administers the California Hazardous Waste Control Law to regulate hazardous wastes. While the California Hazardous Waste Control Law is generally more stringent than Resource Conservation and Recovery Act, until the USEPA approves the California program, both state and federal laws apply in California. The California Hazardous Waste Control Law lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

Government Code Section 65962.5 requires the DTSC, the State Department of Health Services, the SWRCB, and CalRecycle to compile and annually update lists of hazardous waste sites and land designated as hazardous waste sites throughout the state. The Secretary for Environmental Protection consolidates the information submitted by these agencies and distributes it to each city and county where sites on the lists are located. Before the lead agency accepts an application for a development project as complete, the applicant must consult these lists to determine if the site at issue is included.

If soil is excavated from a site containing hazardous materials, it is considered a hazardous waste if it exceeds specific criteria in Title 22 of the CCR. Remediation of hazardous wastes found at a site may be required if excavation of these materials is performed, or if certain other soil disturbing activities would occur. Even if soil or groundwater at a contaminated site does not have the characteristics required to be defined as hazardous waste, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking jurisdiction.

Storage of hazardous materials at or above State-defined thresholds makes a facility subject to a Hazardous Materials Business Plan (HMBP). The Contra Costa Health Services – Hazardous Materials Programs is responsible for the HMBP program for the City of Pittsburg (Contra Costa Health Services 2020). A HMBP must be submitted if these thresholds for hazardous materials are met.

Government Code Section 65962.5 (Cortese List)

Section 65962.5 of the Government Code requires CalEPA to develop and update a list of hazardous waste and substances sites, known as the Cortese List. The Cortese List is used by the State, local agencies, and developers to comply with CEQA requirements. The Cortese List includes hazardous substance release sites identified by DTSC, SWRCB, and CalRecycle.

Impact Analysis

a. Would the project create a significant hazard to the public or the environment through 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?

Project construction would involve the transport, use, or disposal of hazardous materials (e.g., fuel and engine fluids for equipment, paint, and asphalt) but would not be expected to create conditions that could lead to the release of hazardous substances. Construction would be required to adhere to RCRA.

During operation, users of the storage facility would be prohibited from storing hazardous materials in their boats and RVs pursuant to lease signed agreements.

Compliance with applicable state and local regulations would reduce potential impacts associated with the routine transport, use, storage, or disposal of hazardous materials to less than significant levels.

LESS THAN SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

The closest school, Turner Elementary School, is approximately 0.5 mile south of the project site. Though potentially hazardous materials such as fuels, lubricants, solvents, and oils could be used during project construction, the transport, use and storage of any and all hazardous materials would be conducted in accordance with all applicable State and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Material Management Act, and the CCR, Title 22. Therefore, impacts would be less than significant

LESS THAN SIGNIFICANT IMPACT

d. Would the project be located on a site that is included on a list of hazardous material 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?

As noted under *Setting* in Section 9, *Hazards and Hazardous Materials*, the site has not been included on a list of hazardous materials sites. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The nearest airport to the project site is Buchanan Field Airport, which is located approximately 11.5 miles southwest of the project site. The City of Pittsburg is outside the Airport Influence Area for Buchanan Field Airport, as mapped in the Contra Costa County Airport Land Use Compatibility Plan (Contra Costa County Airport Land Use Commission 2000). Therefore, the project would be located outside the scope of an airport land use plan and more than 2 miles from the nearest airport, and it would not result in a safety hazard or excessive noise from airport activity. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The Pittsburg City Council adopted an Emergency Operations Plan (EOP) in December 2018 as a foundational document for the City's emergency management program (City of Pittsburg 2018). The EOP provides guidance to City staff to promote effective response and recovery operations in the event of an emergency.

The proposed project would not include any characteristics (e.g., permanent road closures) that would physically impair or otherwise interfere with emergency response or evacuation in the project vicinity. The City's standard conditions of approval related to construction staging and parking would ensure that potential temporary road closures during construction would not impair or otherwise interference with emergency response or evacuation. The proposed project would be required to adhere to current and future requirements by the City of Pittsburg's EOP once operational. Accordingly, potential impacts related to interference with an adopted emergency response plan or emergency evacuation plan during operations would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

The project site is in an urbanized area surrounded by commercial and industrial development. No adjacent wildlands or densely vegetated areas are located nearby that would represent a significant fire hazard. Additionally, the project does not fall within a Fire Hazard Severity Zone or Very High Fire Hazard Severity Zone for wildland fires (CAL FIRE 2021). Therefore, the project would not expose people or structures to significant hazards related to wildland fires and there would be no impacts.

NO IMPACT

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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 ground water 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 off-site;	☐	☐	■	☐
(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?	☐	☐	■	☐

Information in this section is based on Stormwater Control Plan by Robert A. Karn & Associates, Inc. last revised in October 2021, which is included as Appendix SWP.

Setting

The project site is approximately 12.5 acres and has an approximate elevation of 40 feet (USGS 2018). Site topography indicates a 1 to 2 percent northeasterly slope running towards the Contra Costa Canal Spillway and roadway. Water drains into the Contra Costa Canal Spillway along the eastern border of the project site. There is an existing storm drain system north of the project site on Pittsburg-Antioch Highway. The New York Slough is located approximately 1 mile north of the project site. The City of Pittsburg receives approximately 14 inches of rain annually, with rainfall concentrated in the winter months (CEC 2021). Storm runoff dissipates into soils or runs off into the Contra Costa Canal Spillway or roadway.

The project site overlies the Pittsburg Plain groundwater basin (City of Pittsburg 2021a). The groundwater depth is approximately 35 feet below ground surface (Appendix GEO). The Pittsburg Plain groundwater basin extends to the south inland from Suisun Bay to the north, between 1 and 3 miles and is fed by two major drainage basins, Kirker Creek and Willow Creek. The Pittsburg Plain groundwater basin is not considered critically over drafted by California Department of Water Resources (DWR), nor is it at risk of overdraft conditions considering that groundwater levels have remained fairly stable (City of Pittsburg 2021a). Therefore, no Groundwater Sustainability Agency needs to prepare a Groundwater Sustainability Plan for the Pittsburg Plain groundwater basin. Groundwater use in the City increased in 2020 to 1,480 acre-feet, a 28 percent increase from 2019, but only a 7 percent increase over the average from 2016 to 2020 (City of Pittsburg 2021a). Groundwater levels have remained stable.

Regulatory Setting

National Pollutant Discharge Elimination System

The federal government administers the NPDES permit program, which regulates discharges into surface waters under the Clean Water Act (CWA). The primary regulatory control relevant to the protection of water quality is the NPDES permit administered by the State Water Resources Control Board, which establishes requirements prescribing the quality of point sources of discharge and water quality objectives. These objectives are established based on the designated beneficial uses (e.g., water supply, recreation, and habitat) for a particular surface waterbody. The NPDES permits are issued to point source dischargers of pollutants to surface waters pursuant to Water Code Chapter 5.5, which implements the federal CWA. Examples include, but are not limited to, public wastewater treatment facilities, industries, power plants, and groundwater cleanup programs discharging to surface waters (State Water Resources Control, Title 23, Chapter 9, Section 2200). The Regional Water Quality Control Board (RWQCB) establishes and regulates discharge limits under the NPDES permits.

Clean Water Act

Congress enacted the CWA, formerly the Federal Water Pollution Control Act of 1972, with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the U.S. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and non-point source discharges to surface water. The NPDES permit process regulates those discharges (CWA Section 402). NPDES permitting authority is

administered by the SWRCB and its nine RWQCBs. The project site is in a watershed administered by the San Francisco Bay RWQCB (San Francisco Bay RWQCB 2017).

California Porter Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act of 1967 requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The criteria for state waters in the region are contained in the *Water Quality Objectives* Chapter of the Basin Plan for the San Francisco Bay RWQCB (San Francisco Bay RWQCB 2017). The Water Quality Control Plan, or Basin Plan, protects designated beneficial uses of State waters through the issuance of Waste Discharge Requirements and through the development of TMDL. Anyone proposing to discharge waste that could affect the quality of the waters of the State must make a report of the waste discharge to the RWQCB or SWRCB, as appropriate, in compliance with Porter-Cologne Water Quality Control Act.

Contra Costa Clean Water Program

The City of Pittsburg is a contributing city to the Contra Costa Clean Water Program (CCCWP), which was established in 1991 in response to federal stormwater NPDES regulations. Per the CCCWP Stormwater C.3 Guidebook (CCCWP 2017), projects an acre or larger are required to submit a Stormwater Control Plan and incorporate Low Impact Designs based on the Low Development Site Design Guide for hydromodification (flow control). The plan must implement a combination of two or more of the following strategies: (1) preserve natural drainage features of the site; (2) implement pervious surfaces; (3) disperse runoff from some amount of roof or paved area to a vegetated area; (4) drain impervious surfaces to engineered integrated management practices.

San Francisco Bay Regional Water Quality Control Board

The City of Pittsburg is under the jurisdiction of RWQCB Region 2, the San Francisco Bay RWQCB. The San Francisco Bay RWQCB provides permits for projects that may affect surface waters and groundwater locally and is responsible for preparing the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The Basin Plan designates beneficial uses of water in the region and establishes narrative and numerical water quality objectives. The Basin Plan serves as the basis for the San Francisco Bay RWQCB's regulatory programs and incorporates an implementation plan to ensure water quality objectives are met.

City of Pittsburg

The City of Pittsburg is subject to stormwater requirements pursuant to the Municipal Regional Stormwater NPDES Permit (Order Number R2-2015-0049) for the San Francisco Bay Area. This permit is intended to reduce the discharge of pollutants in the City's municipal separate storm sewer system (MS4). The MS4 permit was issued jointly to the City and other local agencies in the regional Contra Costa Clean Water Program (California Regional Water Quality Control Board 2015). To achieve compliance with the regional program, and thus with the conditions of the most recently issued MS4 permit, the City has adopted local regulations. Specifically, Chapter 13.28 of the PMC establishes discharge requirements for all water entering the storm drain system generated on developed and undeveloped lands lying within City limits (City of Pittsburg 2019b).

Under PMC Section 13.28.090, the City requires BMPs to control the volume, rate, and potential pollutant load of stormwater runoff from new development and redevelopment projects as required by the City's MS4 permit (Pittsburg 2019b). Such BMPs include, where appropriate, Low Impact Development techniques to be implemented at New Development and Significant Redevelopment project sites. These techniques include infiltrating, storing, detaining, evapotranspiring (the release of water vapor from soil, other surfaces, and plants), and biotreating stormwater runoff close to its source (California Regional Water Quality Control Board 2015).

Impact Analysis

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

c.(i) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

c.(ii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

c.(iii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would 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?

Project construction may impact water quality through erosion or through debris carried in runoff and thus would be subject to stormwater requirements under the Municipal Regional Stormwater NPDES Permit (Order Number R2-2015-0049) for the San Francisco Bay Area.

The proposed project would create approximately 135,000 square feet of impervious concrete surfaces, underneath an approximately 182,000 square foot discontinuous impervious solar canopy, which would exceed the 10,000 square feet impervious surface threshold. Therefore, the project would be required to implement BMPs under the MS4 permit. Two bioretention areas would be constructed to satisfy the BMP requirement, as described under *Project Description*. The bioretention areas would serve as flood mitigation, as they would allow substantial water filtration. Further, the bioretention areas would filter out debris and pollutants and allow stormwater runoff to replenish wetlands. And, as discussed under impacts c(iv) and d, the project site is not within a 100-year floodplain.

In addition, the project would involve disturbance of 12.5 acres, and thus would be required to comply with NPDES Construction General Permit Requirements, which would limit peak post-project runoff levels to pre-project levels. To comply with the Construction General Permit, the project applicant would have to prepare a SWPPP, which includes BMPs to control erosion and sediment. Construction BMPs could include silt fencing, fiber rolls, stabilized construction entrances, stockpile management, and solid waste management. Post-construction stormwater performance standards would also be required.

Compliance with existing regulatory requirements would ensure that the project would not violate water quality standards or waste discharge requirements and would not create substantial runoff water, otherwise degrade water quality, result in substantial erosion, flooding, or added polluted runoff. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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?

Water for project construction and operation would be drawn from an on-site well, because there is no municipal water service to the site. Groundwater drawn for the proposed project would not be drawn from a municipal well but would utilize the same underlying groundwater basin. The well would be constructed in accordance with Contra Costa County Ordinance Code Chapter 414-4, which codifies requirements for wells, including appropriate permitting from the State Department of Health Services for potable water. This Ordinance was adopted into PMC Chapter 12.40 and is discussed further under Section 19, Utilities and Service Systems. The well water must also be protected from contamination in accordance with Section 414-4.807 of the Contra Costa County Code, which includes adequately chlorinating the well following construction.

Project construction would require minimal non-potable water for dust mitigation. Project operation would use water for the office bathroom, the ice machine, and solar panel cleaning one or two times per year. Recycled water would be used for cleaning of the on-site solar panels. Indoor water use would conservatively be 176,312 gallons per year (483 gallons per day) and outdoor water use would conservatively be 135,078 gallons per year (370 gallons per day) (Appendix AQ). This amount of water use would not substantially decrease groundwater supplies. The project would increase the amount of impervious surface, as discussed under criteria (a), but the subsequent runoff would be routed to the two onsite bioretention treatment areas. Runoff in the bioretention areas would irrigate the seasonal wetland and percolate back to the groundwater basin. Therefore, the project would not impede with sustainable groundwater management and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c.(iv) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

The proposed project would add new impervious surfaces, both asphalt and the solar canopy. The project's stormwater control plan includes integrated management practices that would ensure that there would be no significant impediment or redirection of flood flows (Appendix SWP). Therefore, project implementation would not impede or redirect flood flows.

According to the Federal Emergency Management Agency Flood Insurance Rate Map, the project site is located in Zone X, which is characterized as an area of minimal flood hazard and having a less than 0.2 percent annual chance to be inundated by flood waters as a result of a storm event (Map #06013C0138G, September 30, 2015) (Federal Emergency Management Agency 2015). According to

the California Governor's Office of Emergency Services (Cal OES) MyHazards online database, the project site is not located in a 100-year floodplain (Cal OES 2015).

The City is not at risk from tsunamis (City of Pittsburg 2019a; see Table 4.2-4). The project site is located approximately 1 mile south of New York Slough. The nearest body of water that could experience seiche (water level oscillations in an enclosed or partially enclosed body of water) is the New York Slough. No other large bodies of water with the potential to inundate the project site by a seiche are located near the site. Therefore, the project would not result in the risk of release of pollutants due to inundation by a tsunami, seiche, or flooding. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The San Francisco Bay RWQCB has designated water quality objectives in the county in the *Water Quality Control Plan for the San Francisco Bay Region* (Basin Plan) (San Francisco Bay RWQCB 2017). As discussed under criteria (a) and (b), the project would be required to comply with NPDES requirements and PMC Chapter 13.28. As discussed under criteria (a) and (b), the project would not use substantial groundwater, violate water quality standards, or degrade water quality during construction or operation. The septic system would be required to be installed and maintained in accordance with CCHS requirements and would not impact groundwater quality.

The on-site well, discussed under criteria (b), would be designed in accordance with Contra Costa County Ordinance Code Chapter 414-4 and installed pending permitting from the State Department of Health Services. The well would be constructed at a depth of at least 35 feet to reach the underlying groundwater from the Pittsburg Plain groundwater basin. The final design and depth of the well would be subject to site-specific observations made during a test hole or during the well drilling (University of California 2003). Construction and operation of the well in accordance with Contra Costa County code would prevent any contamination of groundwater and therefore protect water quality.

Additionally, adherence to state and local policies would further maintain water quality. Therefore, the proposed project would not interfere with water quality control plans or sustainable groundwater management plans. Impacts would be less than significant.

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?	☐	☐	■	☐

Setting

As stated in the *Project Description*, the project site currently has a land use designation of CS and has a CS zoning designation.

The CS land use designation provides for automobile repair, contractor's services, and other heavy maintenance activities. Permitted land uses in CS zones include residential, commercial, industrial, and governmental, pending additional use regulations or temporary activity permits for various subtypes of land uses within those broader land use categories.

Impact Analysis

a. Would the project physically divide an established community?

The project would be constructed in a fully urbanized area of Pittsburg. The project would not separate connected neighborhoods or land uses from each other. No new roads, linear infrastructure, or other development features are proposed that would divide an established community or limit movement, travel, or social interaction between established land uses. No impact would occur.

NO IMPACT

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?

The project site is located entirely in the City of Pittsburg. The project would be consistent with the General Plan designation of CS, since the General Plan lists storage and similar uses as an allowable use with a use permit. PMC Chapter 18.52 dictates that CS zones should be used for retail and service businesses opportunities between commercial and industrial areas. The project site is surrounded by commercial and industrial uses. Further, PMC lists boat and marine vessel storage and vehicle storage as allowable, pending a use permit. According to PMC Chapter 18.28, a use permit may be granted by the Zoning Administrator or Planning Commission if the use complies

with the General Plan, protects public health, safety, and general welfare, and ensures that the operation is compatible with existing and potential uses in the surrounding area. The project would also be required to comply with the City's Design Guidelines for and development regulations for the CS zoning designation as outlined in PMC Chapter 18.52 and discussed in Section 1, *Aesthetics*. Therefore, this impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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?	☐	☐	☐	■

Setting

Extractive resources known to exist in Contra Costa County include crushed rock near Mt. Zion, on the north side of Mt. Diablo, in the Concord area; shale in the Port Costa area; and sand and sandstone deposits, mined from several locations. Resources are mostly focused in the Byron area of southeast County (Contra Costa County 2005).

Regulatory Setting

Surface Mining and Reclamation Act of 1975

Pursuant to the mandate of the Surface Mining and Reclamation Act of 1975, the State Mining and Geology Board requires all cities to incorporate into their general plans mapped mineral resources designations approved by the State Mining and Geology Board. Some mineral resources can be found within Contra Costa County. However, there are no mineral resources in the Pittsburg area subject to the Surface Mining and Reclamation Act (Contra Costa County 2005).

Impact Analysis

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?

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?

There are no significant mineral deposits or active mining operations within the City of Pittsburg (City of Pittsburg 2019a). Therefore, the project would not result in the loss of availability of a known mineral resource or a locally important mineral resource recovery site. No impact would occur.

NO IMPACT

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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 two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	■	☐

Overview of Noise and Vibration

Noise

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

HUMAN PERCEPTION OF SOUND

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response. Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Caltrans 2013).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not "sound twice as loud" as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud (10.5 times the sound energy) (Caltrans 2013).

SOUND PROPAGATION AND SHIELDING

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in the noise level as the distance from the source increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line), the path the sound will travel, site conditions, and obstructions.

Sound levels are described as either a "sound power level" or a "sound pressure level," which are two distinct characteristics of sound. Both share the same unit of measurement, the dB. However, sound power (expressed as L_{pw}) is the energy converted into sound by the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers, such as an eardrum or microphone, which is the sound pressure level. Sound measurement instruments only measure sound pressure, and noise level limits are typically expressed as sound pressure levels.

Noise levels from a point source (e.g., construction, industrial machinery, air conditioning units) typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance. Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense woods, and man-made features, such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce exposure to noise as well. The FHWA's guidance indicates that modern building construction generally provides an exterior-to-interior noise level reduction of 10 dBA with open windows and an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows (FHWA 2011).

DESCRIPTORS

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. The noise descriptors used for this study are the equivalent noise level (L_{eq}), Day-Night Average Level (DNL; may also be symbolized as L_{dn}), and the community noise equivalent level (CNEL; may also be symbolized as L_{den}).

L_{eq} is one of the most frequently used noise metrics; it considers both duration and sound power level. The L_{eq} is defined as the single steady-state A-weighted sound level equal to the average sound energy over a time period. When no time period is specified, a 1-hour period is assumed. The L_{max} is the highest noise level within the sampling period, and the L_{min} is the lowest noise level within the measuring period. Normal conversational levels are in the 60 to 65-dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (DNL or L_{DN}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.). Community noise can also be measured using Community Noise Equivalent Level (CNEL or L_{DEN}), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013).[3] The relationship between the peak-hour L_{eq} value and the L_{DN}/CNEL depends on the distribution of noise during the day, evening, and night; however noise levels described by L_{DN} and CNEL usually differ by 1 dBA or less. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 CNEL, while areas near arterial streets are in the 50 to 60+ CNEL range (FTA 2018).

Groundborne Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent buildings or structures and vibration energy may propagate through the buildings or structures. Vibration may be felt, may manifest as an audible low-frequency rumbling noise (referred to as groundborne noise), and may cause windows, items on shelves, and pictures on walls to rattle. Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants at vibration-sensitive land uses and may cause structural damage.

Typically, ground-borne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used as it corresponds to the stresses that are experienced by buildings (Caltrans 2020).

High levels of groundborne vibration may cause damage to nearby building or structures; at lower levels, groundborne vibration may cause minor cosmetic (i.e. non-structural damage) such as cracks. These vibration levels are nearly exclusively associated with high impact activities such as blasting, pile-driving, vibratory compaction, demolition, drilling, or excavation. The American Association of State Highway and Transportation Officials (AASHTO) has determined vibration levels with potential to damage nearby buildings and structures; these levels are identified in Table 14.

Table 14 AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	Limiting Velocity (in/sec)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5

Source: Caltrans 2020

[3] Because DNL and CNEL are typically used to assess human exposure to noise, the use of A-weighted sound pressure level (dBA) is implicit. Therefore, when expressing noise levels in terms of DNL or CNEL, the dBA unit is not included.

Numerous studies have been conducted to characterize the human response to vibration. The vibration annoyance potential criteria recommended for use by Caltrans, which are based on the general human response to different levels of groundborne vibration velocity levels, are described in Table 15.

Table 15 Vibration Annoyance Potential Criteria

	Vibration Level (in/sec PPV)	
Human Response	Transient Sources	Continuous/ Frequent Intermittent Sources[1]
Severe	2.0	0.4
Strongly perceptible	0.9	0.10
Distinctly perceptible	0.25	0.04
Barely perceptible	0.04	0.01

in/sec = inches per second; PPV = peak particle velocity

[1] Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans 2020

Regulatory Setting

City of Pittsburg General Plan

The City of Pittsburg Noise Element contains goals and policies that are designed to include noise control in the planning process in order to maintain compatible land uses with acceptable environmental noise levels and protect Pittsburg residents from excessive noise. The Noise Element establishes the following goals and policies that would apply to the proposed project:

Policy 12-P-1 As part of development review, use Figure 12-3 in the General Plan (Table 16 of this document) to determine acceptable uses and installation requirements in noise-impacted areas.

Policy 12-P-3 Support implementation of State legislation that requires reduction of noise from motorcycles, automobiles, trucks, trains, and aircraft.

Policy 12-P-4 Require noise attenuation programs for new development exposed to noise above normally acceptable levels. Encourage noise attenuation programs that avoid visible sound walls.

Policy 12-P-7 Require the control of noise at the source through site design, building design, landscaping, hours of operation, and other techniques, for new development deemed to be noise generators.

Policy 12-P-8 Develop noise attenuation programs for mitigation of noise adjacent to existing residential areas, including such measures as wider setbacks, intense landscaping, hours of operation, and other techniques, for new development deemed to be noise generators.

Policy 12-P-9 Limit generation of loud noises on construction sites adjacent to existing development to normal business hours between 8:00 a.m. and 5:00 p.m.

Policy 12-P-10 Reduce the impact of truck traffic noise on residential areas by limiting such traffic to appropriate truck routes. Consider methods to restrict truck travel times in sensitive areas.

Table 16 Pittsburg Noise and Land Use Compatibility Matrix Table

Land Use Category	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Residential-Single family	50-60	55-70	70-75	75-85
Residential- Multi-family	50-65	60-70	70-75	75-85
Transient Lodging, Motels, Hotels	50-65	65-70	70-80	80-85
School, Libraries, Churches, Hospitals*, Nursing Homes	50-70	60-70	70-80	80-85
Auditoriums, Concert Halls, Amphitheaters	NA	55-70	70-85	NA
Sports Arena, Outdoor Spectator Sports	NA	50-75	70-85	NA
Playgrounds, Parks	50-70	NA	67.5-75	77.5-85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-75	NA	70-80	80-85
Office Buildings, Business Commercial and Professional	50-70	67.5-77.5	75-85	NA
Industrial, Manufacturing	50-75	70-80	75-85	NA

[1] Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

[2] Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.

[3] Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements shall be made and needed noise insulation features shall be included in the design.

[4] Clearly Unacceptable: New construction or development should generally not be undertaken.

* Because hospitals are often designed and constructed with high noise insulation properties, it is possible for them to be satisfactorily located in noisier areas.

Source: City of Pittsburg 2001

City of Pittsburg Municipal Code (PMC)

The City's Municipal Code regulates noise in the city of Pittsburg. In PMC Section 9.44.010 prohibits the use of pile drivers, pneumatic hammers, and similar equipment between the hours of 10:00 p.m. and 7:00 a.m. The City's Building and Construction Ordinance (Section 15.88.060.A.5) also prohibits grading noise, including warming up equipment motors, within 1,000 feet of a residence between the hours of 5:30 p.m. and 7 a.m. on weekdays, unless otherwise approved by the City Engineer. However, PMC does not establish numeric standards for construction noise.

Noise Level Increases Over Ambient Noise Levels

The operational and construction noise limits used in this analysis are set at reasonable levels at which a substantial noise level increase as compared to ambient noise levels would occur. Operational noise limits are lower than construction noise limits to account for the fact that permanent noise level increases associated with continuous operational noise sources typically

result in adverse community reaction at lower magnitudes of increase than temporary noise level increases associated with construction activities that occur during daytime hours and do not affect sleep. Furthermore, these noise limits are tailored to specific land uses; for example, the noise limits for residential land uses are lower than those for commercial land uses. The difference in noise limits for each land use indicates that the noise limits inherently account for typical ambient noise levels associated with each land use. Therefore, an increase in ambient noise levels that exceeds these absolute limits would also be considered a substantial increase above ambient noise levels. As such, a separate evaluation of the magnitude of noise level increases over ambient noise levels would not provide additional analytical information regarding noise impacts and therefore is not included in this analysis.

Impact Analysis

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?

The proposed project would generate temporary noise increases during construction and long-term increases during operation.

Construction

In the absence of applicable local noise level limits, this analysis references guidance from the FTA's *Transit Noise and Vibration Impact Assessment Manual* to establish a quantified threshold against which to assess the impact of construction noise (FTA 2018); FTA recommends that reasonable noise criteria may include those shown in Table 17. Construction would occur only during allowable hours under PMC Section 15.88; therefore, daytime noise criteria would be appropriate.

Table 17 Construction Noise Criteria

Land Use	Daytime L_{eq} (8-hour)	Nighttime L_{eq} (8-hour)
Residential	80	70
Commercial	85	85
Industrial	90	90

Source: FTA 2018.

Construction activity would result in temporary noise in the project site vicinity, exposing surrounding nearby receivers to increased noise levels. Project construction noise would be generated by heavy-duty diesel construction equipment used for earthworks, loading, unloading, and placing materials and paving. Typical heavy construction equipment during project grading could include dozers, loaders, graders, and dump trucks. It is assumed that diesel engines would power all construction equipment. Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some would have higher continuous noise levels than others, and some have high-impact noise levels. Construction noise would typically be higher during the more equipment-intensive phases of initial construction (i.e., site preparation and grading) and would be lower during the later construction phases (i.e., building construction and paving).

Equipment goes through varying load cycles and is operated intermittently to allow for non-equipment tasks such as measurement. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle of the activity to determine the L_{eq} of the operation (FTA 2018). Reference noise levels for heavy-duty construction equipment were estimated using the FHWA Roadway Construction Noise Model (RCNM) (FHWA 2006). Typical construction noise levels from the FTA are shown in Table 18.

Table 18 Typical Construction Noise Levels

Equipment	25 feet from Source (dBA L_{eq})	50 feet from Source (dBA L_{eq})	100 feet from Source (dBA L_{eq})	200 feet from Source (dBA L_{eq})	500 feet from Source (dBA L_{eq})
Air Compressor	86	80	74	68	60
Backhoe	86	80	74	68	60
Concrete Mixer	91	85	79	73	65
Grader	91	85	79	73	65
Jack Hammer	94	88	82	76	68
Paver	91	85	79	73	65
Roller	91	85	79	73	65
Saw	82	76	70	64	56
Scraper	91	85	79	73	65
Truck	90	84	78	72	64

Source: Noise level at 50 feet from Federal Transit Administration, 2018. Noise levels at 25 feet, 100 feet, 200 feet, and 500 feet were extrapolated using a 6 dBA attenuation rate per doubling of distance. Each noise level assumes the piece of equipment is operating at full power for the expected duration to complete the construction activity. The duration varies widely between each piece of equipment. Noise levels also depend on the model and year of the equipment used.

The nearest sensitive noise receivers in the project vicinity are the residences located approximately 0.3 mile south of the project site across SR 4. Typical construction noise at 50 feet from a receptor would not exceed a noise level of 85 dBA L_{eq}, while a receptor that is 0.3 mile away would result in a noise level of approximately 55 dBA L_{eq}. This modeled noise level does not account for the intervening structures between the project site and the sensitive receivers. The commercial uses that are adjacent to the project site would also not be significantly impacted by project construction, considering that construction would occur 0.8 mile away and result in a modeled construction noise level of 67 dBA L_{eq}. Similarly, the industrial use to the north of the project site would be 900 feet from the center of construction activity, resulting in a modeled construction noise level of 60 dBA L_{eq}. Therefore, construction noise would not exceed the applicable threshold of 80 dBA L_{eq} for residential uses, 85 dBA L_{eq} for commercial uses, and 90 dBA L_{eq} for industrial uses. Impacts would be less than significant.

Operation

The primary on-site noise sources associated with project operation would include vehicle circulation noise (e.g., engine startups, alarms, parking) and unloading noises.

Parking Lot Noise

Typical noise sources associated with parking areas include tire squealing, door slamming, car alarms, horns, and engine start-ups. The proposed project includes parking stalls for approximately 507 RVs or boats. Table 19 shows typical noise levels at 100 feet from various noise sources

associated with parking lots. These are instantaneous noise levels which would occur for short bursts of time during the use of cars on the project site.

Table 19 Maximum Noise Levels from Parking Lot Activity

Source	Maximum Noise Level (dBA) at 100 Feet
Autos at 14 mph	44
Car Alarm Signal	63
Car Horns	61
Door Slams or Radios	58
Talking	30

Source: Gordan Bricken & Associates, 1996. Estimates are based on actual noise measurements taken at various parking lots.

As shown in Table 19 above, instantaneous parking lot noise could reach a maximum noise level of 63 dBA at a distance of 100 feet. Given the proposed use, noise levels would likely be louder on weekends when users may be more likely to take their RVs or boats in and out of storage.

Because the maximum noise levels shown in Table 19 and their instantaneous nature, noise from the project site would not exceed the City's noise standards for residential properties. The Pittsburg Noise and Land Use Compatibility Matrix Table, shown in Table 16, establishes the normally acceptable noise levels for residential, commercial, and industrial land uses. Instantaneous noise would not exceed these thresholds at the nearest sensitive receptor or the adjacent commercial or industrial land uses. The loudest individual noise sources in parking lot areas shown in Table 19, including car horns and car alarm signals, would occur infrequently and would be instantaneous in nature.

Moreover, the zoning and land use designation for the project is intended to provide an area for commercial businesses that may generate excessive noise and should be located in areas with other commercial or industrial uses. For example, there is a junkyard and landscaping supplies business directly to the west of the project site that would likely be generating greater operational noise levels. Further the nearest sensitive receiver is over 0.3 mile away and noise associated with project construction and operation would not reach them. Therefore, the project would have a less than significant impact from operational noise.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Project construction would intermittently generate vibration on and adjacent to the project site. Vibration-generating equipment may include bulldozers and loaded trucks to move materials and debris, and vibratory rollers for paving. It is assumed that pile drivers, which generate strong ground borne vibration, would not be used during construction. Vibration-generating equipment on the project site would be used as close as approximately 225 feet from the nearest off-site structure to the east.

Unlike construction noise, vibration levels are not averaged over time to determine their impact. The most important factors are the maximum vibration level and the frequency of vibratory activity. Therefore, it is appropriate to estimate vibration levels at the nearest distance to off-site structures that equipment could be used, even though this equipment would typically be located farther from

off-site structures. As shown in Table 20, construction activity would generate vibration levels reaching an estimated 0.019 PPV in/sec at 225 feet, if vibratory rollers are used to pave asphalt. Vibration-generating equipment would be operated on a transient basis during construction.

Table 20 Vibration Levels for Construction Equipment at Noise-Sensitive Receptors

	PPV (in/sec)
Equipment	**225 feet**
Vibratory Roller	0.019
Large Bulldozer	0.008
Loaded Trucks	0.007
Jackhammer	0.003

Source: Caltrans 2013, equation 12

A maximum vibration level of 0.019 PPV in/sec at 225 feet during the potential use of vibratory rollers would not exceed 0.25 PPV in/sec, Caltrans' recommended criterion for distinctly perceptible vibration from transient sources. Considering the existing distance to the nearest sensitive receiver, no vibration would be perceived at residences as a result of project construction. Construction activity that would generate loud noises (and therefore vibration) also would be limited to daytime hours on weekdays, which would prevent the exposure of sensitive receivers to vibration during nighttime and weekend hours. In addition, vibration levels would not exceed the Caltrans' recommended criterion of 0.1 PPV in/sec for potential damage of historic and old buildings from transient vibration sources. Therefore, the impacts of vibration on people and structures would be less than significant.

The proposed project would not generate significant sources of vibration during operation, based on the nature of the proposed use. Therefore, operational vibration impacts would be less than significant.

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 two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

As discussed in Section 9, *Hazards and Hazardous Materials*, the nearest public airport is Buchanan Field Airport, which is located approximately 11.5 miles southwest of the project site. The project site is outside the Airport Influence Area for Buchanan Field Airport, as mapped in Figure 3B of the Contra Costa County Airport Land Use Compatibility Plan (Contra Costa County Airport Land Use Commission 2000). No private airstrips are located in the vicinity. Therefore, the project would not expose sensitive receptors to excessive noise levels from aircraft. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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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 (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	■
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■

Setting

According to the California Department of Finance (DOF), Pittsburg has an estimated population of 74,498 with 23,550 housing units (DOF 2021). The average number of persons per household is estimated at 3.34. The Association of Bay Area Governments (ABAG) provides projections for population in Pittsburg through the year 2040. ABAG projects the population of Pittsburg to be 91,615 by the year 2040 (ABAG 2017).

Impact Analysis

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)?*

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The project would not involve the construction of infrastructure that could induce substantial population growth, such as new or increased capacity sewer or water lines, or the construction of new streets and roads. The project would not introduce a new population to the project site and would be serviced by a few employees who would likely already reside in the region. In addition, the project would not require the displacement of housing or people because there are no existing residences on the site. No impact related to population and housing would occur.

NO IMPACT

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15 Public Services

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:				
	1 Fire protection?	☐	☐	■	☐
	2 Police protection?	☐	☐	■	☐
	3 Schools?	☐	☐	■	☐
	4 Parks?	☐	☐	■	☐
	5 Other public facilities?	☐	☐	■	☐

Setting

The Contra Costa County Fire Protection District (CCCFPD) provides fire and emergency medical services to the Bay Area Rapid Transit (BART) stations, regional parks, and unincorporated areas in the county, and fifteen cities including Pittsburg. CCCFPD operates three stations in Pittsburg (Station 84, Station 85, and Station 87), and three in neighboring Antioch (Station 81, Station 82, and Station 88) (CCCFPD 2021).

The Pittsburg Police Department (PPD) provides police protection services to the City. PPD operations division operates one police station in the City. The PPD patrol division is a 24/7 operation with more than 52 sworn officers and 27 civilian personnel (PPD 2021). In 2018, the PPD responded to 80,133 calls for service, which resulted in more than 2,800 arrests. The Pittsburg Police Department also operates the traffic division, investigations division, SWAT, crisis negotiation team, canine team, school resource officers, and several other divisions (PPD 2019).

The City of Pittsburg is served by three different school districts: the Pittsburg Unified School District, the Antioch Unified School District, and the Mt. Diablo Unified School District (Pittsburg 2020). In addition, adult education programs are available through the Pittsburg Adult Education Center, Los Medanos College, and Project Second Chance (City of Pittsburg 2021b).

The Pittsburg Public Works Department administers and maintains parks and other recreational facilities including community and senior centers. Public Works Department maintains

approximately 322 acres spread over 26 park facilities within the City of Pittsburg (City of Pittsburg 2021b).

Impact Analysis

a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:

1 Fire protection?

2 Police Protection?

3 Schools?

4 Parks?

5 Other public facilities?

CCCFPD Fire Station 83 is approximately 1 mile southeast of the project site, at 217 Gentrytown Drive, Antioch, California. The project would be required to comply with all applicable fire code standards. In addition, the project site is in an urban area that is already served by the CCCFPD. Development of the site would be subject to review by the CCCFPD and would be required to meet all California Fire Code regulations for construction and operation. The project would not incrementally increase population in the area nor introduce structures which could generate the need for increased levels of fire department response.

The PPD is located approximately 2.5 miles west of the project site. The project would not introduce a new population and no habitable structures could be constructed on site. Therefore, the project would not incrementally increase population in the area nor introduce structures which could generate the need for increased levels of police response.

Turner Elementary School is located approximately 0.5 mile south of the project site. However, the project would not construct residences that would increase the number of school-aged children in the City. Therefore, the project would not result in the need for new or physically altered school facilities.

Marchetti Park in Antioch is located approximately 0.5 mile south of the project site. The project would not increase the population in the City. No habitable structures could be constructed on site. Therefore, the project would not add population that would contribute to substantial physical deterioration of existing recreational facilities.

The project would result in less than significant impacts to public services.

LESS THAN SIGNIFICANT IMPACT

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?	☐	☐	☐	■

Setting

The City of Pittsburg Public Works and Recreation Departments administer and maintain parks and other recreational facilities including community and senior centers. The Public Works Department maintains approximately 322 acres spread over 26 park facilities within the City of Pittsburg (City of Pittsburg 2021c). Recreational activities and centers are also managed by the Recreation Department.

Parks nearest the project site include Marchetti Park in Antioch, approximately 0.5 mile south of the project site, Corteva Wetlands Preserve located approximately 0.5 mile northeast of the project site, and El Pueblo Park located approximately 1.5 miles west of the project site.

Impact Analysis

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?

As discussed in Section 15, *Public Services*, the project would not increase population and thus, would not increase, significantly accelerate or cause the physical deterioration of parks in the surrounding area. No habitable structure could be constructed on the site, and thus, the project would not introduce a new population to the City. Therefore, the project would not contribute to the acceleration or physical deterioration of parks. There would be no impact.

NO IMPACT

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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 section 15064.3, subdivision (b)?	☐	☐	■	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	☐	☐	■	☐
d. Result in inadequate emergency access?	☐	☐	■	☐

Information for this section is based on a Trip Generation Analysis prepared by Abrams Associates on July 6, 2021 and is included as Appendix TRA.

Setting

Existing Roadway System

- **SR 4** is an eight-lane east-west freeway with High Occupancy Vehicle Lane in each direction that carries a high volume of traffic exceeding 140,000 vehicles in Pittsburg. The freeway's median accommodates the Antioch BART line.
- **Pittsburg-Antioch Highway** is an east-west roadway north of the project site. It has one travel lane in each direction and no sidewalks. The posted speed limit is 50 miles per hour (mph).
- **Auto Center Drive** is a north-south roadway east of the project site. It has two travel lanes in each direction and sidewalks are provided on both sides of the roadway. The posted speed limit is 35 mph.

Existing Pedestrian and Bicycle Facilities

There are no pedestrian facilities in the project vicinity. The commercial development to the east of the project site includes 2- to 3-foot-wide sidewalks. At the signalized intersections in the area, crosswalks and pedestrian push-button actuated signals are provided.

Bicycle facilities in the City (following the Caltrans bicycle facility classification) include the following:

- **Class 1 Bike Trail (Class I Bike Path)** – Bike paths provide a separate right-of-way and are designated for the exclusive use of people riding bicycles and walking with minimal cross-flow traffic. Such paths can be well situated along creeks, canals, and rail lines. Class 1 Bikeways can also offer opportunities not provided by the road system by serving as both recreational areas and/or desirable commuter routes.
- **Class 2 Bike Trail (Class II Bike Path)** – Bike lanes provide designated street space for bicyclists, typically adjacent to the outer vehicle travel lanes. Bike lanes include special lane markings, pavement legends, and signage. Bike lanes may be enhanced with painted buffers between vehicle lanes and/or parking, and green paint at conflict zones (such as driveways or intersections).
- **Class 3 Bike Route (Class III Bike Path)** – Bike routes provide enhanced mixed-traffic conditions for bicyclists through signage, striping, and/or traffic calming treatments, and to provide continuity to a bikeway network. Bike routes are typically designated along gaps between bike trails or bike lanes, or along low-volume, low-speed streets. Bicycle boulevards provide further enhancements to bike routes to encourage slow speeds and discourage non-local vehicle traffic via traffic diverters, chicanes, traffic circles, and/or speed tables. Bicycle boulevards can also feature special wayfinding signage to nearby destinations or other bikeways.

The City of Pittsburg currently has 43 miles of bikeways including 28 miles of Class II Bicycle Lanes and 13 miles of Class I Multi-Use paths including the 6.8-mile Delta de Anza Trail that connects with Bay Point and Antioch. Most streets within the City such as Buchanan Road, Harbor Street, California Avenue, Center Avenue, Loveridge Road, and Willow Pass Road have bike lanes with some gaps (City of Pittsburg 2019a). The City adopted the Pittsburg Moves Active Transportation Plan in February 2021, which recommends over 250 bicycle and pedestrian improvement projects and a comprehensive crosswalk policy. The plan includes a project to build a Class I Multi Use Path along Pittsburg-Antioch Highway directly north of the project site (City of Pittsburg 2021c).

Existing Transit Service

The Eastern Contra Costa Transit Authority operates Tri Delta Transit which provides transit service in Eastern Contra Costa County, serving the communities of Antioch, Brentwood, Pittsburg, Oakley, and the county of Contra Costa. The Eastern Contra Costa Transit Authority operates 62 fixed-route buses and 30 paratransit buses along over 650 bus stops (Tri Delta Transit 2021). In the project vicinity, there is a bus stop at Verne Roberts Circle and West 10th Street, approximately 500 feet east of the site.

BART provides fixed rail transit to eastern Contra Costa County. Currently, the terminus station for the East Bay Area's yellow line is in Antioch. Weekday service is provided on approximately 15-minute headways and weekend service are provided on approximately 20-minute headways. The Antioch-SFO/Millbrae Line connects to key regional employment centers, including Concord, Pleasant Hill, Walnut Creek, Oakland and San Francisco. Transfers to other lines can be made in Oakland. The Antioch BART station is approximately 1.5 miles northeast from the project site.

Regulatory Setting

City of Pittsburg General Plan

The Transportation Element of the General Plan is focused primarily on motor vehicle traffic. The following policies are relevant to the proposed project:

Policy 7-P-1: Require mitigation for development proposals that are not part of the Traffic Mitigation Fee program which contribute more than one percent of the volume to an existing roadway or intersections with inadequate capacity to meet cumulative demand.

Policy 7-P-24: Continue to designate appropriate truck routes, and discourage unnecessary through traffic in residential areas.

Pittsburg Moves Active Transportation Plan

Adopted in February 2021, the Pittsburg Moves Active Transportation Plan sets forth goals and policies to promote better active transportation in the community to improve its health, mobility, livability, economy, and environment. The following policies are relevant to the proposed project:

Policy 1.1: Utilize Contra Costa Transportation Authority's (CCTA) Vehicle Miles Traveled (VMT) Analysis Methodology for Land Use Projects in Contra Costa for evaluating VMT impacts.

Policy 1.2: Discourage urban sprawl and other development projects that increase VMT. Support businesses and development projects that provide goods and services to residents within walking and biking distance of their homes.

Impact Analysis

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

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

The Trip Generation Analysis relied in trip generation rates from the Institute of Transportation Engineers (ITE). ITE does not provide a trip generation rate for RV and boat storage facilities, and therefore the analysis used the ITE rates for self-storage facilities, which is ITE land use code 151 (ITE 2017). Traffic associated with the proposed project would add 90 average daily trips (ADT), assuming 500 spaces of the facility are occupied. Peak trip generation for the facility would be highest on weekends. The facility would generate no more than 10 new vehicle trips during afternoon weekday rush hours when existing traffic would be highest (Appendix TRA).

In accordance with Pittsburg Moves Active Transportation Plan Policy 1.1, this analysis uses CCTA's VMT methodology to determine if the project's generated ADT is a significant impact. According to CCTA's VMT screening criteria, projects that generate or attract fewer than 110 daily vehicle trips cause a less than significant impact and do not require further analysis. The proposed project would generate 90 ADT and thus would meet the screening criteria. Therefore, VMT impacts would be less than significant.

The project would not contribute more than 1 percent of traffic volume to an existing roadway and would therefore not require mitigation measures, as laid out in Policy 7-P-1 of the City's General

Plan, which requires mitigation for projects that are not part of the Traffic Mitigation Fee program and that contribute more than 1 percent of the volume to an existing roadway with inadequate capacity to meet cumulative demand. The project site's designation as CS is intended to include uses that may potentially generate traffic and is intended for commercial and industrial uses. Therefore, the project would be consistent with General Plan Policy 7-P-24, considering that RVs and traffic hauling boats would not need to pass through residential neighborhoods in the vicinity to reach the project site. Therefore, the proposed project would be consistent with transportation policies and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

The project site would be accessible from the Pittsburg-Antioch Highway. The vehicle entryway to the facility would be 45 feet wide and contain directional arrows to indicate where traffic entering and exiting should flow. The entry gate would be wide enough (20 feet) to accommodate RVs and boats and the turn radius into the parking facility would be adequately sized to accommodate RVs and boats. There would be a wide shoulder for vehicles to slow before entering the facility and to accelerate when exiting onto the Pittsburg-Antioch Highway. The project would not introduce new roadways, a geometric design feature, or incompatible use to the area. Therefore, impacts related to hazards from geometric design feature or incompatible use would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project result in inadequate emergency access?

The project site would be accessible via Pittsburg-Antioch Highway. Project construction would be required to provide proper emergency access to the site as part of design and would be required to comply with current California Fire Code for access. Adherence to required design and construction standards would reduce potential impacts related to emergency access to less than significant.

LESS THAN SIGNIFICANT IMPACT

18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. 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)?	☐	■	☐	☐
b. 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	■	☐	☐

Assembly Bill 52

As of July 1, 2015, California Assembly Bill 52 of 2014 (AB 52) was enacted and expands CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes that "A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

1. 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
2. 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 these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 establishes a formal consultation process for California Tribes regarding those resources. The consultation process must be completed before a CEQA document can be adopted. Under AB 52, lead agencies are required to "begin consultation with a California Native American Tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

On October 27, 2021, the City of Pittsburg, pursuant to Public Resources 21080.3.1 and AB 52, sent notification letters via certified mail to seven California Native American Tribes that are traditionally and culturally affiliated with the project area. The letter was sent to representatives of the Amah Mutsun Tribal Band of Mission San Juan Bautista, Chicken Ranch Rancheria of Me-Wuk Indians, Guidiville Indian Rancheria, Muwekma Ohlone Indian Tribe of the SF Bay Area, Indian Canyon Mutsun Band of Costanoan, Nashville Enterprise Miwok-Maidu-Nishinam Tribe, North Valley Yokuts Tribe, The Confederated Villages of Lisjan, The Ohlone Indian Tribe, Tule River Indian Tribe, Wilton Rancheria, Wuksache Indian Tribe/Eshom Valley Band. On November 16, 2021, the Wilton Rancheria tribe requested additional information regarding the site and records searches, formal consultation was requested on November 23, and December 3, 2021, additional information was provided on December 17, 2021. No response was received and as such, consultation was concluded on January 15, 2022. On November 16, 2021, Chairperson Corrina Gould of the Confederated Villages of Lisjan requested additional information regarding the site and records searches formal consultation was requested on November 23 and December 3, 2021. Consultation was conducted on January 26, 2022 and additional information was provided on February 15, 2022. At the time of this publication, consultation is ongoing.

Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is 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)?

b. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?

At the time of publication of the Initial Study, AB 52 consultation is ongoing. Neither the cultural resources records search nor SLF search identified cultural resources listed on or eligible for listing on the CRHR or a local register within the project site. However, there is always potential to uncover buried archaeological and Tribal cultural resources during ground disturbing activities, which could potentially be considered Tribal cultural resources eligible for listing in the CRHR or a local register or be considered tribal cultural resources. Should project construction activities encounter and

damage or destroy a Tribal cultural resource or resources, impacts would be potentially significant. Mitigation Measure TCR-1 would ensure that Tribal cultural resources are preserved in the event they are uncovered during construction and would reduce impacts regarding disrupting Tribal cultural resources to less than significant.

Mitigation Measure

TCR-1 Inadvertent Discoveries During Construction

In the event that cultural resources of Native American origin are identified during ground-disturbing activities, all earth disturbing work within 50 feet of the find shall be temporarily suspended or redirected until a qualified archaeologist has evaluated the nature and significance of the find; an appropriate Native American representative, based on the nature of the find, is consulted; and mitigation measures are put in place for the disposition and protection of any find pursuant to Public Resources Code Section 21083.2. If the City, in consultation with local Native Americans, determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with local Native American group(s) prior to continuation of any earth disturbing work within the vicinity of the find. The plan shall include avoidance of the resource or, if avoidance of the resource is infeasible, shall outline the appropriate treatment of the resource in coordination with the appropriate local Native American Tribal representative and, if applicable, a qualified archaeologist. Examples of appropriate mitigation for Tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.

TCR-2 Tribal Cultural Resources Reburial Area

An area outside of the gated facility within the landscaped space of the final site plan, in consultation with the City and local Native Americans, shall be set aside for the reburial of Tribal Cultural Resources in the event that Tribal Cultural Resources are discovered on site. The landscape of the area shall consist of native and/or medicinally related vegetation and shall include a gathering area. The area shall have open access for any Tribal members and shall not be disturbed if Tribal Cultural Resources are reburied at this site.

Implementation of Mitigation Measure TRC-1 and TCR-2 would reduce impacts to Tribal cultural resources to less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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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 storm water 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?	☐	☐	■	☐

Potable Water and Wastewater

There is no water or sewer service reasonably close to the project site. Potable water would be provided to the project site after construction of an on-site well. Wastewater would be pumped via a small lift station from the trash enclosure and office building to a septic tank and leach fields in the southern portion of the project site. Additionally, a recycled water pipeline would be constructed to supply recycled water to the project site which would be used when non-potable water is adequate, such as cleaning of the solar panels or landscape irrigation.

Groundwater use in the City increased in 2020 to 1,480 acre-feet, a 28 percent increase from 2019, but only a 7 percent increase over the average from 2016 to 2020 (City of Pittsburg 2021a). Overall water supplies in Pittsburg are adequate to meet demand through 2045 in normal, dry, and consecutive dry years, according to the 2020 UWMP, as shown in Table 21 and Table 22.

Table 21 City of Pittsburg Supply/Demand Balance Normal Year (acre feet)

	2025	2030	2035	2040	2045
Supply Total	12,691	13,690	14,620	15,484	16,405
Demand Total	11,342	12,341	13,271	14,135	15,056
Difference	**1,349**	**1,349**	**1,349**	**1,349**	**1,349**

Source: City of Pittsburg 2021a

Table 22 City of Pittsburg Supply/Demand Balance Multiple Dry Years (acre feet)

		2020	2025	2030	2035	2040
First Year	Supply Total	12,691	13,690	14,620	15,484	16,405
	Demand Total	11,342	12,341	13,271	14,135	15,056
	Difference	1,349	1,349	1,349	1,349	1,349
Second Year	Supply Total	12,691	13,690	14,620	15,484	16,405
	Demand Total	11,342	12,341	13,271	14,135	15,056
	Difference	1,349	1,349	1,349	1,349	1,349
Third Year	Supply Total	12,139	13,089	13,972	14,793	15,668
	Demand Total	11,342	12,341	13,271	14,135	15,056
	Difference	797	748	701	658	612

Source: City of Pittsburg 2021a

Stormwater

The site currently drains to storm drains in the adjacent roadway on Pittsburg-Antioch Highway where the flow joins with the Pittsburg stormwater system. Water also drains into the Contra Costa Spillway on the eastern end of the project site. Stormwater runoff is collected and disposed of by an integrated system of storm drains, inlets, curbside gutters, catch basins, drainage ditches, and man-made channels. Ultimately, stormwater that enters the City's system drains to the Suisun Bay. The City of Pittsburg maintenance personnel inspect, clean, and maintain storm drains within the City and ensure inlets and drains are clear of debris to ensure stormwater flows freely (City of Pittsburg 2021d).

Solid Waste

Mt. Diablo Resource Recovery manages all trash and recycling services in Pittsburg. Both residential and commercial solid waste is currently transported to and disposed of at the Keller Canyon Landfill southwest of the City. Table 23 shows the estimated remaining capacity and anticipated closure dates of Keller Canyon Landfill (CalRecycle 2019).

Table 23 Estimated Landfill Capacities and Closure Dates

Landfill Facility	Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards)	Anticipated Closure Date
Keller Canyon	75,018,280	63,408,410	2030

Source: CalRecycle 2019b

Other Utilities

Gas and electric utilities for construction would be provided by PG&E or MCE. Project operation would not require natural gas and would generate its own electricity from the proposed solar panel canopy. Infrastructure capable of supporting electric and telecommunications exists on the project site and in the project vicinity.

Impact Analysis

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

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?

Water and Wastewater

The project would not result in any direct impacts to water or wastewater utilities facilities because the project would construct an on-site well and septic system to service the project's minimal water needs and wastewater generation. Construction and use of the well would abide by Contra Costa County Ordinance Code Chapter 414-4, as adopted into PMC Section 12.40. Prior to commencing work on a well, a permit would be required to be obtained by a licensed well driller and approved by a California Department of Health Services health officer. The well would be required to be sited in an adequately drained and pollution or contamination free location on the project site. The well must also be protected in accordance with Section 414-4.807 of the Contra Costa County Code, which includes adequately chlorinating the well following construction.

The office would include a restroom and potable water and ice would be offered to users of the storage facility, both of which would require potable water. The restroom and RVs and boats would dispose of human waste through a sanitary sewer line that would connect to the on-site septic system. Assuming a 20 percent wastewater generation rate, the project would generate 62,278 gallons of wastewater per year (171 gallons per day), based on overall water use of 311,390 gallons per year (853 gallons per day). The solar panel canopies would require maintenance cleaning (one or two times per year), which could require water from the well. The project would require a California Fire Code compliant water system, which is outlined in Section 507 (fire protection water supplies) and Section 904 (automatic sprinkler systems). Water supply is further discussed in Section 10, *Hydrology and Water Quality*, and the use of septic tanks is further discussed in Section 7, *Geology and Soils* under criterion e. The project would not require the construction of new or expanded water or wastewater facilities. Therefore, impacts would be less than significant.

Stormwater

The project would comply with City standards and convey stormwater to the City's storm drain system and capture runoff in two bio-retention swales. Impacts to stormwater and associated stormwater management plans are discussed in Section 10, *Hydrology and Water Quality.* Stormwater would primarily be captured in the bioretention swales to accommodate for the increased pervious surfaces. The project would not require the construction of new or expanded stormwater facilities. Therefore, impacts would be less than significant.

Electricity, Natural Gas, and Telecommunications

As discussed in Section 6, *Energy*, the project would not result in the wasteful, inefficient, or unnecessary consumption of energy. The project would be required to comply with all state and federal regulations regarding energy efficiency. The project would create a new source of energy, the solar canopy, which would be purchased by MCE or PG&E. Therefore, the project would not require new or expanded electric facilities. In addition, the project would not require the use of natural gas or telecommunications facilities; therefore, no impacts to those utilities would occur.

NO IMPACT

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?

Project construction would temporarily use water for dust control. Operation would require potable water in the restroom and for the ice machine. Non-potable recycled water would also be used for maintenance of the solar canopy and landscaping irrigation. The project would rely on an on-site well that draws from the Pittsburg Plain groundwater basin to supply water. The Pittsburg Plain groundwater basin is not considered critically over drafted by DWR, nor is it at risk of overdraft conditions considering that groundwater levels have remained fairly stable (City of Pittsburg 2021a). Further discussion of groundwater supplies can be found in Section 10, *Hydrology and Water Quality* and were found to be sufficient. Considering the sufficiency of water supplies over multiple dry years and the project's minimal water usage, impacts to water supplies would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Project construction and operation would be required to divert 75 percent of solid waste per AB 341 and would be required to comply with PMC Chapter 8.06, which outlines how solid waste is removed and disposed of from a site. The project could generate 1.15 tons of solid waste per year or approximately 6 pounds per day during operation (Appendix AQ). Solid waste would be collected by Mt. Diablo Resource Recovery and then transferred to the Keller Canyon Landfill. Project generated waste would be less than 0.00009 percent of Keller Canyon Landfill's daily allowable waste limit of 3,500 tons per day (CalRecycle 2019b). Actual net waste generation could be lower as RVs and boats may dump their waste prior to arriving at the facility. The project's incremental increase in solid waste would not adversely affect solid waste facilities. The project would not adversely affect solid waste facilities and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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 downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	■

Impact Analysis

a. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

b. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, 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?

c. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, 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?

d. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The project site is not in a CAL FIRE designated very high fire hazard severity zone and is located approximately 15 miles east of the nearest very high fire hazard severity zone (CAL FIRE 2020). As such, project implementation would not impair any adopted emergency response plan or emergency evacuation plan; exacerbate wildfire risks; require the installation or maintenance of associated infrastructure that may exacerbate fire risk; or expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post fire slope instability, or drainage changes in or near state responsibility areas or lands classified as very high fire severity zones. No impact would occur.

NO IMPACT

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Does the project:				
a. 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. 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. 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?

As discussed in this Initial Study, the project would have no impact, a less than significant impact, or a less than significant impact after mitigation with respect to all environmental issues. Regarding biological resources, the existing habitat onsite does currently support only one special status species, western burrowing owl, which would be protected by Mitigation Measure BIO-1. This mitigation measure would also protect any other nesting birds. Implementation of Mitigation Measure BIO-2 would reduce potential impacts to the on-site wetland to a less-than-significant level by requiring a wetlands buffer during construction. Further, the two bioretention areas would

protect and replenish the wetland during operation. No historical or archeological resources are known to occur at the project site, as stated in Section 5, *Cultural Resources*. Potential impacts to unknown cultural resources on the project site would be reduced to a less-than-significant level with implementation of Mitigation Measures CUL-1 and TCR-1, which would require notification and appropriate protective measures in the event of an unanticipated discovery of cultural or tribal cultural resources.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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)?

The proposed project was determined to have no impact in comparison to existing conditions for issue areas related to surrounding developments or natural resources. Therefore, as there would be no direct or indirect impacts, the proposed project would not contribute to cumulative impacts to these issue areas.

For all other issue areas, the proposed project would have either direct or indirect impacts that have been determined to be less than significant, or less than significant with mitigation incorporated. The project would not adversely affect biological, cultural, or other physical resources outside of the project site. Other impacts, such as air quality, GHG emissions, noise, transportation, and utilities impacts, would be minor and would not be cumulatively considerable. There are no major nearby proposed projects would potentially overlap with project construction. Therefore, construction equipment exhaust emissions, GHG emissions, noise would not overlap during construction. The effects of the project would not combine with impacts from other projects in the vicinity to result in a significant cumulative impact.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Effects on human beings are generally associated with impacts related to issue areas such as air quality, geology and soils, hazards and hazardous materials, noise, and transportation. As discussed in this Initial Study, the project would have a less than significant impact or a less than significant with mitigation impact in each of these resource areas. Therefore, the project would not cause substantial adverse effects on human beings, either directly or indirectly and impacts associated with the project would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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Rincon Consultants, Inc. prepared this Initial Study under contract to the City of Pittsburg. Persons involved in data gathering analysis, project management, and quality control are listed below.

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Appendix AQ

Air Quality and Greenhouse Gas CalEEMod Outputs

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Pittsburg Solar RV/Boat Storage Project

Contra Costa County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.24	1000sqft	0.03	1,243.00	0
Parking Lot	226.00	Space	10.00	191,920.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2023
Utility Company	MCE				
CO2 Intensity (lb/MWhr)	289.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - From Project Description. Used square footage of solar canopy to determine the size of the parking lot surface.

Construction Phase - Applicant provided schedule; trenching phase for installation of the well, septic tank, and pipeline

Off-road Equipment - applicant provided

Off-road Equipment - length of construction day 6am-8pm

Off-road Equipment - client provided

Off-road Equipment - applicant provided

Off-road Equipment - applicant provided

Off-road Equipment - applicant provided

Trips and VMT -

Grading - Assuming all 12.5 acres have material import/export at depth of 12 inches

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating - State BAAQMD Regulation 8 Rule 3, compliance with flat coating VOC rate of 50 g/L.

Vehicle Trips - WkDy trip rate from trip generation analysis: 90 trips / (1.243 ksf) / day = 72.41 trips/day

Road Dust -

Area Coating - BAAQMD reg 8 rule 3

Water And Wastewater - 20% reduction for indoor water use; septic tank used

Construction Off-road Equipment Mitigation - In compliance with BAAQMD dust control measures based on General Plan Policy 9-P-30. 5mph mitigation is a project-specific feature

Area Mitigation - baaqmd reg 8 rule 3

Energy Mitigation -

Water Mitigation -

Fleet Mix -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstructionPhase	NumDays	10.00	4.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	20.00	16.00
tblConstructionPhase	NumDays	300.00	164.00
tblConstructionPhase	NumDays	20.00	22.00
tblGrading	MaterialExported	0.00	778.00
tblGrading	MaterialImported	0.00	778.00
tblLandUse	LandUseSquareFeet	1,240.00	1,243.00
tblLandUse	LandUseSquareFeet	90,400.00	191,920.00
tblLandUse	LotAcreage	2.03	10.00
tblOffRoadEquipment	LoadFactor	0.38	0.38

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	195.00	194.00
tblVehicleTrips	ST_TR	2.21	72.41
tblVehicleTrips	SU_TR	0.70	72.41
tblVehicleTrips	WD_TR	9.74	72.41
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	220,389.85	176,312.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
2022	6.2957	52.3881	38.8364	0.0913	9.6369	2.1136	11.7505	3.7691	1.9458	5.7150	0.0000	8,908.0220	8,908.0220	2.6221	0.1258	9,004.2075
Maximum	**6.2957**	**52.3881**	**38.8364**	**0.0913**	**9.6369**	**2.1136**	**11.7505**	**3.7691**	**1.9458**	**5.7150**	**0.0000**	**8,908.0220**	**8,908.0220**	**2.6221**	**0.1258**	**9,004.2075**

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					
2022	6.2957	52.3881	38.8364	0.0913	4.5705	2.1136	6.6841	1.7589	1.9458	3.7047	0.0000	8,908.0220	8,908.0220	2.6221	0.1258	9,004.2075
Maximum	**6.2957**	**52.3881**	**38.8364**	**0.0913**	**4.5705**	**2.1136**	**6.6841**	**1.7589**	**1.9458**	**3.7047**	**0.0000**	**8,908.0220**	**8,908.0220**	**2.6221**	**0.1258**	**9,004.2075**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**52.57**	**0.00**	**43.12**	**53.33**	**0.00**	**35.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.1202	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0497	0.0497	1.3000e-004		0.0530
Energy	5.9000e-004	5.4100e-003	4.5400e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.4904	6.4904	1.2000e-004	1.2000e-004	6.5290
Mobile	0.2575	0.2337	2.1002	4.4700e-003	0.4516	3.1800e-003	0.4548	0.1203	2.9700e-003	0.1233		458.7605	458.7605	0.0264	0.0196	465.2494
Total	**0.3783**	**0.2393**	**2.1279**	**4.5000e-003**	**0.4516**	**3.6700e-003**	**0.4553**	**0.1203**	**3.4600e-003**	**0.1237**		**465.3006**	**465.3006**	**0.0266**	**0.0197**	**471.8314**

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	0.1202	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0497	0.0497	1.3000e-004		0.0530
Energy	5.9000e-004	5.4100e-003	4.5400e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.4904	6.4904	1.2000e-004	1.2000e-004	6.5290
Mobile	0.2575	0.2337	2.1002	4.4700e-003	0.4516	3.1800e-003	0.4548	0.1203	2.9700e-003	0.1233		458.7605	458.7605	0.0264	0.0196	465.2494
Total	**0.3783**	**0.2393**	**2.1279**	**4.5000e-003**	**0.4516**	**3.6700e-003**	**0.4553**	**0.1203**	**3.4600e-003**	**0.1237**		**465.3006**	**465.3006**	**0.0266**	**0.0197**	**471.8314**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	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	N20	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	3/1/2022	3/6/2022	5	4	
2	Grading	Grading	3/7/2022	4/5/2022	5	22	
3	Paving	Paving	4/8/2022	5/1/2022	5	16	
4	Building Construction	Building Construction	5/1/2022	12/15/2022	5	164	
5	Architectural Coating	Architectural Coating	10/1/2022	11/1/2022	5	22	
6	Trenching	Trenching	3/7/2022	4/5/2022	5	22	

Acres of Grading (Site Preparation Phase): 12

Acres of Grading (Grading Phase): 66

Acres of Paving: 10

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,865; Non-Residential Outdoor: 622; Striped Parking Area: 11,515 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Plate Compactors	1	8.00	8	0.43
Site Preparation	Rollers	1	8.00	80	0.38
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Scrapers	2	8.00	367	0.48

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	3	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Trenching	Excavators	1	8.00	158	0.38
Trenching	Graders	1	8.00	187	0.41

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	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	11	28.00	0.00	194.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	81.00	32.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

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					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.2617	35.5911	22.3641	0.0517		1.4822	1.4822		1.3644	1.3644		4,998.7243	4,998.7243	1.6091		5,038.9522
Total	**3.2617**	**35.5911**	**22.3641**	**0.0517**	**9.2036**	**1.4822**	**10.6858**	**3.6538**	**1.3644**	**5.0181**		**4,998.7243**	**4,998.7243**	**1.6091**		**5,038.9522**

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

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	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
Worker	0.0557	0.0326	0.4837	1.3500e-003	0.1479	7.6000e-004	0.1486	0.0392	7.0000e-004	0.0399		137.4551	137.4551	3.7800e-003	3.4600e-003	138.5809
Total	**0.0557**	**0.0326**	**0.4837**	**1.3500e-003**	**0.1479**	**7.6000e-004**	**0.1486**	**0.0392**	**7.0000e-004**	**0.0399**		**137.4551**	**137.4551**	**3.7800e-003**	**3.4600e-003**	**138.5809**

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					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	3.2617	35.5911	22.3641	0.0517		1.4822	1.4822		1.3644	1.3644	0.0000	4,998.7243	4,998.7243	1.6091		5,038.9522
Total	**3.2617**	**35.5911**	**22.3641**	**0.0517**	**4.1416**	**1.4822**	**5.6238**	**1.6442**	**1.3644**	**3.0086**	**0.0000**	**4,998.7243**	**4,998.7243**	**1.6091**		**5,038.9522**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

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	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
Worker	0.0557	0.0326	0.4837	1.3500e-003	0.1479	7.6000e-004	0.1486	0.0392	7.0000e-004	0.0399		137.4551	137.4551	3.7800e-003	3.4600e-003	138.5809
Total	**0.0557**	**0.0326**	**0.4837**	**1.3500e-003**	**0.1479**	**7.6000e-004**	**0.1486**	**0.0392**	**7.0000e-004**	**0.0399**		**137.4551**	**137.4551**	**3.7800e-003**	**3.4600e-003**	**138.5809**

3.3 Grading - 2022

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					9.2116	0.0000	9.2116	3.6550	0.0000	3.6550			0.0000			0.0000
Off-Road	4.1226	43.8457	32.6436	0.0714		1.8456	1.8456		1.6987	1.6987		6,905.6581	6,905.6581	2.2259		6,961.3045
Total	**4.1226**	**43.8457**	**32.6436**	**0.0714**	**9.2116**	**1.8456**	**11.0572**	**3.6550**	**1.6987**	**5.3537**		**6,905.6581**	**6,905.6581**	**2.2259**		**6,961.3045**

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

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	0.0414	1.4559	0.3184	5.5800e-003	0.1542	0.0136	0.1678	0.0423	0.0131	0.0553		608.6019	608.6019	0.0201	0.0965	637.8453
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
Worker	0.0866	0.0507	0.7524	2.1000e-003	0.2300	1.1800e-003	0.2312	0.0610	1.0900e-003	0.0621		213.8191	213.8191	5.8800e-003	5.3800e-003	215.5702
Total	**0.1280**	**1.5066**	**1.0708**	**7.6800e-003**	**0.3842**	**0.0148**	**0.3990**	**0.1033**	**0.0141**	**0.1174**		**822.4210**	**822.4210**	**0.0260**	**0.1018**	**853.4156**

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					4.1452	0.0000	4.1452	1.6447	0.0000	1.6447			0.0000			0.0000
Off-Road	4.1226	43.8457	32.6436	0.0714		1.8456	1.8456		1.6987	1.6987	0.0000	6,905.6581	6,905.6581	2.2259		6,961.3045
Total	**4.1226**	**43.8457**	**32.6436**	**0.0714**	**4.1452**	**1.8456**	**5.9908**	**1.6447**	**1.6987**	**3.3435**	**0.0000**	**6,905.6581**	**6,905.6581**	**2.2259**		**6,961.3045**

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

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	0.0414	1.4559	0.3184	5.5800e-003	0.1542	0.0136	0.1678	0.0423	0.0131	0.0553		608.6019	608.6019	0.0201	0.0965	637.8453
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
Worker	0.0866	0.0507	0.7524	2.1000e-003	0.2300	1.1800e-003	0.2312	0.0610	1.0900e-003	0.0621		213.8191	213.8191	5.8800e-003	5.3800e-003	215.5702
Total	**0.1280**	**1.5066**	**1.0708**	**7.6800e-003**	**0.3842**	**0.0148**	**0.3990**	**0.1033**	**0.0141**	**0.1174**		**822.4210**	**822.4210**	**0.0260**	**0.1018**	**853.4156**

3.4 Paving - 2022

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	1.0487	10.6899	13.2489	0.0198		0.5730	0.5730		0.5272	0.5272		1,913.2767	1,913.2767	0.6188		1,928.7466
Paving	1.6375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.6862**	**10.6899**	**13.2489**	**0.0198**		**0.5730**	**0.5730**		**0.5272**	**0.5272**		**1,913.2767**	**1,913.2767**	**0.6188**		**1,928.7466**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving - 2022

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	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
Worker	0.0464	0.0272	0.4031	1.1300e-003	0.1232	6.3000e-004	0.1239	0.0327	5.8000e-004	0.0333		114.5459	114.5459	3.1500e-003	2.8800e-003	115.4841
Total	**0.0464**	**0.0272**	**0.4031**	**1.1300e-003**	**0.1232**	**6.3000e-004**	**0.1239**	**0.0327**	**5.8000e-004**	**0.0333**		**114.5459**	**114.5459**	**3.1500e-003**	**2.8800e-003**	**115.4841**

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	1.0487	10.6899	13.2489	0.0198		0.5730	0.5730		0.5272	0.5272	0.0000	1,913.2767	1,913.2767	0.6188		1,928.7465
Paving	1.6375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.6862**	**10.6899**	**13.2489**	**0.0198**		**0.5730**	**0.5730**		**0.5272**	**0.5272**	**0.0000**	**1,913.2767**	**1,913.2767**	**0.6188**		**1,928.7465**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving - 2022

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	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
Worker	0.0464	0.0272	0.4031	1.1300e-003	0.1232	6.3000e-004	0.1239	0.0327	5.8000e-004	0.0333		114.5459	114.5459	3.1500e-003	2.8800e-003	115.4841
Total	**0.0464**	**0.0272**	**0.4031**	**1.1300e-003**	**0.1232**	**6.3000e-004**	**0.1239**	**0.0327**	**5.8000e-004**	**0.0333**		**114.5459**	**114.5459**	**3.1500e-003**	**2.8800e-003**	**115.4841**

3.5 Building Construction - 2022

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	1.8146	16.7670	17.4392	0.0288		0.8645	0.8645		0.8122	0.8122		2,737.1520	2,737.1520	0.6711		2,753.9288
Total	**1.8146**	**16.7670**	**17.4392**	**0.0288**		**0.8645**	**0.8645**		**0.8122**	**0.8122**		**2,737.1520**	**2,737.1520**	**0.6711**		**2,753.9288**

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2022

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	0.0000
Vendor	0.0756	1.7616	0.5452	6.8800e-003	0.2167	0.0202	0.2369	0.0624	0.0193	0.0817		736.7818	736.7818	0.0162	0.1072	769.1276
Worker	0.2505	0.1466	2.1766	6.0800e-003	0.6654	3.4100e-003	0.6688	0.1765	3.1400e-003	0.1796		618.5480	618.5480	0.0170	0.0156	623.6139
Total	**0.3261**	**1.9082**	**2.7218**	**0.0130**	**0.8821**	**0.0236**	**0.9057**	**0.2389**	**0.0224**	**0.2613**		**1,355.3298**	**1,355.3298**	**0.0332**	**0.1228**	**1,392.7416**

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	1.8146	16.7670	17.4392	0.0288		0.8645	0.8645		0.8122	0.8122	0.0000	2,737.1520	2,737.1520	0.6711		2,753.9288
Total	**1.8146**	**16.7670**	**17.4392**	**0.0288**		**0.8645**	**0.8645**		**0.8122**	**0.8122**	**0.0000**	**2,737.1520**	**2,737.1520**	**0.6711**		**2,753.9288**

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2022

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	0.0000
Vendor	0.0756	1.7616	0.5452	6.8800e-003	0.2167	0.0202	0.2369	0.0624	0.0193	0.0817		736.7818	736.7818	0.0162	0.1072	769.1276
Worker	0.2505	0.1466	2.1766	6.0800e-003	0.6654	3.4100e-003	0.6688	0.1765	3.1400e-003	0.1796		618.5480	618.5480	0.0170	0.0156	623.6139
Total	**0.3261**	**1.9082**	**2.7218**	**0.0130**	**0.8821**	**0.0236**	**0.9057**	**0.2389**	**0.0224**	**0.2613**		**1,355.3298**	**1,355.3298**	**0.0332**	**0.1228**	**1,392.7416**

3.6 Architectural Coating - 2022

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					
Archit. Coating	3.9010					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**4.1055**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

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	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
Worker	0.0495	0.0290	0.4299	1.2000e-003	0.1314	6.7000e-004	0.1321	0.0349	6.2000e-004	0.0355		122.1823	122.1823	3.3600e-003	3.0800e-003	123.1830
Total	**0.0495**	**0.0290**	**0.4299**	**1.2000e-003**	**0.1314**	**6.7000e-004**	**0.1321**	**0.0349**	**6.2000e-004**	**0.0355**		**122.1823**	**122.1823**	**3.3600e-003**	**3.0800e-003**	**123.1830**

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					
Archit. Coating	3.9010					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**4.1055**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

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	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
Worker	0.0495	0.0290	0.4299	1.2000e-003	0.1314	6.7000e-004	0.1321	0.0349	6.2000e-004	0.0355		122.1823	122.1823	3.3600e-003	3.0800e-003	123.1830
Total	**0.0495**	**0.0290**	**0.4299**	**1.2000e-003**	**0.1314**	**6.7000e-004**	**0.1321**	**0.0349**	**6.2000e-004**	**0.0355**		**122.1823**	**122.1823**	**3.3600e-003**	**3.0800e-003**	**123.1830**

3.7 Trenching - 2022

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	0.6171	7.0268	4.9877	0.0118		0.2530	0.2530		0.2328	0.2328		1,141.7610	1,141.7610	0.3693		1,150.9927
Total	**0.6171**	**7.0268**	**4.9877**	**0.0118**		**0.2530**	**0.2530**		**0.2328**	**0.2328**		**1,141.7610**	**1,141.7610**	**0.3693**		**1,150.9927**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Trenching - 2022

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	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
Worker	0.0155	9.0500e-003	0.1344	3.8000e-004	0.0411	2.1000e-004	0.0413	0.0109	1.9000e-004	0.0111		38.1820	38.1820	1.0500e-003	9.6000e-004	38.4947
Total	**0.0155**	**9.0500e-003**	**0.1344**	**3.8000e-004**	**0.0411**	**2.1000e-004**	**0.0413**	**0.0109**	**1.9000e-004**	**0.0111**		**38.1820**	**38.1820**	**1.0500e-003**	**9.6000e-004**	**38.4947**

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	0.6171	7.0268	4.9877	0.0118		0.2530	0.2530		0.2328	0.2328	0.0000	1,141.7610	1,141.7610	0.3693		1,150.9927
Total	**0.6171**	**7.0268**	**4.9877**	**0.0118**		**0.2530**	**0.2530**		**0.2328**	**0.2328**	**0.0000**	**1,141.7610**	**1,141.7610**	**0.3693**		**1,150.9927**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Trenching - 2022

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	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
Worker	0.0155	9.0500e-003	0.1344	3.8000e-004	0.0411	2.1000e-004	0.0413	0.0109	1.9000e-004	0.0111		38.1820	38.1820	1.0500e-003	9.6000e-004	38.4947
Total	**0.0155**	**9.0500e-003**	**0.1344**	**3.8000e-004**	**0.0411**	**2.1000e-004**	**0.0413**	**0.0109**	**1.9000e-004**	**0.0111**		**38.1820**	**38.1820**	**1.0500e-003**	**9.6000e-004**	**38.4947**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	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	0.2575	0.2337	2.1002	4.4700e-003	0.4516	3.1800e-003	0.4548	0.1203	2.9700e-003	0.1233		458.7605	458.7605	0.0264	0.0196	465.2494
Unmitigated	0.2575	0.2337	2.1002	4.4700e-003	0.4516	3.1800e-003	0.4548	0.1203	2.9700e-003	0.1233		458.7605	458.7605	0.0264	0.0196	465.2494

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	89.79	89.79	89.79	214,572	214,572
Parking Lot	0.00	0.00	0.00		
Total	89.79	89.79	89.79	214,572	214,572

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	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
General Office Building	0.558086	0.056127	0.180570	0.129764	0.024304	0.005480	0.007016	0.007028	0.000551	0.000343	0.026017	0.001231	0.003481
Parking Lot	0.558086	0.056127	0.180570	0.129764	0.024304	0.005480	0.007016	0.007028	0.000551	0.000343	0.026017	0.001231	0.003481

5.0 Energy Detail

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable 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	5.9000e-004	5.4100e-003	4.5400e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.4904	6.4904	1.2000e-004	1.2000e-004	6.5290
NaturalGas Unmitigated	5.9000e-004	5.4100e-003	4.5400e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.4904	6.4904	1.2000e-004	1.2000e-004	6.5290

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
General Office Building	55.1688	5.9000e-004	5.4100e-003	4.5400e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.4904	6.4904	1.2000e-004	1.2000e-004	6.5290
Parking Lot	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		**5.9000e-004**	**5.4100e-003**	**4.5400e-003**	**3.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**		**6.4904**	**6.4904**	**1.2000e-004**	**1.2000e-004**	**6.5290**

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					
General Office Building	0.0551688	5.9000e-004	5.4100e-003	4.5400e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.4904	6.4904	1.2000e-004	1.2000e-004	6.5290
Parking Lot	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		**5.9000e-004**	**5.4100e-003**	**4.5400e-003**	**3.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**		**6.4904**	**6.4904**	**1.2000e-004**	**1.2000e-004**	**6.5290**

6.0 Area Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.1202	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0497	0.0497	1.3000e-004		0.0530
Unmitigated	0.1202	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0497	0.0497	1.3000e-004		0.0530

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	0.0235					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0946					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1500e-003	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0497	0.0497	1.3000e-004		0.0530
Total	**0.1202**	**2.1000e-004**	**0.0232**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**0.0497**	**0.0497**	**1.3000e-004**		**0.0530**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

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	0.0235					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0946					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1500e-003	2.1000e-004	0.0232	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0497	0.0497	1.3000e-004		0.0530
Total	**0.1202**	**2.1000e-004**	**0.0232**	**0.0000**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**		**0.0497**	**0.0497**	**1.3000e-004**		**0.0530**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Pittsburg Solar RV/Boat Storage Project

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.24	1000sqft	0.03	1,243.00	0
Parking Lot	226.00	Space	10.00	191,920.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2030
Utility Company	MCE				
CO2 Intensity (lb/MWhr)	289.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - From Project Description. Used square footage of solar canopy to determine the size of the parking lot surface.

Construction Phase - Applicant provided schedule; trenching phase for installation of the well, septic tank, and pipeline

Off-road Equipment - applicant provided

Off-road Equipment - length of construction day 6am-8pm

Off-road Equipment - client provided

Off-road Equipment - applicant provided

Off-road Equipment - applicant provided

Off-road Equipment - applicant provided

Trips and VMT -

Grading - Assuming all 12.5 acres have material import/export at depth of 12 inches

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating - State BAAQMD Regulation 8 Rule 3, compliance with flat coating VOC rate of 50 g/L.

Vehicle Trips - WkDy trip rate from trip generation analysis: 90 trips / (1.243 ksf) / day = 72.41 trips/day

Road Dust -

Area Coating - BAAQMD reg 8 rule 3

Water And Wastewater - 20% reduction for indoor water use; septic tank used

Construction Off-road Equipment Mitigation - In compliance with BAAQMD dust control measures based on General Plan Policy 9-P-30.
5mph mitigation is a project-specific feature

Area Mitigation - baaqmd reg 8 rule 3

Energy Mitigation -

Water Mitigation -

Fleet Mix -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstructionPhase	NumDays	10.00	4.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	20.00	16.00
tblConstructionPhase	NumDays	300.00	164.00
tblConstructionPhase	NumDays	20.00	22.00
tblGrading	MaterialExported	0.00	778.00
tblGrading	MaterialImported	0.00	778.00
tblLandUse	LandUseSquareFeet	1,240.00	1,243.00
tblLandUse	LandUseSquareFeet	90,400.00	191,920.00
tblLandUse	LotAcreage	2.03	10.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	OffRoadEquipmentType		Excavators

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	195.00	194.00
tblVehicleTrips	ST_TR	2.21	72.41
tblVehicleTrips	SU_TR	0.70	72.41
tblVehicleTrips	WD_TR	9.74	72.41
tblWater	AerobicPercent	87.46	0.00
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	220,389.85	176,312.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
2022	0.3014	2.2877	2.2416	4.7100e-003	0.1968	0.1045	0.3014	0.0684	0.0977	0.1661	0.0000	417.6059	417.6059	0.0863	0.0103	422.8402
Maximum	**0.3014**	**2.2877**	**2.2416**	**4.7100e-003**	**0.1968**	**0.1045**	**0.3014**	**0.0684**	**0.0977**	**0.1661**	**0.0000**	**417.6059**	**417.6059**	**0.0863**	**0.0103**	**422.8402**

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					
2022	0.3014	2.2877	2.2416	4.7100e-003	0.1310	0.1045	0.2355	0.0423	0.0977	0.1400	0.0000	417.6056	417.6056	0.0863	0.0103	422.8398
Maximum	**0.3014**	**2.2877**	**2.2416**	**4.7100e-003**	**0.1310**	**0.1045**	**0.2355**	**0.0423**	**0.0977**	**0.1400**	**0.0000**	**417.6056**	**417.6056**	**0.0863**	**0.0103**	**422.8398**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**33.46**	**0.00**	**21.85**	**38.19**	**0.00**	**15.73**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-1-2022	5-31-2022	1.0436	1.0436
2	6-1-2022	8-31-2022	0.6840	0.6840
3	9-1-2022	9-30-2022	0.2230	0.2230
		Highest	1.0436	1.0436

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	0.0221	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.0600e-003	4.0600e-003	1.0000e-005	0.0000	4.3200e-003
Energy	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	12.7171	12.7171	1.3500e-003	1.8000e-004	12.8045
Mobile	0.0307	0.0322	0.2931	6.2000e-004	0.0795	4.2000e-004	0.0799	0.0212	3.9000e-004	0.0216	0.0000	60.6771	60.6771	3.5300e-003	2.6900e-003	61.5679
Waste						0.0000	0.0000		0.0000	0.0000	0.2334	0.0000	0.2334	0.0138	0.0000	0.5783
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.1877	0.1877	0.0401	1.4000e-004	1.2305
Total	**0.0529**	**0.0332**	**0.2960**	**6.3000e-004**	**0.0795**	**5.1000e-004**	**0.0800**	**0.0212**	**4.8000e-004**	**0.0217**	**0.2334**	**73.5859**	**73.8193**	**0.0588**	**3.0100e-003**	**76.1855**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0221	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.0600e-003	4.0600e-003	1.0000e-005	0.0000	4.3200e-003
Energy	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.6773	0.6773	0.0000	1.0000e-005	0.6810
Mobile	0.0307	0.0322	0.2931	6.2000e-004	0.0795	4.2000e-004	0.0799	0.0212	3.9000e-004	0.0216	0.0000	60.6771	60.6771	3.5300e-003	2.6900e-003	61.5679
Waste						0.0000	0.0000		0.0000	0.0000	0.2334	0.0000	0.2334	0.0138	0.0000	0.5783
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.1877	0.1877	0.0401	1.4000e-004	1.2305
Total	**0.0529**	**0.0332**	**0.2960**	**6.3000e-004**	**0.0795**	**5.1000e-004**	**0.0800**	**0.0212**	**4.8000e-004**	**0.0217**	**0.2334**	**61.5461**	**61.7796**	**0.0574**	**2.8400e-003**	**64.0620**

	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	N20	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**	**16.36**	**16.31**	**2.33**	**5.65**	**15.91**

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	3/1/2022	3/6/2022	5	4	
2	Grading	Grading	3/7/2022	4/5/2022	5	22	
3	Paving	Paving	4/8/2022	5/1/2022	5	16	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Building Construction	Building Construction	5/1/2022	12/15/2022	5	164	
5	Architectural Coating	Architectural Coating	10/1/2022	11/1/2022	5	22	
6	Trenching	Trenching	3/7/2022	4/5/2022	5	22	

Acres of Grading (Site Preparation Phase): 12

Acres of Grading (Grading Phase): 66

Acres of Paving: 10

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,865; Non-Residential Outdoor: 622; Striped Parking Area: 11,515 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Plate Compactors	1	8.00	8	0.43
Site Preparation	Rollers	1	8.00	80	0.38
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Scrapers	2	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Paving	Rollers	3	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Trenching	Excavators	1	8.00	158	0.38
Trenching	Graders	1	8.00	187	0.41

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	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	11	28.00	0.00	194.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	81.00	32.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

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					0.0184	0.0000	0.0184	7.3100e-003	0.0000	7.3100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5200e-003	0.0712	0.0447	1.0000e-004		2.9600e-003	2.9600e-003		2.7300e-003	2.7300e-003	0.0000	9.0695	9.0695	2.9200e-003	0.0000	9.1425
Total	**6.5200e-003**	**0.0712**	**0.0447**	**1.0000e-004**	**0.0184**	**2.9600e-003**	**0.0214**	**7.3100e-003**	**2.7300e-003**	**0.0100**	**0.0000**	**9.0695**	**9.0695**	**2.9200e-003**	**0.0000**	**9.1425**

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	1.0000e-004	7.0000e-005	8.7000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2308	0.2308	1.0000e-005	1.0000e-005	0.2330
Total	**1.0000e-004**	**7.0000e-005**	**8.7000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**2.9000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2308**	**0.2308**	**1.0000e-005**	**1.0000e-005**	**0.2330**

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3.2 Site Preparation - 2022

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					8.2800e-003	0.0000	8.2800e-003	3.2900e-003	0.0000	3.2900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5200e-003	0.0712	0.0447	1.0000e-004		2.9600e-003	2.9600e-003		2.7300e-003	2.7300e-003	0.0000	9.0695	9.0695	2.9200e-003	0.0000	9.1425
Total	**6.5200e-003**	**0.0712**	**0.0447**	**1.0000e-004**	**8.2800e-003**	**2.9600e-003**	**0.0112**	**3.2900e-003**	**2.7300e-003**	**6.0200e-003**	**0.0000**	**9.0695**	**9.0695**	**2.9200e-003**	**0.0000**	**9.1425**

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	1.0000e-004	7.0000e-005	8.7000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2308	0.2308	1.0000e-005	1.0000e-005	0.2330
Total	**1.0000e-004**	**7.0000e-005**	**8.7000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**2.9000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2308**	**0.2308**	**1.0000e-005**	**1.0000e-005**	**0.2330**

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3.3 Grading - 2022

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					0.1013	0.0000	0.1013	0.0402	0.0000	0.0402	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0454	0.4823	0.3591	7.9000e-004		0.0203	0.0203		0.0187	0.0187	0.0000	68.9118	68.9118	0.0222	0.0000	69.4671
Total	**0.0454**	**0.4823**	**0.3591**	**7.9000e-004**	**0.1013**	**0.0203**	**0.1216**	**0.0402**	**0.0187**	**0.0589**	**0.0000**	**68.9118**	**68.9118**	**0.0222**	**0.0000**	**69.4671**

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	4.5000e-004	0.0166	3.5300e-003	6.0000e-005	1.6500e-003	1.5000e-004	1.8000e-003	4.5000e-004	1.4000e-004	6.0000e-004	0.0000	6.0741	6.0741	2.0000e-004	9.6000e-004	6.3660
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	8.7000e-004	6.2000e-004	7.4700e-003	2.0000e-005	2.4400e-003	1.0000e-005	2.4600e-003	6.5000e-004	1.0000e-005	6.6000e-004	0.0000	1.9743	1.9743	6.0000e-005	6.0000e-005	1.9932
Total	**1.3200e-003**	**0.0172**	**0.0110**	**8.0000e-005**	**4.0900e-003**	**1.6000e-004**	**4.2600e-003**	**1.1000e-003**	**1.5000e-004**	**1.2600e-003**	**0.0000**	**8.0484**	**8.0484**	**2.6000e-004**	**1.0200e-003**	**8.3591**

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3.3 Grading - 2022

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					0.0456	0.0000	0.0456	0.0181	0.0000	0.0181	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0454	0.4823	0.3591	7.9000e-004		0.0203	0.0203		0.0187	0.0187	0.0000	68.9117	68.9117	0.0222	0.0000	69.4670
Total	**0.0454**	**0.4823**	**0.3591**	**7.9000e-004**	**0.0456**	**0.0203**	**0.0659**	**0.0181**	**0.0187**	**0.0368**	**0.0000**	**68.9117**	**68.9117**	**0.0222**	**0.0000**	**69.4670**

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	4.5000e-004	0.0166	3.5300e-003	6.0000e-005	1.6500e-003	1.5000e-004	1.8000e-003	4.5000e-004	1.4000e-004	6.0000e-004	0.0000	6.0741	6.0741	2.0000e-004	9.6000e-004	6.3660
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	8.7000e-004	6.2000e-004	7.4700e-003	2.0000e-005	2.4400e-003	1.0000e-005	2.4600e-003	6.5000e-004	1.0000e-005	6.6000e-004	0.0000	1.9743	1.9743	6.0000e-005	6.0000e-005	1.9932
Total	**1.3200e-003**	**0.0172**	**0.0110**	**8.0000e-005**	**4.0900e-003**	**1.6000e-004**	**4.2600e-003**	**1.1000e-003**	**1.5000e-004**	**1.2600e-003**	**0.0000**	**8.0484**	**8.0484**	**2.6000e-004**	**1.0200e-003**	**8.3591**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving - 2022

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	8.3900e-003	0.0855	0.1060	1.6000e-004		4.5800e-003	4.5800e-003		4.2200e-003	4.2200e-003	0.0000	13.8856	13.8856	4.4900e-003	0.0000	13.9978
Paving	0.0131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0215**	**0.0855**	**0.1060**	**1.6000e-004**		**4.5800e-003**	**4.5800e-003**		**4.2200e-003**	**4.2200e-003**	**0.0000**	**13.8856**	**13.8856**	**4.4900e-003**	**0.0000**	**13.9978**

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	3.4000e-004	2.4000e-004	2.9100e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.5000e-004	0.0000	2.6000e-004	0.0000	0.7692	0.7692	2.0000e-005	2.0000e-005	0.7766
Total	**3.4000e-004**	**2.4000e-004**	**2.9100e-003**	**1.0000e-005**	**9.5000e-004**	**1.0000e-005**	**9.6000e-004**	**2.5000e-004**	**0.0000**	**2.6000e-004**	**0.0000**	**0.7692**	**0.7692**	**2.0000e-005**	**2.0000e-005**	**0.7766**

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3.4 Paving - 2022

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	8.3900e-003	0.0855	0.1060	1.6000e-004		4.5800e-003	4.5800e-003		4.2200e-003	4.2200e-003	0.0000	13.8856	13.8856	4.4900e-003	0.0000	13.9978
Paving	0.0131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0215**	**0.0855**	**0.1060**	**1.6000e-004**		**4.5800e-003**	**4.5800e-003**		**4.2200e-003**	**4.2200e-003**	**0.0000**	**13.8856**	**13.8856**	**4.4900e-003**	**0.0000**	**13.9978**

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	3.4000e-004	2.4000e-004	2.9100e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.5000e-004	0.0000	2.6000e-004	0.0000	0.7692	0.7692	2.0000e-005	2.0000e-005	0.7766
Total	**3.4000e-004**	**2.4000e-004**	**2.9100e-003**	**1.0000e-005**	**9.5000e-004**	**1.0000e-005**	**9.6000e-004**	**2.5000e-004**	**0.0000**	**2.6000e-004**	**0.0000**	**0.7692**	**0.7692**	**2.0000e-005**	**2.0000e-005**	**0.7766**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2022

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	0.1488	1.3749	1.4300	2.3600e-003		0.0709	0.0709		0.0666	0.0666	0.0000	203.6144	203.6144	0.0499	0.0000	204.8624
Total	**0.1488**	**1.3749**	**1.4300**	**2.3600e-003**		**0.0709**	**0.0709**		**0.0666**	**0.0666**	**0.0000**	**203.6144**	**203.6144**	**0.0499**	**0.0000**	**204.8624**

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	6.1400e-003	0.1495	0.0454	5.6000e-004	0.0173	1.6600e-003	0.0189	4.9900e-003	1.5800e-003	6.5800e-003	0.0000	54.8168	54.8168	1.2000e-003	7.9800e-003	57.2253
Worker	0.0187	0.0135	0.1612	4.6000e-004	0.0527	2.8000e-004	0.0530	0.0140	2.6000e-004	0.0143	0.0000	42.5765	42.5765	1.3500e-003	1.2500e-003	42.9826
Total	**0.0249**	**0.1630**	**0.2066**	**1.0200e-003**	**0.0700**	**1.9400e-003**	**0.0719**	**0.0190**	**1.8400e-003**	**0.0209**	**0.0000**	**97.3932**	**97.3932**	**2.5500e-003**	**9.2300e-003**	**100.2079**

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3.5 Building Construction - 2022

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	0.1488	1.3749	1.4300	2.3600e-003		0.0709	0.0709		0.0666	0.0666	0.0000	203.6142	203.6142	0.0499	0.0000	204.8622
Total	**0.1488**	**1.3749**	**1.4300**	**2.3600e-003**		**0.0709**	**0.0709**		**0.0666**	**0.0666**	**0.0000**	**203.6142**	**203.6142**	**0.0499**	**0.0000**	**204.8622**

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	6.1400e-003	0.1495	0.0454	5.6000e-004	0.0173	1.6600e-003	0.0189	4.9900e-003	1.5800e-003	6.5800e-003	0.0000	54.8168	54.8168	1.2000e-003	7.9800e-003	57.2253
Worker	0.0187	0.0135	0.1612	4.6000e-004	0.0527	2.8000e-004	0.0530	0.0140	2.6000e-004	0.0143	0.0000	42.5765	42.5765	1.3500e-003	1.2500e-003	42.9826
Total	**0.0249**	**0.1630**	**0.2066**	**1.0200e-003**	**0.0700**	**1.9400e-003**	**0.0719**	**0.0190**	**1.8400e-003**	**0.0209**	**0.0000**	**97.3932**	**97.3932**	**2.5500e-003**	**9.2300e-003**	**100.2079**

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3.6 Architectural Coating - 2022

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					
Archit. Coating	0.0429					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2500e-003	0.0155	0.0200	3.0000e-005		9.0000e-004	9.0000e-004		9.0000e-004	9.0000e-004	0.0000	2.8086	2.8086	1.8000e-004	0.0000	2.8132
Total	**0.0452**	**0.0155**	**0.0200**	**3.0000e-005**		**9.0000e-004**	**9.0000e-004**		**9.0000e-004**	**9.0000e-004**	**0.0000**	**2.8086**	**2.8086**	**1.8000e-004**	**0.0000**	**2.8132**

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	5.0000e-004	3.6000e-004	4.2700e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1282	1.1282	4.0000e-005	3.0000e-005	1.1390
Total	**5.0000e-004**	**3.6000e-004**	**4.2700e-003**	**1.0000e-005**	**1.4000e-003**	**1.0000e-005**	**1.4000e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.1282**	**1.1282**	**4.0000e-005**	**3.0000e-005**	**1.1390**

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3.6 Architectural Coating - 2022

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					
Archit. Coating	0.0429					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2500e-003	0.0155	0.0200	3.0000e-005		9.0000e-004	9.0000e-004		9.0000e-004	9.0000e-004	0.0000	2.8086	2.8086	1.8000e-004	0.0000	2.8132
Total	**0.0452**	**0.0155**	**0.0200**	**3.0000e-005**		**9.0000e-004**	**9.0000e-004**		**9.0000e-004**	**9.0000e-004**	**0.0000**	**2.8086**	**2.8086**	**1.8000e-004**	**0.0000**	**2.8132**

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	5.0000e-004	3.6000e-004	4.2700e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1282	1.1282	4.0000e-005	3.0000e-005	1.1390
Total	**5.0000e-004**	**3.6000e-004**	**4.2700e-003**	**1.0000e-005**	**1.4000e-003**	**1.0000e-005**	**1.4000e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.1282**	**1.1282**	**4.0000e-005**	**3.0000e-005**	**1.1390**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Trenching - 2022

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	6.7900e-003	0.0773	0.0549	1.3000e-004		2.7800e-003	2.7800e-003		2.5600e-003	2.5600e-003	0.0000	11.3937	11.3937	3.6800e-003	0.0000	11.4858
Total	**6.7900e-003**	**0.0773**	**0.0549**	**1.3000e-004**		**2.7800e-003**	**2.7800e-003**		**2.5600e-003**	**2.5600e-003**	**0.0000**	**11.3937**	**11.3937**	**3.6800e-003**	**0.0000**	**11.4858**

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	1.5000e-004	1.1000e-004	1.3300e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3526	0.3526	1.0000e-005	1.0000e-005	0.3559
Total	**1.5000e-004**	**1.1000e-004**	**1.3300e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3526**	**0.3526**	**1.0000e-005**	**1.0000e-005**	**0.3559**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Trenching - 2022

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	6.7900e-003	0.0773	0.0549	1.3000e-004		2.7800e-003	2.7800e-003		2.5600e-003	2.5600e-003	0.0000	11.3937	11.3937	3.6800e-003	0.0000	11.4858
Total	**6.7900e-003**	**0.0773**	**0.0549**	**1.3000e-004**		**2.7800e-003**	**2.7800e-003**		**2.5600e-003**	**2.5600e-003**	**0.0000**	**11.3937**	**11.3937**	**3.6800e-003**	**0.0000**	**11.4858**

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	1.5000e-004	1.1000e-004	1.3300e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3526	0.3526	1.0000e-005	1.0000e-005	0.3559
Total	**1.5000e-004**	**1.1000e-004**	**1.3300e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3526**	**0.3526**	**1.0000e-005**	**1.0000e-005**	**0.3559**

4.0 Operational Detail - Mobile

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.1 Mitigation Measures Mobile

	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	0.0307	0.0322	0.2931	6.2000e-004	0.0795	4.2000e-004	0.0799	0.0212	3.9000e-004	0.0216	0.0000	60.6771	60.6771	3.5300e-003	2.6900e-003	61.5679
Unmitigated	0.0307	0.0322	0.2931	6.2000e-004	0.0795	4.2000e-004	0.0799	0.0212	3.9000e-004	0.0216	0.0000	60.6771	60.6771	3.5300e-003	2.6900e-003	61.5679

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	89.79	89.79	89.79	214,572	214,572
Parking Lot	0.00	0.00	0.00		
Total	89.79	89.79	89.79	214,572	214,572

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	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
General Office Building	0.577637	0.055806	0.175331	0.118814	0.021880	0.005573	0.007435	0.007088	0.000537	0.000305	0.024935	0.001797	0.002862

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Parking Lot	0.577637	0.055806	0.175331	0.118814	0.021880	0.005573	0.007435	0.007088	0.000537	0.000305	0.024935	0.001797	0.002862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable 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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-0.3972	-0.3972	-0.0001	0.0000	-0.4000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	11.6425	11.6425	1.3200e-003	1.6000e-004	11.7235
NaturalGas Mitigated	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.0746	1.0746	2.0000e-005	2.0000e-005	1.0810
NaturalGas Unmitigated	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.0746	1.0746	2.0000e-005	2.0000e-005	1.0810

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	tons/yr										MT/yr					
General Office Building	20136.6	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.0746	1.0746	2.0000e-005	2.0000e-005	1.0810
Parking Lot	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		**1.1000e-004**	**9.9000e-004**	**8.3000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**1.0746**	**1.0746**	**2.0000e-005**	**2.0000e-005**	**1.0810**

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					
General Office Building	20136.6	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.0746	1.0746	2.0000e-005	2.0000e-005	1.0810
Parking Lot	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		**1.1000e-004**	**9.9000e-004**	**8.3000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**1.0746**	**1.0746**	**2.0000e-005**	**2.0000e-005**	**1.0810**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	21342.3	2.8072	3.2000e-004	4.0000e-005	2.8267
Parking Lot	67172	8.8353	1.0100e-003	1.2000e-004	8.8968
Total		**11.6425**	**1.3300e-003**	**1.6000e-004**	**11.7235**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	-1510	-0.1986	0.0000	0.0000	-0.2000
Parking Lot	-1510	-0.1986	0.0000	0.0000	-0.2000
Total		**-0.3972**	**0.0000**	**0.0000**	**-0.4000**

6.0 Area Detail

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0221	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.0600e-003	4.0600e-003	1.0000e-005	0.0000	4.3200e-003
Unmitigated	0.0221	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.0600e-003	4.0600e-003	1.0000e-005	0.0000	4.3200e-003

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	4.6500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0173					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.0600e-003	4.0600e-003	1.0000e-005	0.0000	4.3200e-003
Total	**0.0221**	**2.0000e-005**	**2.0800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.0600e-003**	**4.0600e-003**	**1.0000e-005**	**0.0000**	**4.3200e-003**

Pittsburg Solar RV/Boat Storage Project - Contra Costa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

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	4.6500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0173					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.0600e-003	4.0600e-003	1.0000e-005	0.0000	4.3200e-003
Total	**0.0221**	**2.0000e-005**	**2.0800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.0600e-003**	**4.0600e-003**	**1.0000e-005**	**0.0000**	**4.3200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.1877	0.0401	1.4000e-004	1.2305
Unmitigated	0.1877	0.0401	1.4000e-004	1.2305

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.176312 / 0.135078	0.1877	0.0401	1.4000e-004	1.2305
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.1877**	**0.0401**	**1.4000e-004**	**1.2305**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.176312 / 0.135078	0.1877	0.0401	1.4000e-004	1.2305
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.1877**	**0.0401**	**1.4000e-004**	**1.2305**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2334	0.0138	0.0000	0.5783
Unmitigated	0.2334	0.0138	0.0000	0.5783

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	1.15	0.2334	0.0138	0.0000	0.5783
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.2334**	**0.0138**	**0.0000**	**0.5783**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	1.15	0.2334	0.0138	0.0000	0.5783
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.2334**	**0.0138**	**0.0000**	**0.5783**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

Pittsburg Boat/RV Storage

Last Updated: 12/2/2021

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors **[1]**:

HP: 0 to 100	0.0588	HP: Greater than 100	0.0529

Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT

Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons)
Plate Compactors	1	8	8	0.43	Site Prep	6.47
Rollers	1	8	80	0.38	Site Prep	57.17
Rubber Tired Dozer	1	8	247	0.40	Site Prep	167.12
Scrapers	2	8	367	0.48	Site Prep	595.94
Tractors/Loaders/Backhoes	1	8	97	0.37	Site Prep	67.49
Graders	1	8	187	0.41	Site Prep	129.69
Graders	1	6	187	0.41	Grading	534.96
Excavators	2	8	158	0.38	Grading	1,117.13
Plate Compactors	1	8	8	0.43	Grading	35.58
Rubber Tired Dozer	1	8	247	0.40	Grading	919.15
Rubber Tired Loader	1	8	203	0.36	Grading	679.88
Scrapers	1	8	367	0.48	Grading	1,638.85
Tractors/Loaders/Backhoes	2	8	97	0.37	Grading	742.38
Rollers	1	8	80	0.38	Grading	314.41
Cranes	1	8	231	0.29	Building	4,645.82
Forklifts	3	8	89	0.20	Building	4,117.07
Generator Sets	1	8	84	0.74	Building	4,792.45
Tractors/Loaders/Backhoes	3	8	97	0.37	Building	8,301.21
Welders	1	8	46	0.45	Building	1,595.94
Air Compressor	1	6	78	0.48	Arch Coating	211.21
Rollers	3	8	80	0.38	Paving	943.24
Paving Equipment	1	8	132	0.36	Paving	442.09
Pavers	1	8	130	0.42	Paving	507.95
Tractors/Loaders/Backhoes	1	8	97	0.37	Paving	371.19
Excavtors	1	8	158	0.38	Trenching	558.56
Graders	1	8	187	0.41	Trenching	713.28
					Total Fuel Used	**34,206.23**
						(Gallons)

Construction Phase	Days of Operation
Demolition Phase	0
Site Preparation Phase	4
Grading/Trenching Phase	22
Building Construction Phase	164
Paving Phase	16
Architectural Coating Phase	22
Total Days	228

WORKER TRIPS				
Constuction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
Demolition	24.1	0	10.8	0.00
Site Prep Phase	24.1	18	10.8	32.27
Grading Phase	24.1	28	10.8	276.05
Building Phase	24.1	81	10.8	5953.00
Paving Phase	24.1	15	10.8	107.55
Architectural Coating Phase	24.1	16	10.8	157.74
Trenching	24.1	5	10.8	49.29
			Total	**6,526.61**

HAULING AND VENDOR TRIPS				
Trip Class	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
HAULING TRIPS				
Demolition	7.5	0	20.0	0.00
Site Prep Phase	7.5	0	20.0	0.00
Grading Phase	7.5	0	20.0	0.00
Building Phase	7.5	0	20.0	0.00
Paving Phase	7.5	0	20.0	0.00
Architectural Coating Phase	7.5	0	20.0	0.00
			Total	**-**
VENDOR TRIPS				
Demolition	7.5	0	7.3	0.00
Site Prep Phase	7.5	0	7.3	0.00
Grading Phase	7.5	0	7.3	0.00
Building Phase	7.5	32	7.3	5108.05
Paving Phase	7.5	0	7.3	0.00
Architectural Coating Phase	7.5	0	7.3	0.00
			Total	**5,108.05**

Total Gasoline Consumption (gallons)	**6,526.61**
Total Diesel Consumption (gallons)	**39,314.29**

Sources:

[1] 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?Dockey=P100UXEN.pdf.

[2] 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-and-data/national-transportation-statistics/223001/ntsentire2018q4.pdf.

Appendix BIO

Planning Survey Report

Marcus H. Bole & Associates
An Environmental Consulting Firm

October 17, 2021

Chris Koenig
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Danville, CA 94526
Chris@pacificprop.net

City of Pittsburg Planning
Attn: Hector Rojas, AICP
East Contra Costa County HCP/NCCP
Attn: Joanne Chiu

PLANNING SURVEY REPORT (PSR) SOLAR RV/BOAT AND MINI-STORAGE, 3478 PITTSBURG-ANTIOCH HIGHWAY, PITTSBURG, CA 94565. APN 074-100-018. CONTRA COSTA COUNTY APPLICATION AP-17-1278 (PPR). MHBA FILE 0907-2121-3760.

1.0 INTRODUCTION

During September and October, 2021, a Planning Level and Species-Specific Biological Resource Evaluation and Wetland Determination was conducted by Marcus H. Bole & Associates (MHBA) on a 12.51-acre study area of ruderal non-native grasslands (subject property) located at 3478 Pittsburg-Antioch Highway, Pittsburg, Contra Costa County, California. The subject property is located on the U.S. Geological Survey (USGS) Antioch North 7.5-minute quadrangle, Township 13 North, Range 1 East, Los Medanos Land Grant. The majority of the subject property is relatively flat with elevations ranging from approximately 20 feet to 40 feet above sea level near the eastern and southern perimeters of the project site. The Contra Costa Canal is located immediately to the east and off the property and will not be affected by the proposed development of the Solar RV/Boat and Mini-Storage project. The Contra Costa Canal is a man-made feature that is classified as an aqueduct. As such, no set-back from the canal is mandated or recommended.

MHBA'S onsite evaluations confirmed that land cover within the subject property consists of ruderal non-native grassland habitat (11.57-acres), graveled surfaces (0.56-acres), and one seasonal wetland (0.39-acres). A field verified land cover map is attached (Attachment A).

The proposed development will be a self-storage facility consisting of prefabricated, modular storage units on 9.2-acres. The storage units will be placed on an asphalt parking lot. The project is proposing to screen the units with use of landscaping and wrought iron fencing. In addition, the project will include a solar generation facility. The project will result in 9.2-acres of permanent impacts to ruderal non-native grasslands subject to mitigation through the East Contra County Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP).

2.0 METHODOLOGY

Field surveys of biological resources included a reconnaissance-level evaluation of plants and animals observed in and near the subject property, habitat assessments for special status plant and wildlife species, and a determination of wetland habitats within the subject property. Biological and botanical surveys were conducted based on the California Department of Fish and Wildlife's (CDFW) Natural Diversity Database (CNDDB, October 2021), the United States Fish & Wildlife Service's (USFWS) IPaC Resource List, the California Native Plant Society's (CNPS) list of rare and endangered plants and the East Contra County HCP/NCCP) database of Covered Species and Conditions on Covered Activities. All species lists were derived from the United States Geological Survey (USGS) "Antioch North, Antioch South, Brentwood, Jersey Island, Rio Vista, Birds Landing, Denverton, Honker Bay and Clayton" 7.5 minute quadrangles. Based on the results of the species lists, appropriate biological and botanical surveys were conducted. Species habitat surveys were conducted during the September-October 2021 time period by Marcus H. Bole & Associates' (MHBA) Senior Wildlife Biologist Marcus H. Bole[1]. The species habitat surveys were conducted by walking all areas of the property (and surrounding 500 foot buffer) and evaluating potential habitat for special-status species based on vegetation composition and structure, surrounding area, presence of predatory species, microclimate, and available resources (e.g. prey remains, nesting burrows, cast pellet, eggshell fragments, excrement, etc.). A general botanical survey and habitat evaluation for rare plant botanical species was conducted during the September-October 2021 time period by MHBA's senior botanist Charlene J. Bole. The general botanical survey and habitat evaluation for rare plant botanical species was conducted by walking all areas of the property area while taking inventory of general botanical species and searching for special-status plant species and their habitats. A determination of Waters of the U.S. was conducted on October 8, 2021 by Senior Wetland Scientist Marcus H. Bole and was conducted under the guidelines of the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008).

2.1 Regulatory Requirements

The following describes federal, state, and local environmental laws and policies that are relevant to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) review process.

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (ESA) in 1973 to protect species that are endangered or threatened with extinction. The ESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend. The ESA makes it unlawful to "take" a listed animal without a permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct". Through regulations, the

[1] Marcus H. Bole is a Senior Wildlife Biologist and Senior Wetland Scientist and an East Contra County HCP/NCCP approved biologist. Resume is Attachment E.

term “harm” is defined as “an act which actually kills or injures wildlife". Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e. exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA.

Waters of the United States, Clean Water Act, Section 404

The US Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into jurisdictional waters of the United States, under the Clean Water Act (§404). The term “waters of the United States” is an encompassing term that includes “wetlands” and “other waters”. Wetlands have been defined for regulatory purposes as follows: “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3). Wetlands generally include swamps, marshes, bogs, and similar areas.” Other Waters of the United States (OWUS) are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (i.e., hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4). The USACE may issue either individual permits on a case-by-case basis or general permits on a program level. General permits are pre-authorized and are issued to cover similar activities that are expected to cause only minimal adverse environmental effects. Nationwide permits are general permits issued to cover particular fill activities. All nationwide permits have general conditions that must be met for permits issued for a particular project, as well as specific regional conditions that apply to each nationwide permit. Until recently, isolated swales and ephemeral drainages would not have been considered United States Army Corps of Engineers jurisdictional in accordance with the U.S. Environmental Protection Agency’s Navigable Waters Protection Rule (NWPR). However, on August 30, 2021, in the case of Pascua Yaqui Tribe v. U.S Environmental Protection Agency, the U.S. District Court for the District of Arizona vacated and remanded the NWPR. In light of this order, the U.S. Environmental Protection Agency and the USACE have halted implementation of the NWPR and, until further notice, are interpreting “waters of the United Sates” consistent with the pre-2015 regulatory regime. Therefore, seasonal swales if they meet the criteria set forth in the *United States Army Corps of Engineers Wetlands Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008), would now be considered an “other Water of the

United States" and subject to federal jurisdiction in accordance with the Clean Water Act (consistent with the pre-2015 regulatory regime 40 CFR 230.3(s). Any impact to the seasonal swale would be subject to mitigation measures in accordance the USACE directives and mitigation measures outlined in the East Contra Costa HCP/NCCP.

Clean Water Act, Section 401

The Clean Water Act (§401) requires water quality certification and authorization for placement of dredged or fill material in wetlands and OWUS. In accordance with the Clean Water Act (§401), criteria for allowable discharges into surface waters have been developed by the State Water Resources Control Board, Division of Water Quality. The resulting requirements are used as criteria in granting National Pollutant Discharge Elimination System (NPDES) permits or waivers, which are obtained through the Regional Water Quality Control Board (RWQCB) per the Clean Water Act (§402). Any activity or facility that will discharge waste (such as soils from construction) into surface waters, or from which waste may be discharged, must obtain an NPDES permit or waiver from the RWQCB. The RWQCB evaluates an NPDES permit application to determine whether the proposed discharge is consistent with the adopted water quality objectives of the basin plan.

California Endangered Species Act

The California Endangered Species Act (CESA) is similar to the ESA, but pertains to state-listed endangered and threatened species. The CESA requires state agencies to consult with the CDFW when preparing documents to comply with the CEQA. The purpose is to ensure that the actions of the lead agency do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species. In addition to formal listing under the federal and state endangered species acts, "species of special concern" receive consideration by CDFW. Species of special concern are those whose numbers, reproductive success, or habitat may be threatened.

California Fish and Wildlife Code

The California Fish and Wildlife Code (CFWC) (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (all owls except barn owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFWC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto".

Rare and Endangered Plants

The CNPS maintains a list of plant species native to California with low population numbers, limited distribution, or otherwise threatened with extinction. This information is published in the

Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The CNPS California Rare Plant Rank (CRPR) categorizes plants as the following:

Rank 1A: Plants presumed extinct in California;
Rank 1B: Plants rare, threatened, or endangered in California or elsewhere;
Rank 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
Rank 3: Plants about which we need more information; and
Rank 4: Plants of limited distribution.

The California Native Plant Protection Act (CFGC §1900-1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered as defined by CDFW. An exception to this prohibition allows landowners, under specific circumstances, to take listed plant species, provided that the owners first notify CDFW and give the agency at least 10 days to retrieve (and presumably replant) the plants before they are destroyed. Fish and Wildlife Code §1913 exempts from the 'take' prohibition 'the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way".

California Environmental Quality Act Guidelines §15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines §15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled based on the definition in the ESA and the section of the CFGC dealing with rare, threatened, and endangered plants and animals. The CEQA Guidelines (§15380) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (e.g. candidate species, species of concern) would occur. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan

The East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) is intended to provide an effective framework to protect natural resources in eastern Contra Costa County, while improving and streamlining the environmental permitting process for impacts on endangered species. The Plan will allow Contra Costa County (County), the Contra Costa County Flood Control and Water Conservation District (County Flood Control District), the East Bay Regional Park District (EBRPD) the Cities of Brentwood, Clayton, Oakley, and Pittsburg and the Implementing Entity that will be established to implement the Plan (collectively, the Permittees) to control endangered species permitting for activities and projects in the region that they perform or approve. The Plan will also provide for comprehensive species, wetlands, and ecosystem conservation and contribute to the recovery of endangered species in northern California. The Plan will avoid project-by-project permitting that is generally costly and

time consuming for applicants and often results in uncoordinated and biologically ineffective mitigation. The Permittees are asking the U.S. Fish and Wildlife Service (USFWS) to issue to them a 30-year permit that authorizes incidental take on listed species under the federal Endangered Species Act (ESA). The Permittees are also asking the California Department of Fish and Game (CDFG) to issue to them a 30-year permit that authorizes take of all covered species under the Natural Community Conservation Planning Act (NCCPA). The local jurisdictions will then be able to use those permits to extend take authorization to development and other activities that meet the terms of the Plan. USFWS and CDFG will also provide assurances to local jurisdictions and Plan participants that no further commitments of funds, land, or water will be required to address impacts on covered species beyond that described in the Plan. Local jurisdictions will provide similar assurances to local applicants.

This Plan proposes to provide take authorization for 28 listed and non-listed species (i.e., covered species). The Plan includes conservation measures to protect all 28 covered species, whether or not they are currently listed. Accordingly, should any non-listed covered species become listed during the permit term, additional conservation measures will not be required. Species proposed for coverage include: Townsend's western big-eared bat, Longhorn fairy shrimp, San Joaquin kit fox, Vernal pool fairy shrimp, Midvalley fairy shrimp, Tricolored Blackbird, Vernal pool tadpole shrimp, Golden Eagle, Western Burrowing Owl, Mount Diablo manzanita, Swainson's hawk, Brittlescale, San Joaquin spearscale, Silvery legless lizard, Big tarplant, Alameda whipsnake, Mount Diablo fairy lantern, Giant garter snake, Recurved larkspur, Western pond turtle, Round-leaved filaree, Diablo helianthella, California tiger salamander, Brewer's dwarf flax, California red-legged frog, Showy madia, Foothill yellow-legged frog, and Adobe navarretia.

3.0 SETTING

The subject property is a 12.51-acre vacant, undeveloped parcel located on the Pittsburg-Antioch Highway in the City of Pittsburg, California (APN 074-100-018). The subject property is located in a rural-industrial part of the city and is bordered by industrial/commercial development to the east and west, Union Pacific railroad tracks to the south, and the Pittsburg-Antioch Highway to the north. The vegetative community descriptions and nomenclature described in this section generally follow the classification system provided in Sawyer and Keeler-Wolf's *A Manual of California Vegetation* (1995), Mayer and Laudenslayer's *A Guide to Wildlife Habitats of California* (1988), and the *Jepson Manual, 2nd edition* (Hickman 1993).

4.0 RESULTS

4.1 Description of the Existing Biological and Physical Conditions

The following describes the biological and physical conditions within the property and within the surrounding area.

4.1.1 Property Description

The property is a 12.51-acre parcel within the East Contra Costa HCP/NCCP Development Fee Zone 1. The majority of the property (11.57-acres) is ruderal, non-native grasses and forbs. A small area has been graded and filled with gravel (0.56-acres). A small, well-defined seasonal wetland (0.39-acres) is located in the northeastern portion of the property.

4.1.2 Physical & Biological Conditions

Disturbed, Ruderal, Non-Native Grassland

Vegetation in the majority of the property consists of ruderal, non-native grasses and forbs. The property has been graded and lightly disked. Disturbed, ruderal, non-native grasslands are those dominated by plant species introduced by humans and established or maintained by human disturbances or activities. Some areas are entirely artificial such as those that have been filled with gravel to provide year around vehicle access. Ruderal vegetation is dominated by soft chess (*Bromus hordeaceus*), slender wild oats (*Avena barbata*), red brome (*Bromus madritensis spp*.), mustard (*Hirscheldia spp. & Brassica nigra*), and meadow fescue (*Festuca pratensis*).

Native and introduced wildlife species are tolerant of human activities (road traffic, surrounding commercial/industrial activities) in disturbed non-native grassland habitats. Common wildlife observed onsite include the northern mockingbird (*Mimus polyglottos*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), Western meadowlark (*Sturnella neglecta*), American robin (*Turdus migratorius*), and the American pipit (*Anthus rubescens*). Also observed are mammals such as raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), house mouse (*Mus musculus*), and the black-tailed jackrabbit (*Lepus calif*ornicus).

Seasonal Wetlands

A small (0.39-acre) seasonal wetland was evaluated and delineation in the northeastern portion of the property. The seasonal wetland is dominated by creeping spikerush (*Eleocharis macrostachya*), annual beard grass (*Polypogon monspeliensis*), broadleaf pepperweed (*Lepidium latifolium)*, common tule (*Schoenoplectus acutus var. occidentalis*), and Mediterranean barely (*Hordeum marinum ssp. gussoneanum*). A single red willow (*Salix laevigata*) and a Fremont's cottonwood (*Populus fremontii*) were observed along the edges of the seasonal wetland. Wetland Data Sheets were prepared for all areas that exhibited a potential to support wetland habitats (Appendix D)

Special Status Plant Species

According to the CDFW's CNDDB, more than 23 special-status plant species are known to occur in the vicinity of the subject property. These plants occur is specialized habitats, i.e., brackish and freshwater marshes, swamps, and riparian scrub. It is highly unlikely that special-status plants occur within the subject property since the project area has been extensively disturbed over the years and there are areas of gravel scattered over the ground. No impacts to rare plants are expected.

According to CDFW's CNDDB, more than 15 special-status wildlife species are known to occur in the vicinity of the subject property. The only special status species that has the potential to occur on or in the immediate vicinity of the subject property is the western burrowing owl (*Athene cunicularia*). The Contra Costa County HCP has indicated that the property's ruderal grassland habitat is considered suitable breeding and foraging habitat for the western burrowing owl. During onsite surveys MHBA's biologists did not detect the presence of the owl; however, the site does support the California ground squirrel that typically provides the burrows used by the western burrowing owl for nesting and general habitation in the region of the subject property. Only a few burrows were found onsite and those burrows did not exhibit the presence of the owl (molted feathers, cast pellets, prey remains, eggshell fragments, or excrement).

4.2 Regional Species and Habitats of Concern

The following table is a list of species that have the potential to occur within or near the subject property and is composed of special-status species within the Antioch North, Antioch South, Brentwood, Jersey Island, Rio Vista, Birds Landing, Denverton, Honker Bay and Clayton" 7.5 minute quadrangles. Species lists reviewed, and which are incorporated in the following table, include the CDFW, USFWS, CNDDB and Contra Costa County HCP/NCCP species lists for those special status species within five miles of the subject property. Species that have the potential to occur within the project area are based on an evaluation of suitable habitat to support these species and observations made during biological surveys. Not all species listed within the following table have the potential to occur within the project area based on unsuitable habitat.

Table 1. Listed and Proposed Species Potentially Occurring or Known to Occur within five miles of (APN 074-100-018)

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	**General Habitat Description**	**Habitat Present/ Habitat Absent**	**Rationale**
INVERTEBRATES				
Valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)*	FT/_/_	Blue elderberry shrubs usually associated with riparian areas.	A/HA	There are no elderberry shrubs within the property or within 1,000 feet of the property.
Vernal pool fairy shrimp *(Branchinecta lynchi)*	FT/_/_	Moderately turbid, deep, cool-water vernal pool.	A/HA	There are no vernal pools within or near the property.

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	**General Habitat Description**	**Habitat Present/ Habitat Absent**	**Rationale**
Vernal pool tadpole shrimp *(Lepidurus packardi)*	FE/_/_	Vernal pools, swales, and ephemeral freshwater habitat.	A/HA	There are no vernal pools within or near the property.
REPTILES AND AMPHIBIANS				
California red-legged frog *(Rana draytonii)*	FT/SSC/_	Quiet pools of streams, marshes and occasionally ponds. (sea level - 4,500 ft elevation)	A/HA	There is no suitable habitat within or near the property. None observed.
Giant garter snake *(Thamnophis gigas)*	FT/ST/_	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes ponds, sloughs, small lakes, and there associated uplands.	A/HA	There is no suitable habitat within the property. None observed.
Western pond turtle *(Emys marmorata)*	_/_/SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches. Needs basking sites and suitable upland habitat.	A/HA	There is no suitable habitat within or near the property. None observed.
California tiger salamander *(Ambystoma californiense)*	FT/ST/_	Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	A/HA	There is no suitable habitat within or near the property to support this species.
FISH				
Delta smelt (*Hypomesus transpacificus)*	FT/SE/_	Sacramento-San Joaquin Estuary	A/HA	The Sacramento River is not part of this project.
BIRDS				
Least Bell's Vireo *(Vireo belli pusillus)*	FE/SE/_	Nests placed along margins of bushes or on twigs projecting into pathways, usually willows, baccharis, mesquite. Low riparian in dry river bottoms.	A/HA	There is no suitable habitat for this species within or near the property. None observed.
Song swallow *(Riparia riparia)*	_/_/SSC	Last found in Sacramento area in 1877. Nest made of	A/HA	There is no suitable habitat for this species within

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	**General Habitat Description**	**Habitat Present/ Habitat Absent**	**Rationale**
		decayed grasses, bit of tule and dead leaves.		or near the property.
Western burrowing owl *(Athene cunicularia)*	MBTA/SSC/_	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	A/HP	There is suitable habitat for this species within the property. Preconstruction surveys and Biological monitoring recommended.
Swainson's hawk *(Buteo swainsoni)*	MBTA/ST/_	Open grasslands and shrub lands.	A/HP	Property supports suitable foraging habitat. CNDDB lists nest trees within ½ mile of property.
Tri-colored black bird *(Agelaius tricolor)*	MBTA/SSC/_	Marshes and swamps, agricultural irrigation ditches, blackberry brambles and grasslands	A/HA	There is no suitable habitat for this species within or near the property.
Western yellow-billed cuckoo *(Coccyzus americanus occidentalis)*	FC/SE/_	Open woodlands, riparian areas, orchards and moist, overgrown thickets	A/HA	There is no suitable habitat for this species within or near the property. None observed.
White-tailed kite *(Elanus leucurus)*	MBTA/_/_	Open grasslands, meadows, or marshes for foraging, dense-topped trees for nesting and perching	A/HP	Property supports suitable foraging habitat. CNDDB lists nest trees within 5 miles of property. None observed.
Bank swallow *(Riparia riparia)*	_/ST/_	Nests in riparian and other lowland habitats. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes and ocean to dig nesting hole.	A/HA	There is no suitable habitat for this species within or near the property. None observed.
MAMMALS				
Hoary bat *(Lariurus cinereus)*	_/_/_	Roost in large to medium sized trees with dense foliage.	A/HA	There is no suitable habitat for

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	General Habitat Description	Habitat Present/ Habitat Absent	Rationale
				this species within or near the property. None observed.
PLANTS				
Keck's checkerbloom *(Sidalcea keckii)*	FE/_/1B.1	Cismontane woodland, valley and foothill grassland. Grassy slopes in blue oak woodland, on serpentine-derived, clay soils.	A/HA	There is no suitable habitat for this species within or near the property. None observed.
Ferris' milk-vetch *(Astragalus tener var. ferrisiae)*	_/_/1B.1	Meadows and seeps, valley and foothill grassland. Subalkaline flats, usually seen in dry, adobe soils.	A/HA	There is no suitable habitat for this species within or near the property. None observed.
Palmate-Bracted Bird's Beak *(Chloropyron palmatum)*	FE/SE/1B.1	Chenopod scrub, valley and foothill grassland. Usually on Pescadero silty clay which is alkaline, with *Distichlis, Frankenia*, etc.	A/HA	There is no suitable habitat for this species within or near the property. None observed.

CODE DESIGNATIONS

FE = Federal-listed Endangered
FT = Federal-listed Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FC = Federal Candidate Species
MBTA = Protected by the federal Migratory Bird Treaty Act
SE = California State-listed Endangered
ST = California State-listed Threatened
SR = California State-listed Rare
SSC = California State Species of Special Concern
SC = California Candidate
S1 = State Critically Imperiled
S2 = State Imperiled
S3 = State Vulnerable
S4 = State Apparently Secure

A = Species Absent
P = Species Present
HA = Habitat Absent
HP = Habitat Present
CH = Critical Habitat
MH = Marginal Habitat
CNPS 1B = Rare or Endangered in California or elsewhere
CNPS 2 = Rare or Endangered in California, more common elsewhere
CNPS 3 = More information is needed
CNPS 4 = Plants with limited distribution
0.1 =Seriously Threatened
0.2 = Fairly Threatened
0.3 = Not very Threatened

Project Impacts

With the implementation of preconstruction surveys and biological monitoring, there will be no direct or indirect impacts to the western burrowing owl. Direct impacts to all avian species will be avoided or minimized by beginning construction prior to the avian breeding season and/or

conducting a preconstruction nesting raptor/migratory bird survey prior to the start of construction activities if construction activities will begin during the avian breeding season. By beginning construction prior to the avian breeding season (between March 1 and August 30) there will be no active nests within ¼ mile of the property and direct impacts to avian species will not occur. Furthermore, beginning construction prior to the avian breeding season will also deter avian species from nesting within or within close proximity of the property, which will also avoid impacts to species. If active avian nests are found within 1,320 feet of the property, then construction buffers, as determined by a qualified biologist, will be established and no construction will occur within the buffer until the biologist has determined that the young have fledged.

Cumulative Effects

There are no foreseeable new actions that have potential to impact state and/or federally protected special status plant or wildlife species within or near the subject property, or contribute to cumulative negative effects to such species.

Table 2. Impacts and Recommended Avoidance/Minimization Measures

Target Species/ Communities	Impacts	Avoidance/ Minimization/ Mitigation Measures
Natural Communities	**None**	The majority of the subject property is disturbed, graded and does not support any natural plant or wildlife communities. The seasonal swale in the northeastern portion of the property has been largely undisturbed due to being significantly lower in elevation from the majority of the property. Due to being lower in elevation and undisturbed, the swale supports a seasonal wetland habitat.
Special Status Plant / Wildlife Species	**Less Than Significant with Mitigation Incorporated**	Avian species: prior to any ground disturbance related to covered activities, a USFWS/CDFW approved biologist will conduct a preconstruction survey on and within 500 feet of the subject property. If active nests (with eggs or living young) are found within 1,320 feet of the project area, no activity shall be permitted that might disturb or remove the active nests until the young birds are able to leave the nest and forage on their own. Setback buffers for the nests will vary depending on the species affected and the location of the nest. Buffer zones shall be determined on a case by case basis in consultation with a California Department of Fish and Wildlife/East Contra Costa HCP/NCCP approved biologist.
Seasonal Wetland Habitats	**Less Than Significant with Mitigation Incorporated**	The seasonal wetland within the northeastern portion of the subject property will be avoided and protected with a 25 foot buffer. During construction, the wetland and buffer will be fenced and protected with silt fence/straw wattles. Signage will be installed prohibiting access to the fenced off area.

5.0 RESULTS: PERMITS AND TECHNICAL STUDIES FOR SPECIAL LAWS OR CONDITIONS

5.1 Federal Endangered Species Act Consultation Summary

The USFWS was contacted during September and October 2021, for a list of endangered, threatened, sensitive and rare species, and their habitats within and near the subject property. The list was derived from special-status species that occur or have the potential to occur within the USGS North Antioch 7.5" Quadrangle and eight surrounding quadrangles. The list was referenced to determine appropriate biological and botanical surveys and potential species occurrence within the project area. (See Appendix B).

5.2 Federal Fisheries and Essential Fish Habitat Consultation Summary

Essential fish habitat (EFH) means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (Magnuson-Stevens Fishery Conservation and Management Act (MSA) §3). There is no habitat within the project area that provides "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," or special-status fish species managed under a fishery council (i.e chinook and coho). Therefore there is no EFH or the need for federal fisheries consultation.

5.3 California Endangered Species Act Consultation Summary

The CDFW was consulted during September and October 2021, for a list of endangered, threatened, sensitive and rare species, and their habitats within and near the subject property. The list was derived from special-status species that occur or have the potential to occur within the USGS North Antioch 7.5" Quadrangle and eight adjacent quadrangles. The list was referenced to determine appropriate biological and botanical surveys and potential species occurrence within the project area. (See Appendix B).

5.4 Wetlands and Others Water Coordination Summary

MHBA conducted a determination of Waters of the U.S. within the project area. Surveys were conducted on October 2021 by MHBA's Senior Wetland Scientist Marcus H. Bole. The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the *United States Army Corps of Engineers Wetlands Delineation Manual (1987); the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008); the U.S. *Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (2007); the *U.S. Army Corps of Engineers Ordinary High Flows and the Stage-Discharge Relationship in the Arid West Region* (2011); and the *U.S. Army Corps of Engineers Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (2008).

5.5 Determination of Waters of the United States

The intent of this determination is to identify wetlands and "Other Waters of the United States" that are present within the project area that could fall under the regulatory jurisdiction of the U. S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act. The *1987 Corps of Engineers Wetlands Delineation Manual* identifies several methodologies and combinations of methodologies that can be utilized in making jurisdictional determinations. Marcus H. Bole & Associates has employed the Routine On-Site Determination methodology for this study (as supplemented by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region,* dated September 2008). The Routine On-Site Determination method uses a three-parameter approach (vegetation, soils and hydrology) to identify and delineate the boundaries of jurisdictional wetlands. To be considered a wetland, all three positive wetland parameters must be present. These parameters include (1) a dominance of wetland vegetation, (2) a presence of hydric soils, and (3) hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding. Further description of these parameters is provided below:

1) Vegetation. Wetland vegetation includes those plants that possess physiological traits that allow them to grow and persist in soils subject to inundation and anaerobic soil conditions. Plant species are classified according to their probability of being associated with wetlands. Obligate (OBL) wetland plant species almost always occur in wetlands (more than 99 percent of the time), facultative wetland (FACW) plant species occur in wetlands most of the time (67 to 99 percent), and facultative (FAC) plant species have about an equal chance (33 to 66 percent) of occurring in wetlands as in uplands. For this study, vegetation was considered to meet the vegetation criteria if more than 50% of the vegetative cover was FAC or wetter. Data sheets were prepared for areas that showed a potential to support wetland vegetation (Appendix D). Except for the seasonal wetland in the northeastern portion of the property, no wetland plant species were identified within the project area.

2) Hydric Soils. Hydric soils are saturated, flooded, or ponded in the upper stratum long enough during the growing season to develop anaerobic conditions and favor the growth of wetland plants. Hydric soils include gleyed soils (soils with gray colors), or usually display indicators such as low chroma values, redoximorphic features, iron, or manganese concretions, or a combination of these indicators. Low chroma values are generally defined as having a value of 2 or less using the Munsell Soil Notations (Munsell, 1994). For this study a soil was considered to meet the hydric soil criteria for color if it had a chroma value of one or a chroma of two with redoximorphic features, or if the soil exhibited iron or manganese concretions. Onsite soils were identified as a mixture of graded cut-and-fill material and Rincon clay loam. Rincon clay loam soils are not listed as "hydric soils"; however, where ponding of precipitation due to topological features (swales) occurs during a long enough time period in the growing season, hydric soil indicators may be found. Except for the seasonal wetland in the northeastern portion of the property, no hydric soils were identified within the project area.

3) Hydrology. Wetlands by definition are seasonally inundated or saturated at or near the surface. In order for an area to have wetland hydrology, it has to be inundated or saturated for

5% of the growing season (approximately 12 days) (USDA, 1967). Indicators include visual soil saturation, flooding, watermarks, drainage patterns, encrusted sediment and plant deposits, cryptogrammic lichens, and algal mats. The seasonal wetland in the northeastern portion of the subject property is within a swale that allows seasonal precipitation to pond for at least 5% of the growing season. It is in this area that wetland plants and soils were identified.

Wetland Determination Results

Using the methodologies described in the *1987 Wetland Delineation Manual*, Marcus H. Bole & Associates evaluated and delineated a 0.39-acre seasonal wetland in the northeastern portion of the subject property. The seasonal wetland swale does not support vernal pool obligate plants and the soils do not appear to have a perched water table (duripan/hardpan) normally associated with vernal pools. The wetland swale is in an area that is significantly lower in elevation from the majority of the subject property and would be difficult to develop. The swale does not lie within a discernable drainage way, it was most likely created as a borrow pit when the Contra Costa Canal was constructed. The swale collects seasonal precipitation from a small watershed to the south of the swale. There is no exit (culvert) for precipitation to continue a northerly flow under the Pittsburg-Antioch Highway so it sits in the depression until it is subject to either evaporation or percolation. This swale will not be impacted by the current development plan and will be protected by a 25-foot buffer. During construction, the swale will be fenced off and protected by silt fencing/straw wattles, and have installed signage identifying the area as sensitive habitat (No Admission). No entry will be allowed within the protected buffer zone or seasonal wetland swale. Until recently, this isolated swale would not have been considered United States Army Corps of Engineers jurisdictional in accordance with the U.S. Environmental Protection Agency's Navigable Waters Protection Rule (NWPR). However, on August 30, 2021, in the case of Pascua Yaqui Tribe v. U.S Environmental Protection Agency, the U.S. District Court for the District of Arizona vacated and remanded the NWPR. In light of this order, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers have halted implementation of the NWPR and, until further notice, are interpreting "waters of the United Sates" consistent with the pre-2015 regulatory regime. Therefore, the seasonal swale would now be considered an "other Water of the United States" and subject to federal jurisdiction in accordance with the Clean Water Act (consistent with the pre-2015 regulatory regime 40 CFR 230.3(s). Any impact to the seasonal swale would be subject to mitigation measures in accordance the Corps guidance and mitigation measures outlined in the East Contra Costa HCP/NCCP. The current development plan as proposed will avoid all impacts to the seasonal swale and provide an appropriate buffer around the swale with approved construction (silt/straw wattles) fencing and signage.

6.0 CONCLUSIONS AND RECOMMENDATIONS

According to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) guidelines, a project is normally considered to have a significant impact on wildlife if it will interfere substantially with the movement of any resident or migratory fish or wildlife species; or substantially diminishes habitat quantity or quality for dependent wildlife and plant species. Impacts to special status species and their associated habitats are also considered

significant if the impact would reduce or adversely modify a habitat of recognized value to a sensitive wildlife species or to an individual of such species. Adherence to the East Contra Costa HCP/NCCP's directives, western burrowing owl preconstruction surveys, avoidance and minimization measures, and construction monitoring, project implementation will not result in significant impacts to the burrowing owl or migratory bird species, or any associated protected habitat. Any impact to the seasonal swale in the northeastern portion of the property would be subject to mitigation measures in accordance with USACE directives and mitigation measures outlined in the East Contra Costa HCP/NCCP. The current development plan as proposed will avoid all impacts to the seasonal swale and provide an appropriate buffer around the swale with approved construction (silt/straw wattles) fencing, biological monitoring and signage.

This concludes our Planning Survey Report (PSR) East Contra Costa County HCP/NCCP, NEPA/CEQA-level Biological Resources Evaluation and Wetland Determination for the 12.51-acre subject property located at 3478 Pittsburg-Antioch Highway, Pittsburg, California. If you have any questions concerning our findings or recommendations please feel free to contact me directly at: Marcus H. Bole & Associates, Attn: Marcus Bole, 104 Brock Drive, Wheatland, CA 95692, phone 530-633-0117, fax 530-633-0119, email: mbole@aol.com.

Respectfully Submitted:

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Senior Wildlife & Wetland Biologist

LIST OF ATTACHMENTS:

APPENDIX A: MAPS AND PHOTO PLATES

APPENDIX B: NATURAL DIVERSITY DATA BASE

APPENDIX C: SOIL DATA

APPENDIX D: WETLAND DATA SHEETS

APPENDIX E: RESUMES OF SURVEYORS

7.0 REFERENCES & LITERATURE REVIEWED

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ENCLOSURE A: SITE MAPS & PHOTOS

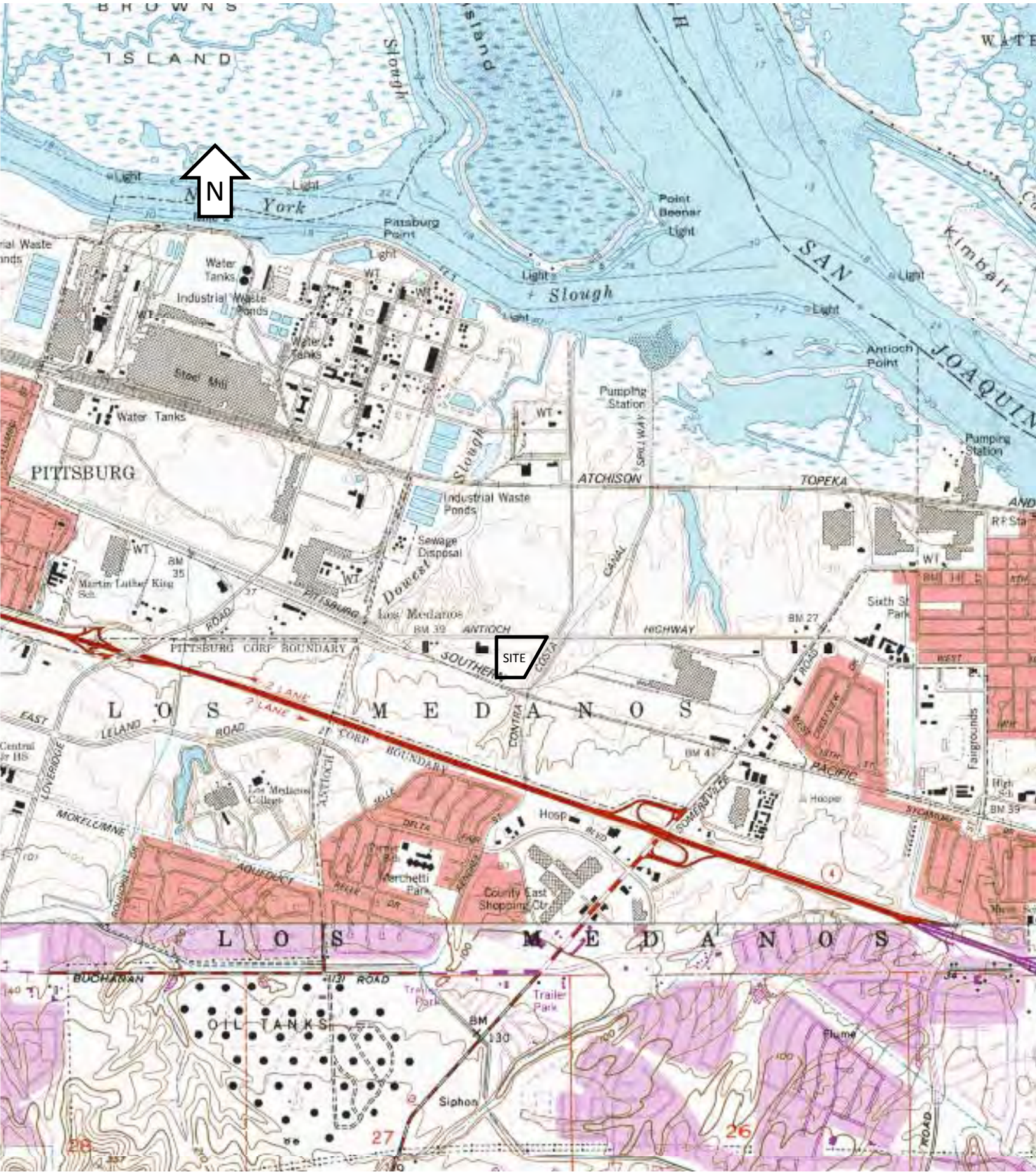

Figure 1: Vicinity Map, Solar RV/Boat and Mini-Storage Project Site, T 13 N, R 1 E, Los Medanos Land Grant, Antioch North 7.5' USGS. Contra Costa County APN 074-100-018 (12.51-acres) , 3478 Pittsburg-Antioch Highway, Pittsburg, California 94565. 38.011526 North, -121.845047 West.

Aerial Photograph and Field-Verified Land Cover at the Solar RV/Boat and Mini-Storage Project Site 3478 Pittsburg-Antioch Highway, Pittsburg, California. APN 074-100-018, Survey Date: 10/8/2021.

Delineated by:
Marcus H. Bole, M.S., Senior Wetland Biologist
Charlene J. Bole, M.S., Senior Wetland Botanist
Marcus H. Bole & Associates
104 Brock Drive, Wheatland, CA. 95692
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(O) 530-633-0117
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LEGEND

1 - 6 Wetland Data Points

Seasonal Wetland 0.39-acres

Ruderal Non-Native Grassland 11.57-acres

Gravel 0.56-acres

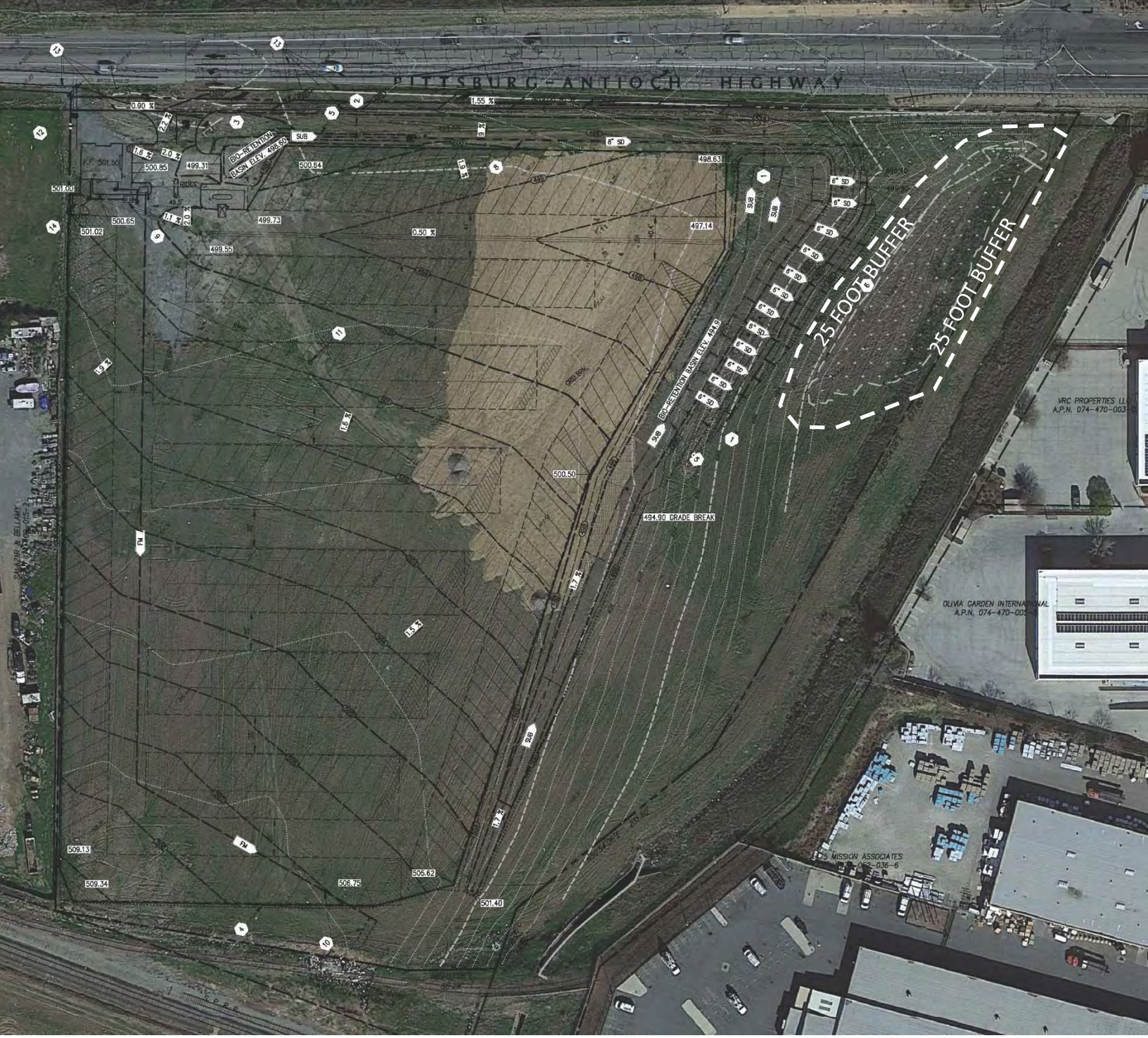


Figure 3: Project Overlay, Solar RV/Boat and Mini-Storage Project Site, T 13 N, R 1 E, Los Medanos Land Grant, Antioch North 7.5' USGS. Contra Costa County APN 074-100-018 (12.51-acres) , 3478 Pittsburg-Antioch Highway, Pittsburg, California 94565. 38.011526 North, -121.845047 West. Seasonal wetland show in northeastern corner of subject property protected by 25' buffer. During construction the area will be fenced off and protected by silt fence, straw wattles, and signage. Biological monitoring will be conducted during construction.

MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: Solar RV/Boat Mini Storage Project
ITEM: Site Photos – Wetland Study Areas
DATE: 9/24/2021 PLATE: 1

MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: Solar RV/Boat Mini Storage Project
ITEM: Site Photos – Typical
DATE: 9/24/2021 PLATE: 2

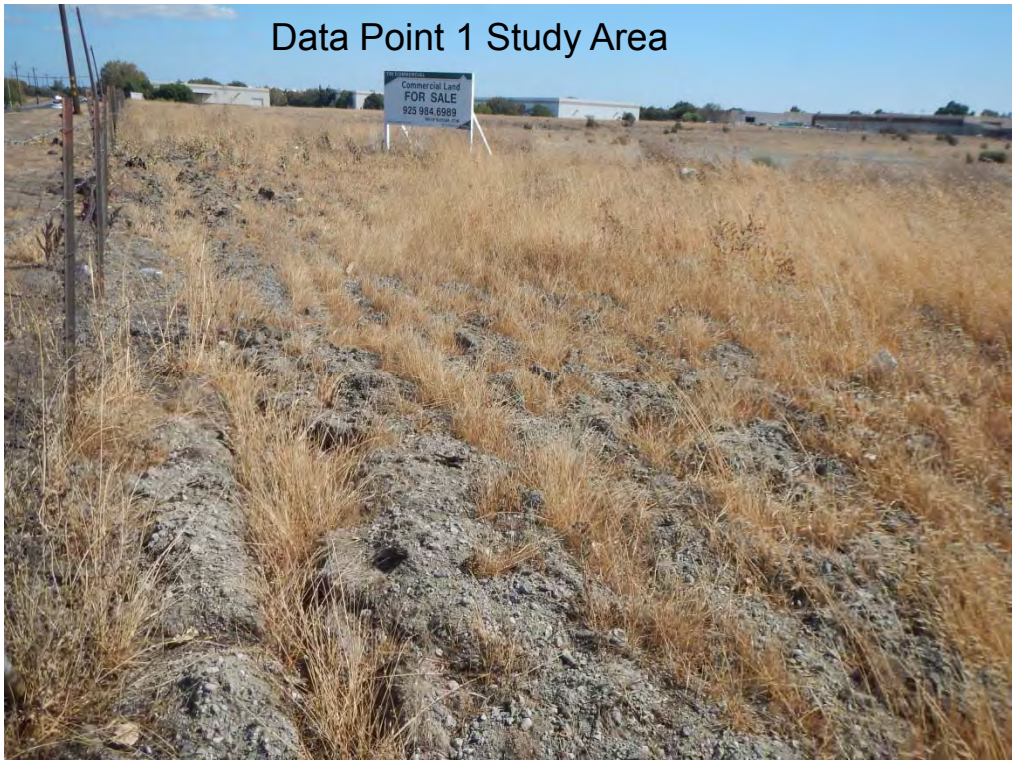
MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: Pittsburg Antioch Highway Project
ITEM: Site Photos – Typical
DATE: 9/24/2021 PLATE:3

MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: Pittsburg Antioch Highway Project
ITEM: Site Photos – Typical
DATE: 9/24/2021 PLATE:4

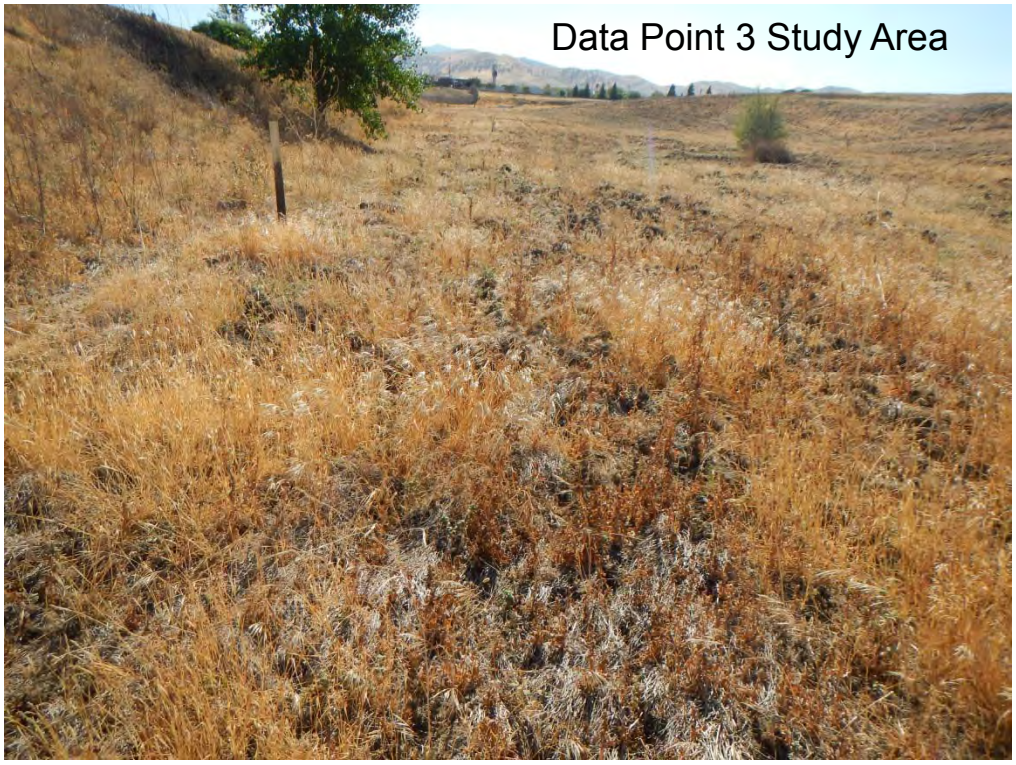
Data Point 1 Study Area



Data Point 1 Study Area Soil Photo - Typical

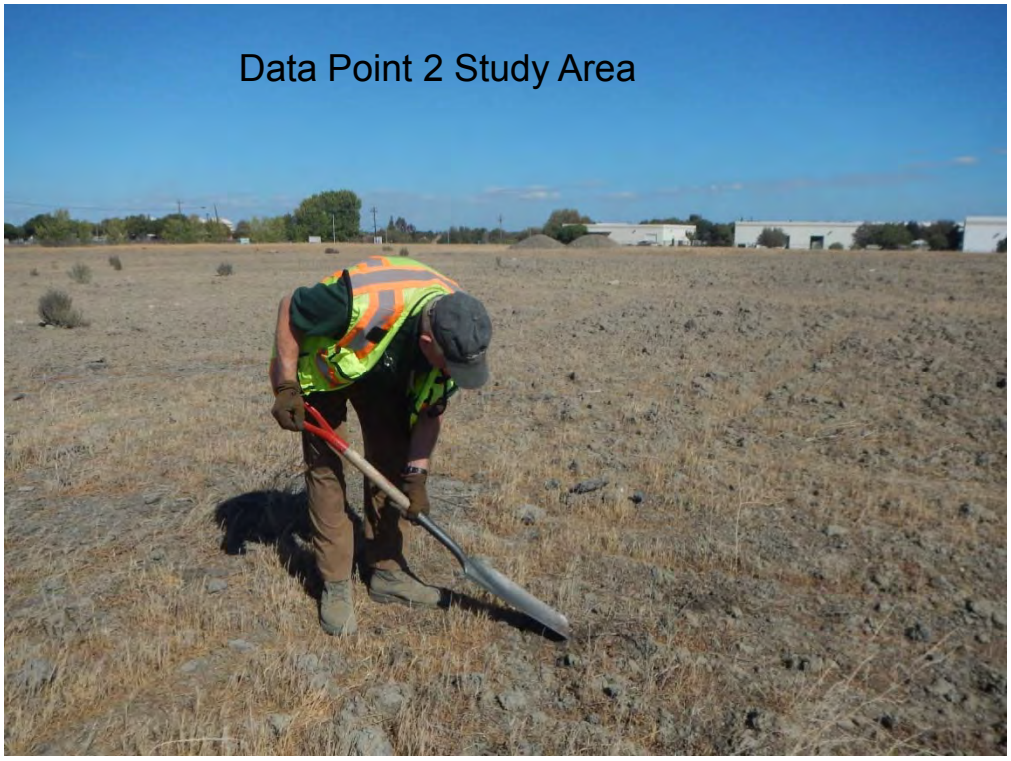
MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: Solar RV/Boat Mini Storage Project
ITEM: Site Photos – Data Point 1
DATE: 9/24/2021 PLATE: 5



MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: Solar RV/Boat Mini Storage Project
ITEM: Site Photos – Data Point 3
DATE: 9/24/2021 PLATE: 6

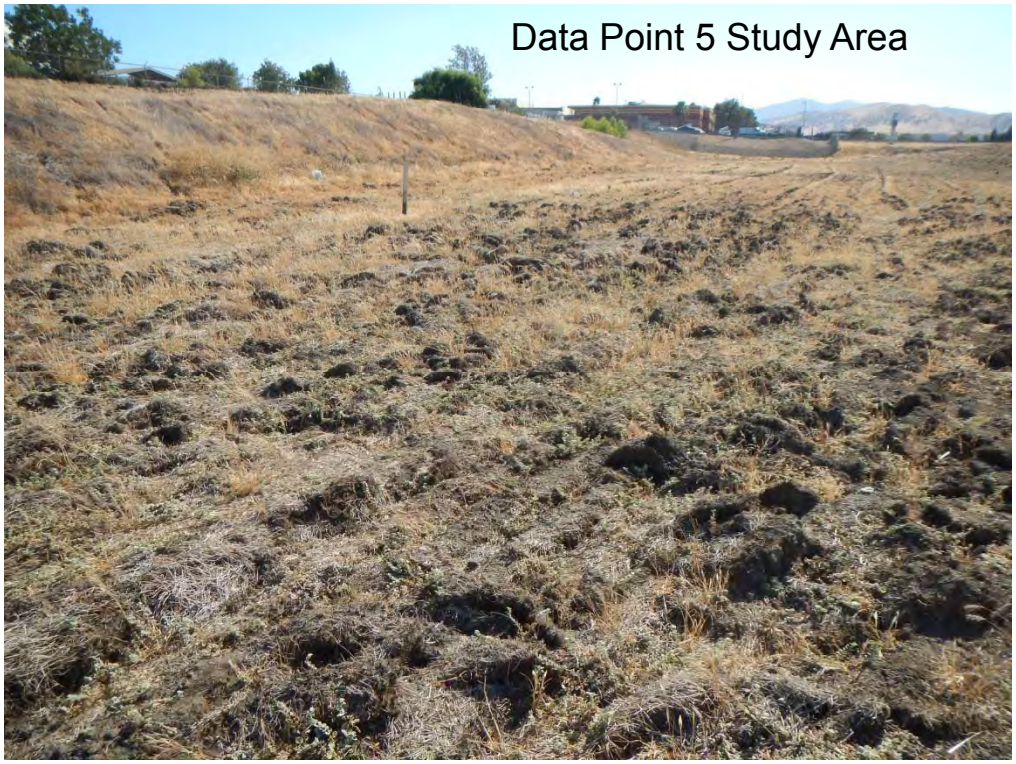


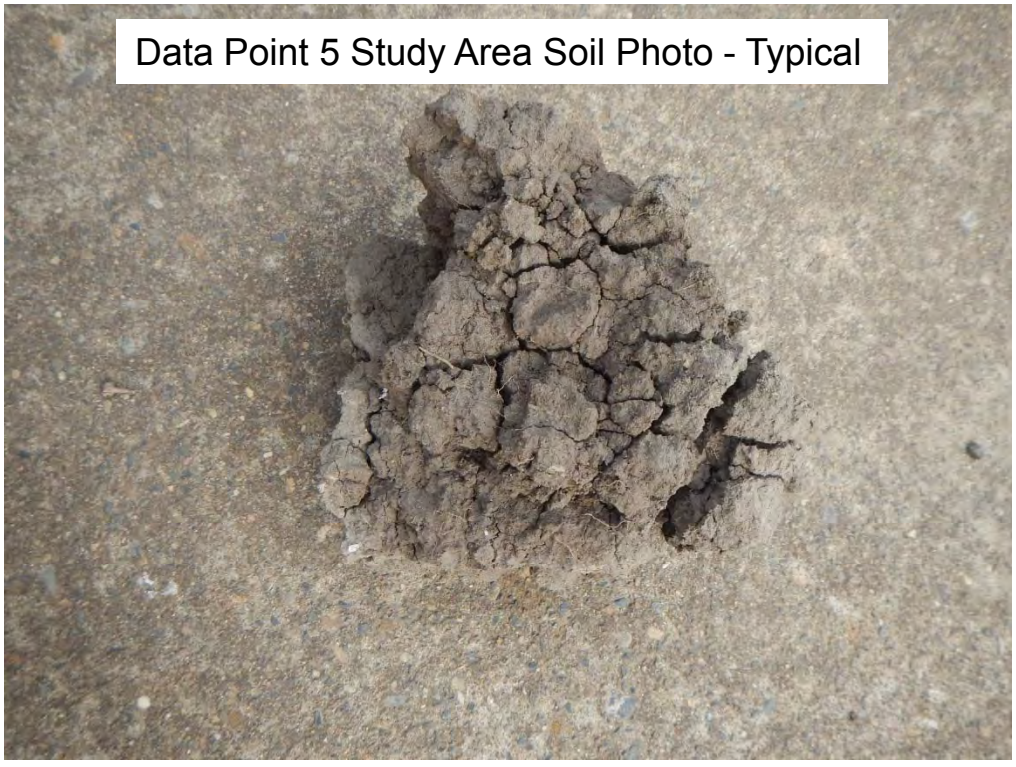
Data Point 2 Study Area

Data Point 2 Study Area Soil Photo - Typical

MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: Solar RV/Boat Mini Storage Project
ITEM: Site Photos – Data Point 2
DATE: 9/24/2021 PLATE: 7





MARCUS H. BOLE & ASSOCIATES
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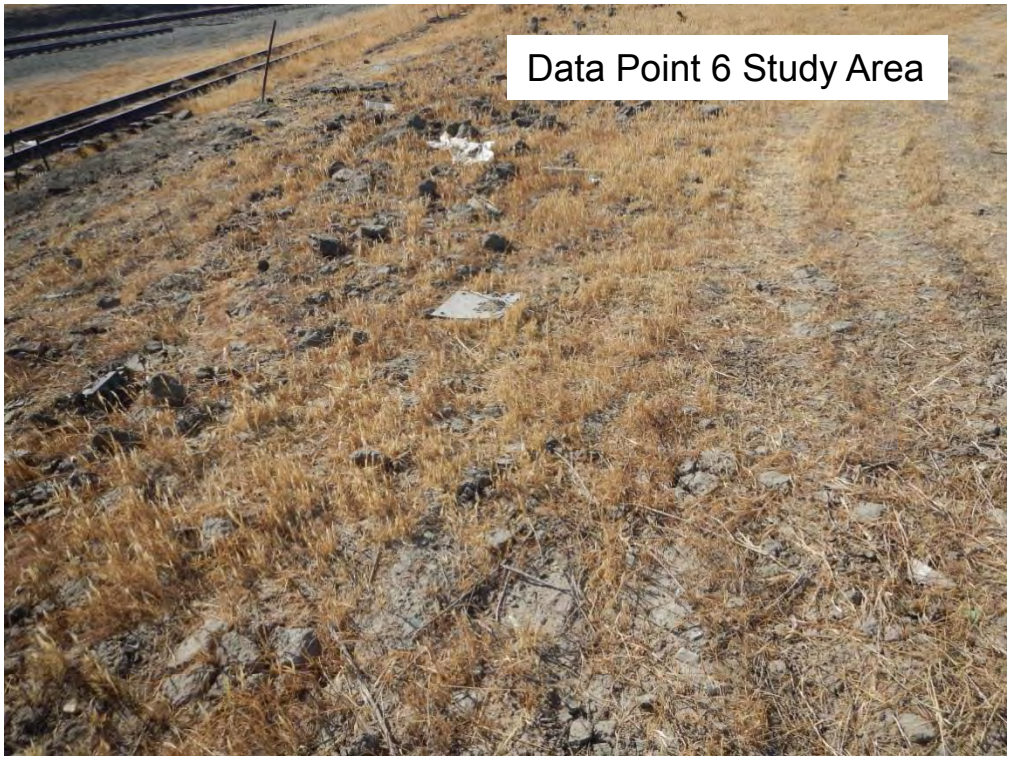
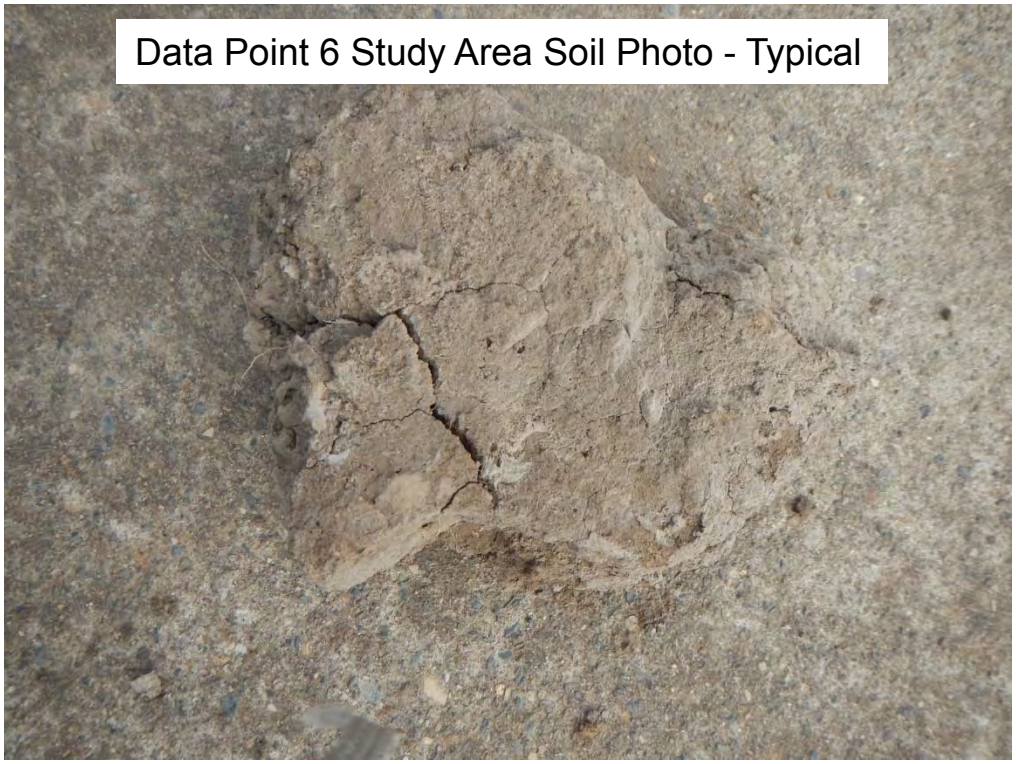
SITE: Solar RV/Boat Mini Storage Project
ITEM: Site Photos – Data Point 5
DATE: 9/24/2021 PLATE: 8





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SITE: Solar RV/Boat Mini Storage Project
ITEM: Site Photos – Data Point 6
DATE: 9/24/2021 PLATE: 9

ENCLOSURE B: CNDDB & IPaC Databases

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: October 11, 2021
Consultation Code: 08ESMF00-2022-SLI-0075
Event Code: 08ESMF00-2022-E-00223
Project Name: Solar RV/Boat and Mini-Storage Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2022-SLI-0075
Event Code: Some(08ESMF00-2022-E-00223)
Project Name: Solar RV/Boat and Mini-Storage Project
Project Type: DEVELOPMENT
Project Description: 12.51-acre Contra Costa County APN 074-100-018, 3478 Pittsburg-Antioch Highway, Pittsburg, CA

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.0110078,-121.84494506784802,14z

Counties: Contra Costa County, California

Endangered Species Act Species

There is a total of 20 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Delta Green Ground Beetle *Elaphrus viridis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2319	Threatened
Lange's Metalmark Butterfly *Apodemia mormo langei* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4382	Endangered
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Antioch Dunes Evening-primrose *Oenothera deltoides ssp. howellii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5970	Endangered
Colusa Grass *Neostapfia colusana* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5690	Threatened
Contra Costa Goldfields *Lasthenia conjugens* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7058	Endangered
Contra Costa Wallflower *Erysimum capitatum var. angustatum* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7601	Endangered
Keck's Checker-mallow *Sidalcea keckii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5704	Endangered
Soft Bird's-beak *Cordylanthus mollis ssp. mollis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8541	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* https://ecos.fws.gov/ecp/species/321#crithab	Final

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Antioch North (3812117))
 AND (Federal Listing Status IS (Endangered OR Threatened OR Proposed Endangered OR Proposed Threatened OR Candidate OR All CNDDB element occurrences OR Delisted) OR State Listing Status IS (Endangered OR Threatened OR Rare OR All CNDDB element occurrences OR Delisted OR Candidate Endangered OR Candidate Threatened))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Ambystoma californiense pop. 1	G2G3	Threatened	CDFW_WL-Watch List	50	1261	0	0	0	0	1	0	1	0	0	0	1
California tiger salamander - central California DPS	S3	Threatened	IUCN_VU-Vulnerable	50	S:1											
Anniella pulchra	G3	None	CDFW_SSC-Species of Special Concern	13	378	0	0	2	0	0	0	1	1	2	0	0
Northern California legless lizard	S3	None	USFS_S-Sensitive	22	S:2											
Anthicus antiochensis	G1	None		20	6	0	0	0	0	1	0	1	0	0	1	0
Antioch Dunes anthicid beetle	S1	None		20	S:1											
Apodemia mormo langei	G5T1	Endangered		10	1	0	0	0	0	0	1	0	1	1	0	0
Lange's metalmark butterfly	S1	None		10	S:1											
Archoplites interruptus	G2G3	None	AFS_TH-Threatened	5	5	0	0	0	0	0	1	1	0	1	0	0
Sacramento perch	S1	None	CDFW_SSC-Species of Special Concern	5	S:1											
Arizona elegans occidentalis	G5T2	None	CDFW_SSC-Species of Special Concern	12	260	0	0	0	0	0	1	1	0	1	0	0
California glossy snake	S2	None		12	S:1											
Astragalus tener var. tener	G2T1	None	Rare Plant Rank - 1B.2	10	65	0	1	0	0	0	0	0	1	1	0	0
alkali milk-vetch	S1	None		10	S:1											
Athene cunicularia	G4	None	BLM_S-Sensitive	1	2011	0	4	1	0	1	0	4	2	5	1	0
burrowing owl	S3	None	CDFW_SSC-Species of Special Concern	200	S:6											
			IUCN_LC-Least Concern													
			USFWS_BCC-Birds of Conservation Concern													
Blepharizonia plumosa	G1G2	None	Rare Plant Rank - 1B.1		53	0	0	0	0	1	2	3	0	2	1	0
big tarplant	S1S2	None	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		S:3											
Bombus crotchii	G3G4	None		50	437	0	0	0	0	0	1	1	0	1	0	0
Crotch bumble bee	S1S2	None		50	S:1											

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Bombus occidentalis western bumble bee	G2G3 S1	None None	USFS_S-Sensitive	25 25	306 S:1	0	0	0	0	0	1	1	0	1	0	0
Branchinecta conservatio Conservancy fairy shrimp	G2 S2	Endangered None	IUCN_EN-Endangered	10 10	53 S:1	0	0	0	0	0	1	0	1	1	0	0
Branchinecta lynchi vernal pool fairy shrimp	G3 S3	Threatened None	IUCN_VU-Vulnerable	1 15	795 S:2	0	0	0	1	0	1	1	1	2	0	0
Buteo swainsoni Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	10 10	2541 S:1	0	0	0	0	0	1	0	1	1	0	0
Chloropyron molle ssp. molle soft salty bird's-beak	G2T1 S1	Endangered Rare	Rare Plant Rank - 1B.2	10 10	27 S:1	0	0	0	0	1	0	1	0	0	1	0
Cicuta maculata var. bolanderi Bolander's water-hemlock	G5T4T5 S2?	None None	Rare Plant Rank - 2B.1	1 1	17 S:2	0	0	0	0	0	2	2	0	2	0	0
Coastal Brackish Marsh Coastal Brackish Marsh	G2 S2.1	None None			30 S:2	0	0	0	0	0	2	2	0	2	0	0
Coelus gracilis San Joaquin dune beetle	G1 S1	None None	BLM_S-Sensitive IUCN_VU-Vulnerable	10 10	11 S:1	0	0	0	0	1	0	1	0	0	0	1
Cryptantha hooveri Hoover's cryptantha	GH SH	None None	Rare Plant Rank - 1A		4 S:1	0	0	0	0	1	0	1	0	0	1	0
Downingia pusilla dwarf downingia	GU S2	None None	Rare Plant Rank - 2B.2	20 30	132 S:2	0	2	0	0	0	0	1	1	2	0	0
Efferia antiochi Antioch efferian robberfly	G1G2 S1S2	None None		20 20	4 S:1	0	0	0	0	0	1	1	0	1	0	0
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	25 25	180 S:1	0	1	0	0	0	0	1	0	1	0	0
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	0 18	1398 S:3	0	2	1	0	0	0	2	1	3	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Eriogonum nudum var. psychicola Antioch Dunes buckwheat	G5T1 S1	None None	Rare Plant Rank - 1B.1	17 17	1 S:1	0	0	0	0	0	1	1	0	1	0	0
Eriogonum truncatum Mt. Diablo buckwheat	G1 S1	None None	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley		7 S:1	0	0	0	0	1	0	1	0	0	1	0
Erysimum capitatum var. angustatum Contra Costa wallflower	G5T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	10 20	4 S:4	0	0	3	0	0	1	4	0	4	0	0
Eschscholzia rhombipetala diamond-petaled California poppy	G1 S1	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley		12 S:1	0	0	0	0	1	0	1	0	0	1	0
Eucerceris ruficeps redheaded sphecid wasp	G1G3 S1S2	None None		30 30	4 S:1	0	0	0	0	0	1	1	0	1	0	0
Extriplex joaquinana San Joaquin spearscale	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	5 5	127 S:1	0	0	1	0	0	0	1	0	1	0	0
Fritillaria liliacea fragrant fritillary	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	25 25	82 S:1	0	1	0	0	0	0	1	0	1	0	0
Geothlypis trichas sinuosa saltmarsh common yellowthroat	G5T3 S3	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	5 7	112 S:4	0	4	0	0	0	0	0	4	4	0	0
Gonidea angulata western ridged mussel	G3 S1S2	None None		30 30	157 S:1	0	0	0	0	1	0	1	0	0	1	0
Hypomesus transpacificus Delta smelt	G1 S1	Threatened Endangered	AFS_TH-Threatened IUCN_EN-Endangered	0 0	29 S:2	0	1	0	1	0	0	0	2	2	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Idiostatus middlekauffi Middlekauff's shieldback katydid	G1G2 S1	None None	IUCN_CR-Critically Endangered	20 20	1 S:1	0	0	0	0	0	1	1	0	1	0	0
Lasiurus blossevillii western red bat	G4 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	15 15	128 S:1	0	0	0	0	0	1	1	0	1	0	0
Lasthenia conjugens Contra Costa goldfields	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley	50 50	36 S:1	0	0	0	0	1	0	1	0	0	0	1
Laterallus jamaicensis coturniculus California black rail	G3G4T1 S1	None Threatened	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	5 7	303 S:5	1	1	0	0	0	3	0	5	5	0	0
Lathyrus jepsonii var. jepsonii Delta tule pea	G5T2 S2	None None	Rare Plant Rank - 1B.2 SB_BerrySB-Berry Seed Bank SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	0 10	133 S:15	0	3	3	0	0	9	8	7	15	0	0
Lepidurus packardi vernal pool tadpole shrimp	G4 S3S4	Endangered None	IUCN_EN-Endangered	0 0	329 S:1	1	0	0	0	0	0	0	1	1	0	0
Lilaeopsis masonii Mason's lilaeopsis	G2 S2	None Rare	Rare Plant Rank - 1B.1	-10 10	198 S:21	3	4	4	0	0	10	10	11	21	0	0
Limosella australis Delta mudwort	G4G5 S2	None None	Rare Plant Rank - 2B.1	0 5	59 S:7	2	2	1	1	0	1	6	1	7	0	0
Linderiella occidentalis California linderiella	G2G3 S2S3	None None	IUCN_NT-Near Threatened	1 1	508 S:1	0	0	0	1	0	0	1	0	1	0	0
Melospiza melodia song sparrow ("Modesto" population)	G5 S3?	None None	CDFW_SSC-Species of Special Concern	30 30	92 S:1	0	0	0	0	0	1	1	0	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Melospiza melodia maxillaris Suisun song sparrow	G5T3 S3	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	5 18	36 S:6	0	4	0	0	0	2	2	4	6	0	0
Metapogon hurdi Hurd's metapogon robberfly	G1G2 S1S2	None None		15 15	3 S:1	0	0	0	0	1	0	1	0	0	1	0
Myrmosula pacifica Antioch multilid wasp	GH SH	None None		20 20	3 S:1	0	0	0	0	0	1	1	0	1	0	0
Oenothera deltoides ssp. howellii Antioch Dunes evening-primrose	G5T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	5 50	10 S:6	0	0	2	1	1	2	4	2	5	1	0
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	G5T2Q S2	Threatened None	AFS_TH-Threatened		31 S:1	0	0	0	0	0	1	0	1	1	0	0
Perdita scitula antiochensis Antioch andrenid bee	G1T1 S1	None None		20 20	2 S:1	0	0	0	0	0	1	1	0	1	0	0
Phalacrocorax auritus double-crested cormorant	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	-10 -10	39 S:1	0	0	0	0	0	1	1	0	1	0	0
Philanthus nasalis Antioch specid wasp	G1 S1	None None		20 20	4 S:1	0	0	0	0	1	0	1	0	0	0	1
Plagiobothrys hystriculus bearded popcornflower	G2 S2	None None	Rare Plant Rank - 1B.1		15 S:1	0	0	0	0	0	1	1	0	1	0	0
Reithrodontomys raviventris salt-marsh harvest mouse	G1G2 S1S2	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	0 5	144 S:7	0	3	2	0	0	2	1	6	7	0	0
Sidalcea keckii Keck's checkerbloom	G2 S2	Endangered None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		50 S:1	0	0	0	0	0	1	1	0	1	0	0
Sphecodogastra antiochensis Antioch Dunes halcitid bee	G1 S1	None None		25 25	1 S:1	0	0	0	0	0	1	1	0	1	0	0

Summary Table Report

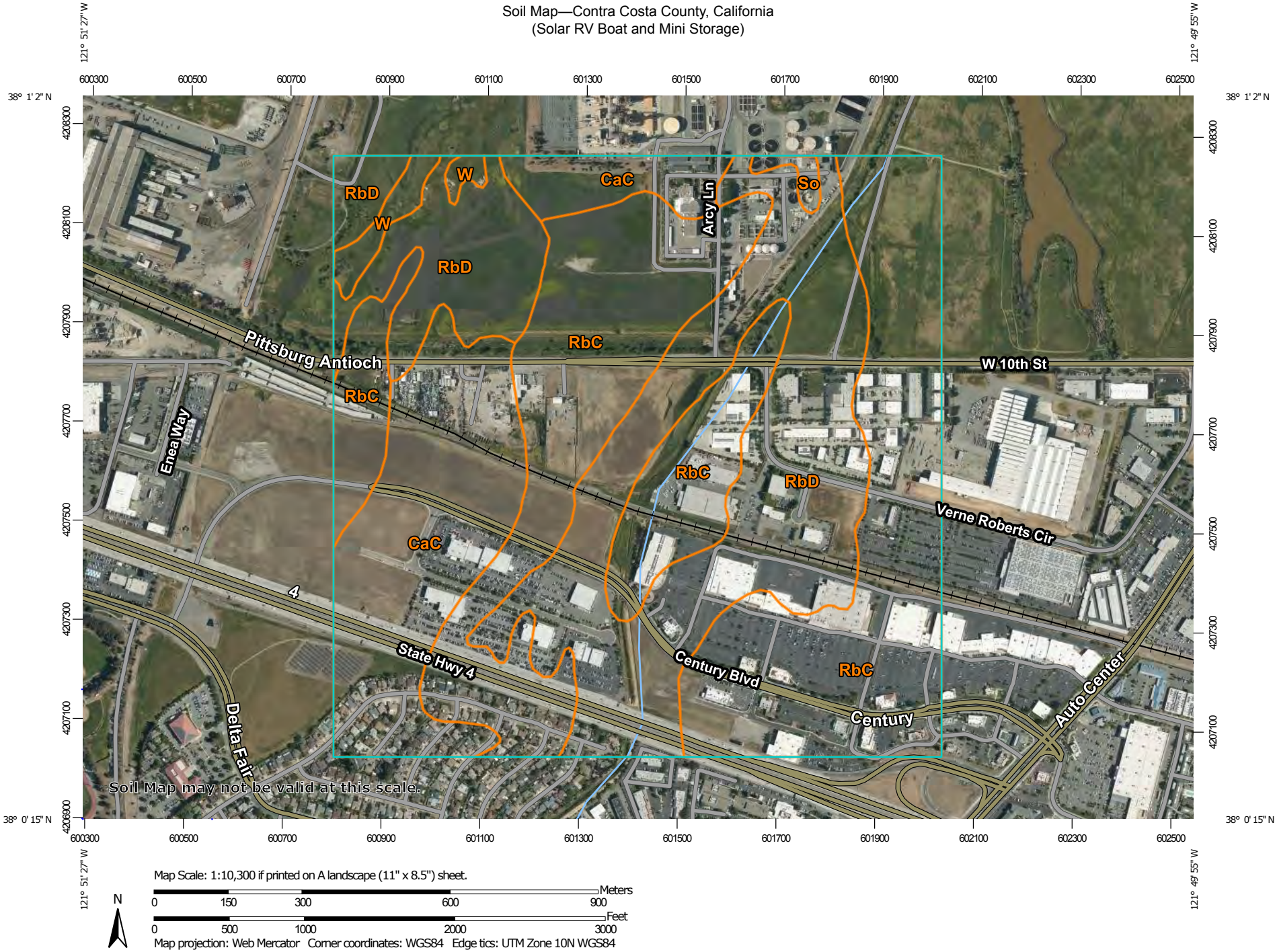
California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Spirinchus thaleichthys longfin smelt	G5 S1	Candidate Threatened		0 0	46 S:3	0	0	0	0	0	3	0	3	3	0	0
Stabilized Interior Dunes Stabilized Interior Dunes	G1 S1.1	None None		20 20	2 S:1	0	0	0	0	0	1	1	0	1	0	0
Symphyotrichum lentum Suisun Marsh aster	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	0 10	175 S:24	3	3	8	0	0	10	13	11	24	0	0
Thamnophis gigas giant gartersnake	G2 S2	Threatened Threatened	IUCN_VU-Vulnerable	0 25	366 S:3	2	0	0	0	0	1	1	2	3	0	0

ENCLOSURE C: Soil Data

Soil Map—Contra Costa County, California
(Solar RV Boat and Mini Storage)



Map Scale: 1:10,300 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 18, Sep 9, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 23, 2019—Apr 29, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CaC	Capay clay, 1 to 15 percent slopes, MLRA 17	66.5	17.9%
RbC	Rincon clay loam, 2 to 9 percent slopes, MLRA 14	173.5	46.8%
RbD	Rincon clay loam, 9 to 15 percent slopes, MLRA 14	123.7	33.4%
So	Sycamore silty clay loam, 0 to 2 percent slopes, MLRA 17	1.7	0.5%
W	Water	5.3	1.4%
Totals for Area of Interest		**370.7**	**100.0%**

ENCLOSURE D: Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Solar RV/Boat and Mini-Storage City/County: Pittsburg/Contra Costa Sampling Date: Oct 8, 2021

Applicant/Owner: Chris Koenig/Pacific Property Advisors, Inc. State: California Sampling Point: 1

Investigator(s): M. Bole, C. Bole Section, Township, Range: T 13 N, R 1 E, Los Medanos Land Grant

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1-2%

Subregion (LRR): LRR – C Lat: 38.01237N Long: -121.84594W Datum: NAD 83

Soil Map Unit Name: Rincon clay loam NWI classification: non-hydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. None			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. Avena barbata	50	Y	NI
2. Bromus hordeaceus	20	Y	FACU
3. Bromus madritensis	10	N	UPL
4. Rumex crispus	5	N	FAC
5. Lepidium latifolium	5	N	FAC
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. None			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
O – 6	10YR 3/2	100	NONE				firm, sticky	very dark grayish brown
6 – 12	10YR 4/2	100	NONE				firm, blocky	dark grayish brown

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

NONE

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NONE

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soil is angular blocky, very hard, firm. Samples were moistened prior to soil color determination.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sample taken near Pittsburg-Antioch Highway. No discernable roadside ditch. Seasonal precipitation sheet flows off road and follows contours along fence line.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Solar RV/Boat and Mini-Storage City/County: Pittsburg/Contra Costa Sampling Date: Oct 8, 2021

Applicant/Owner: Chris Koenig/Pacific Property Advisors, Inc. State: California Sampling Point: 2

Investigator(s): M. Bole, C. Bole Section, Township, Range: T 13 N, R 1 E, Los Medanos Land Grant

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1-2%

Subregion (LRR): LRR – C Lat: 38.01211N Long: -121.84617W Datum: NAD 83

Soil Map Unit Name: Rincon clay loam NWI classification: non-hydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. None			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. Avena barbata	40	Y	NI
2. Bromus hordeaceus	20	Y	FACU
3. Bromus madritensis	5	N	UPL
4. Centaurea solstitalis	5	N	NI
5.			
6.			
7.			
8.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. None			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
O – 6	10YR 4/2	100	NONE				firm, blocky	dark grayish brown
6 – 12	10YR 3/2	100	NONE				blocky	very dark grayish brown

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NONE

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

Soil is angular blocky. Samples were moistened prior to soil color determination.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sample taken in disturbed upland habitat. Evidence of cut & fill materials, some asphalt.
Sample taken approximately 125 feet south of Pittsburg-Antioch Highway.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Solar RV/Boat and Mini-Storage City/County: Pittsburg/Contra Costa Sampling Date: Oct 8, 2021

Applicant/Owner: Chris Koenig/Pacific Property Advisors, Inc. State: California Sampling Point: 3

Investigator(s): M. Bole, C. Bole Section, Township, Range: T 13 N, R 1 E, Los Medanos Land Grant

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1-2%

Subregion (LRR): LRR – C Lat: 38.01216N Long: -121.84330W Datum: NAD 83

Soil Map Unit Name: Rincon clay loam NWI classification: non-hydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. None			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. Polypogon monspeliensis	20	Y	FACW
2. Lepidium latifolium	20	Y	FAC
3. Rumex crispus	20	Y	FAC
4. Phalaris parodoxa	15	Y	FAC
5. Avena barbata	10	Y	NI
6.			
7.			
8.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. None			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
O – 6	10YR 2/2	100	7.5YR 6/8	5	C	M	firm, blocky	very dark brown
6 – 12	10YR 3/2	100	NONE				blocky	very dark grayish brown

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NONE

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Soil is angular blocky. Few, prominent mottles within first 6 inches, none below 6 inches. Samples were moistened prior to soil color determination.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sample taken in seasonal wetland. Area is a depression within a broad swale in the northeastern portion of the property. The area is significantly lower in elevation from the majority of the site. Sample taken approximately 100 feet south of Pittsburg-Antioch Highway.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Solar RV/Boat and Mini-Storage City/County: Pittsburg/Contra Costa Sampling Date: Oct 8, 2021

Applicant/Owner: Chris Koenig/Pacific Property Advisors, Inc. State: California Sampling Point: 4

Investigator(s): M. Bole, C. Bole Section, Township, Range: T 13 N, R 1 E, Los Medanos Land Grant

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1-2%

Subregion (LRR): LRR – C Lat: 38.01192N Long: -121.84371W Datum: NAD 83

Soil Map Unit Name: Rincon clay loam NWI classification: non-hydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix laevigata	5	N	FACW
2.			
3.			
4.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. None			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. Polypogon monspeliensis	20	Y	FACW
2. Lepidium latifolium	20	Y	FAC
3. Rumex crispus	20	Y	FAC
4. Phalaris parodoxa	25	Y	FAC
5. Schoenoplectus acutus	5	N	OBL
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. None			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
O – 6	10YR 2/2	100	7.5YR 6/8	5	C	M	firm, blocky	very dark brown
6 – 12	10YR 2/2	100	7.5YR 6/8	10	C	M	blocky	very dark brown

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NONE

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Soil is angular blocky. Few, prominent mottles within first 12 inches.
Samples were moistened prior to soil color determination.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sample taken in seasonal wetland. Area is a depression within a broad swale in the northeastern portion of the property. The area is significantly lower in elevation from the majority of the site. Sample taken approximately 200 feet south of Pittsburg-Antioch Highway.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Solar RV/Boat and Mini-Storage City/County: Pittsburg/Contra Costa Sampling Date: Oct 8, 2021

Applicant/Owner: Chris Koenig/Pacific Property Advisors, Inc. State: California Sampling Point: 5

Investigator(s): M. Bole, C. Bole Section, Township, Range: T 13 N, R 1 E, Los Medanos Land Grant

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1-2%

Subregion (LRR): LRR – C Lat: 38.01151N Long: -121.84393W Datum: NAD 83

Soil Map Unit Name: Rincon clay loam NWI classification: non-hydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. None			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. Avena barbata	40	Y	NI
2. Bromus hordeaceus	20	Y	FACU
3. Bromus madritensis	15	N	UPL
4. Centaurea solstitalis	15	N	NI
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. None			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
O – 6	10YR 4/2	100	NONE				firm, blocky	dark grayish brown
6 – 12	10YR 3/2	100	NONE				blocky	very dark grayish brown

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NONE

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

Soil is angular blocky. Samples were moistened prior to soil color determination.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sample taken south of seasonal wetland in upland habitat. Sample taken approximately 350 feet south of Pittsburg-Antioch Highway.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Solar RV/Boat and Mini-Storage City/County: Pittsburg/Contra Costa Sampling Date: Oct 8, 2021

Applicant/Owner: Chris Koenig/Pacific Property Advisors, Inc. State: California Sampling Point: 6

Investigator(s): M. Bole, C. Bole Section, Township, Range: T 13 N, R 1 E, Los Medanos Land Grant

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1-2%

Subregion (LRR): LRR – C Lat: 38.01042N Long: -121.84509W Datum: NAD 83

Soil Map Unit Name: Rincon clay loam NWI classification: non-hydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. None			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. Avena barbata	40	Y	NI
2. Bromus hordeaceus	20	Y	FACU-
3. Bromus madritensis	15	N	UPL
4. Centaurea solstitalis	5	N	NI
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. None			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
O – 6	10YR 4/2	100	NONE				firm, blocky	dark grayish brown
6 – 12	10YR 3/2	100	NONE				blocky	very dark grayish brown

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NONE

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

Soil is angular blocky. Samples were moistened prior to soil color determination.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sample taken south of seasonal wetland in upland habitat. Sample taken approximately 750 feet south of Pittsburg-Antioch Highway.

ENCLOSURE E: Resumes

Marcus H. Bole & Associates

An Environmental Consulting Firm

MARCUS H. BOLE, M.S., Senior Wildlife Biologist

EXPERTISE:

Natural Resource Management
Biological Monitoring for Construction Projects
Protocol-level Special Status Plant & Wildlife Surveys
Wetland Delineation, Mitigation, and Permitting
Phase I & II Environmental Site Assessments
CEQA/NEPA Document Preparation and Coordination

EDUCATION:

Masters Degree in Environmental Science
North Dakota State University, Fargo, 1976
Baccalaureate in Biology & Geography
California State University, Sacramento, 1970
Registered Environmental Property Assessor (REPA #647913)
Certified (OSMB) Disabled Veteran Business Enterprise (DVBE)
California Department of General Services (#0000847)
Service Disabled Veteran Owned Small Business (VA)

PROFESSIONAL HISTORY:

Marcus H. Bole & Associates, Senior Environmental Scientist, 1993 - Present
U. S. Federal Government Manager of Environmental Science and Project Management,
Natural Resource Management, Evaluation and Compliance, 1990 – 1993
United States Air Force, Environmental Scientist, U.S. & Overseas, 1970-1990
California State Division of Forestry, Biological Field Technician, 1966 - 1970

TRAINING AND REGISTRATIONS:

Air Force Institute of Technology -1991
Professional Education, Wright-Patterson Air Force Base, Ohio
Natural Resource Management, Biological Assessment
Air Force Center of Environmental Excellence-1992
Professional Education - Brooks City-Base, Texas
Natural Resource Management- National Environmental Policy
National Registry of Environmental Professionals 1993 - Present
Registered Environmental Property Assessor (REPA)
Yearly Continuing Education Credits - Biological/Environmental Science
Association of Environmental Professionals - 2000-2021
Professional Education Program - Biological Sciences
Bat Survey Techniques, Impact Assessment, and Mitigation - Leila Harris, UCD

Richard Chinn Environmental Training Institute - 2000-2021
Yearly re-certifications - Wetland Identification, Mapping and Reporting
Sierra Nevada Field Campus - 2000-2021
Continuing Education - Workshops in Natural Resource Evaluation
San Diego Natural History Museum - Department of Herpetology, 1998-2021
Training under Bradford D. Hollingsworth, Ph.D., Curator
Reptile and Amphibian Identification and Evaluation
Dr. Murray E. Fowler Veterinary Hospital - Sacramento Zoo, 1998-2021
Familiarization and identification training - Giant Garter Snake
Museum of Wildlife and Fish Biology - University of California, Davis
Continuing education in conservation biology, 1998-2021

REPRESENTATIVE EXPERIENCE - Natural Resource Evaluation and Reporting:

Mr. Bole has over forty years of experience in environmental project management. He has supervised work forces of professional engineers, scientists and technicians responsible for pollution monitoring, permitting, abatement, environmental impact analysis, natural resource evaluation and restoration programs and preserve habitat management. As a biologist, Mr. Bole has conducted numerous Biological Assessments in accordance with United States Fish & Wildlife Service (USFWS), California Department of Fish & Wildlife (CDFW), United States Army Corps of Engineers (USACE) and the California Department of Transportation (Caltrans) guidance, protocols and regulations. He has conducted wetland delineations in accordance with the United States Army Corps of Engineers regulations throughout California. As Senior Environmental Scientist, Lt. Colonel Bole, Chief, Environmental Affairs, was directly responsible training and employing a staff of 200 biologists, botanists and environment scientists conducting hundreds of Biological Assessments at five major military installations in California (1990 -1993). As lead environmental scientist for the Department of Veterans Affairs, National Cemetery Administration, he has been directly responsible for conducting environmental assessments, preserve monitoring and habitat restoration for the expansion over 160 National Cemeteries in the United States. The California Superior Court system (Yuba & Plumas Counties) has qualified Marcus Bole as an expert witness in wildlife and fisheries biology. Mr. Bole is an approved biologist for the Yolo Habitat Conservancy, East Contra Costa Habitat Conservancy and the South Sacramento Habitat Conservation Plan. Following is a list of representative experience for selected species:

- Vernal pool species habitat and preserve management
- California Red-legged Frog & Foothill Yellow-legged Frog
- Swainson's hawk & White-Tailed Kite
- Tri-Colored Blackbird & Bank Swallow
- Western Burrowing Owl, bat species
- Western Yellow-billed Cuckoo, Least Bell's Vireo
- Western Pond Turtle, Giant Garter Snake
- Valley Elderberry Longhorn Beetle
- San Joaquin kit fox
- Fresno kangaroo rat
- Blunt-nosed Leopard Lizard, California Tiger Salamander
- Federal and State Listed Plant Species

Marcus H. Bole & Associates

An Environmental Consulting Firm

CHARLENE J. BOLE, Senior Botanist

EXPERTISE:

Environmental Project Management
Natural Resource Management
Environmental Site Assessments (Phase I & II)
Threatened and Endangered Species Surveys and Reporting
Senior Botanist
Wetland Delineation, Mapping, Mitigation and Permitting

EDUCATION:

Master Degree in Environmental Science
North Dakota State University, Fargo, 1979
Baccalaureate in Geography and Botany
California State University, Sacramento, 1974
Graduate Course work in Environmental Sciences, Botany & Wildlife Biology
Registered Environmental Property Assessor (REPA# 229436)
State of California Standard Teaching Credential, Environmental Science
California Community College Credential, Environmental Science

PROFESSIONAL HISTORY:

Marcus H. Bole & Associates (MHB&A), Senior Environmental Scientist, 1991 - Present
Consultant, Veterans Administration, National Cemetery Administration, 2005-Present
Consultant, Regulatory Permitting, US Army, Department of Defense, Belgium, 1988 - 1991
Consultant, Senior Project Manager, Environmental Development Center, Belgium, 1988 - 1991
Consultant, Senior Environmental Scientist, National Cemetery Administration, 2005 – Present

TRAINING AND REGISTRATIONS:

National Registry of Environmental Professionals 1993 - Present
- Registered Environmental Property Assessor (REPA)
- Yearly Continuing Education Credits - Biological/Environmental Science

Association of Environmental Professionals - 2000-2021
- Professional Education Program - Biological Sciences
- Bat Survey Techniques, Impact Assessment, and Mitigation - Leila Harris, UCD

Richard Chinn Environmental Training Institute - 2000-2021
- Yearly re-certifications - Wetland Identification, Mapping and Reporting

Sierra Nevada Field Campus - 2000-2021
- Continuing Education - Workshops in Natural Resource Evaluation
- Special status botanical speciesl of California.

From: Farinha, Melissa@Wildlife <Melissa.Farinha@wildlife.ca.gov>
Sent: Friday, September 3, 2021 10:11 AM
To: Jentsch, Stephanie <Stephanie_Jentsch@fws.gov>; Joanne Chiu <Joanne.Chiu@dcd.cccounty.us>
Subject: RE: [EXTERNAL] RE: Biologist Approval Request - Marcus Bole and Charlene Bole, Pittsburg Self Storage Project on APN 074-100-018

Good Morning Joanne,

CDFW approves Charlene and Marcus Bole to conduct planning and preconstruction surveys for the Pittsburg Self Storage Project on APN 074-100-018.

Thank You,

Melissa Farinha
Environmental Program Manager
Bay Delta Region, Delta Habitat Conservation Program
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(530) 351-4801

From: Jentsch, Stephanie <Stephanie_Jentsch@fws.gov>
Sent: Thursday, August 26, 2021 5:24 PM
To: Joanne Chiu <Joanne.Chiu@dcd.cccounty.us>; Farinha, Melissa@Wildlife <Melissa.Farinha@wildlife.ca.gov>
Subject: Re: [EXTERNAL] RE: Biologist Approval Request - Marcus Bole and Charlene Bole, Pittsburg Self Storage Project on APN 074-100-018

Hi Joanne,

Mracus and Charlene Bole are approved to conduct planning and preconstruction surveys for the Pittsburg Self Storage Project on APN 074-100-018.

Thank you,
Stephanie

Appendix CUL

Cultural Resources Report

CULTURAL RESOURCES INVENTORY SURVEY

Pittsburg Self Storage Development Project
circa 12.5-Acres
City of Pittsburg, Contra Costa County, California

Prepared for

Pacific Property Advisors, Inc.
185 Front Street, Suite 207
Danville, CA 94526

Author

Sean Michael Jensen, M. A.

Keywords *for Information Center Use:*
Cultural Resources Inventory Survey, 12.5-Acres, Contra Costa County, CEQA, USGS Antioch North, Ca. 7.5' Quadrangle, No Significant Historical Resources, No Unique Archaeological Resources

July 31, 2021

GENESIS SOCIETY

ARCHAEOLOGICAL - HISTORICAL - CULTURAL RESOURCE MANAGEMENT SERVICES

ABSTRACT

This report details the results of a cultural resources inventory survey involving creation of a personal property self-storage commercial development, involving approximately 12.5-acres of land located immediately adjacent to the south side of Pittsburg-Antioch Highway, approximately 200 meters north of State Highway 4, approximately one mile west of Auto Center Drive, within the City of Pittsburg, Contra Costa County, California.

The proponent proposes to create a personal property self-storage commercial development, which will include grading and land recontouring, construction of new commercial buildings and structures, creation of access roads, placement of buried utilities, and general landscaping.

Existing records at the Northwest Information Center document that portions of the present APE had been subjected to previous archaeological investigation, and that no historic properties have been documented within the APE. As well, the present effort included an intensive-level pedestrian survey. No prehistoric or historic-era cultural resources were identified during the pedestrian survey.

Consultation was undertaken with the Native American Heritage Commission (NAHC) re. sacred land listings for the property. An information request letter was delivered to the NAHC on June 21, 2021. The NAHC responded with a letter dated July 13, 2021, indicating that a search of their Sacred Lands files returned negative results.

The probability of encountering buried archaeological sites within the APE is low. This conclusion is derived in part from the observed soil matrices which have been subjected to a high degree of disturbance associated with past ranching and farming where ripping and discing penetrated through at least 24-inches of soils. Evidence of ground disturbance assisted in determining whether or not subsurface resources were present within the APE. Overall, the soil types present and contemporary disturbance would warrant a finding of low probability for encountering buried archaeological sites.

Based on the absence of significant historical resources/unique archaeological resources within the APE, archaeological clearance is recommended for the project/undertaking as presently proposed.

CONTENTS

1. INTRODUCTION

Project Background

This report details the results of a cultural resources inventory survey involving creation of a personal property self-storage commercial development, involving approximately 12.5-acres of land located immediately adjacent to the south side of Pittsburg-Antioch Highway, approximately 200 meters north of State Highway 4, approximately one mile west of Auto Center Drive, within the City of Pittsburg, Contra Costa County, California.

The proponent proposes to create a personal property self-storage commercial development, which will include grading and land recontouring, construction of new commercial buildings and structures, creation of access roads, placement of buried utilities, and general landscaping.

Since the project will involve physical disturbance to ground surface and sub-surface components in conjunction with commercial development, it has the potential to impact cultural resources that may be located within the area of potential effects (APE). In this case, the APE would consist of the circa 12.5-acre land area within which the commercial development work will be undertaken. Evaluation of the project's potential to impact cultural resources must be undertaken in conformity with the City of Pittsburg and Contra Costa County rules and regulations, and in compliance with requirements of the California Environmental Quality Act of 1970, Public Resources Code, Section 21000, et seq. (CEQA), and The California CEQA Environmental Quality Act Guidelines, California Administrative Code, Section 15000 et seq. (Guidelines as amended).

Regulatory Context

The following section provides a summary of the applicable regulations, policies and guidelines relating to the proper management of cultural resources.

The California Register of Historical Resources

In California, the term "historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (Public Resources Code (PRC) Section 5020.1(j)). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources on the CRHR were developed to be in accordance with previously established criteria developed for listing in the NRHP. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

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

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852(d)(2)). The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) define "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource." It also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County Coroner has examined the remains (Section 7050.5b). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the County Coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California NAHC within 24 hours (Section 7050.5c).

The NAHC will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the Most Likely Descendant by the NAHC. The Most Likely Descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

PRC Sections 21083.2(b)–(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource, even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project does any of the following:

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA [CEQA Guidelines Section 15064.5(b)(2)].

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2(a), (b), and (c)).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC 21074(c); 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described in the following text, these procedures are detailed in PRC Section 5097.98.

Native American Historic Cultural Sites

State law (PRC Section 5097 et seq.) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and established the Native American Heritage Commission (NAHC).

In the event that Native American human remains or related cultural material are encountered, Section 15064.5(e) of the CEQA Guidelines (as incorporated from PRC Section 5097.98) and California Health and Safety Code Section 7050.5 define the subsequent protocol. In the event of the accidental discovery or recognition of any human remains, excavation or other disturbances shall be suspended of the site or any nearby area reasonably suspected to overlie adjacent human remains or related material. Protocol requires that a county-approved coroner be contacted in order to determine if the remains are of Native American origin. Should the coroner determine the remains to be Native

American, the coroner must contact the NAHC within 24 hours. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98 (14 CCR 15064.5(e)).

Scope of Work

Compliance with CEQA (and County rules and regulations) requires completion of projects in conformity with the amended (October 1998) Guidelines, including in particular Section 15064.5. Based on these rules, regulations and Guidelines, the following specific tasks were considered an adequate and appropriate Scope of Work for the present archaeological survey:

- Conduct a records search at the Northwest Information Center of the California Historical Resources Information System and consult with the Native American Heritage Commission. The goals of the records search and consultation are to determine (a) the extent and distribution of previous archaeological surveys, (b) the locations of known archaeological sites and any previously recorded archaeological districts, and (c) the relationships between known sites and environmental variables. This step is designed to ensure that, during subsequent field survey work, all significant/eligible cultural resources are discovered, correctly identified, fully documented, and properly interpreted.

- Conduct a pedestrian survey of the APE in order to record and evaluate any previously unidentified cultural resources. Based on map review, a complete coverage, intensive survey was considered appropriate, given the presence of moderate archaeological sensitivity within the property. The purpose of the pedestrian survey is to ensure that any previously identified sites are re-located and evaluated in relation to the present project/undertaking. For any previously undocumented sites discovered, the field survey would include formally recording these resources on State of California DPR-523 Forms.

- Upon completion of the records search and pedestrian survey, prepare a Final Report that identifies project effects and recommends appropriate mitigation measures for sites that might be affected by the undertaking and that are considered significant or potentially significant per CEQA, and/or eligible or potentially eligible for inclusion on the National Register of Historic Places.

The remainder of the present document constitutes the Final Report for this project, detailing the results of the records search, consultation and pedestrian survey and providing recommendations for treatment of significant/eligible archaeological and historic sites. All field survey work followed guidelines provided by the Office of Historic Preservation (Sacramento) and conforms to accepted professional standards.

2. Location, Environmental and Cultural Context

Location

The project area consists of approximately 12.5-acres of land located immediately adjacent to the south side of Pittsburg-Antioch Highway, approximately 200 meters north of State Highway 4, approximately one mile west of Auto Center Drive, within the City of Pittsburg, Contra Costa County, California. Lands affected are located within a portion of Section 22 of Township 2 North, Range 1 East, as shown on the USGS Antioch North, California, 7.5' Series quadrangle (see attached ***APE Map***).

Environment

The present APE is located near the nexus between the Sacramento Valley and the San Francisco Bay Area. Waters flowing from the mountain ranges and into the Sacramento River, then flow through the San Francisco Bay Area, and ultimately are disbursed into the Pacific Ocean.

Geologically, the Bay Area region has undergone intensive alteration over the past 12,000 years. It was during the Pleistocene that the Pacific shoreline extended approximately 15 miles further west then its present location, with subsequent, catastrophic melting of continent-spanning glaciers responsible for the present sea levels and shore line proximity. Concomitant with increases to sea level was the intrusion of salt water, easterly, which ultimately formed the Suisun Bay and the West Delta. The landscapes created by these climatic conditions ranged from saltmarsh and redwood forests to mixed evergreen woodlands and grasslands.

Topography within the APE is relatively flat, with an elevation averaging approximately 40-feet above mean sea level. The region is characterized by a Mediterranean climate, with cool, rainy winters and hot, dry summers. The average annual temperature for the project area ranges from 36-91ºF, with the hottest temperatures occurring in June. The average yearly rainfall totals for the area are approximately 13 inches, with the maximum annual precipitation occurring in January.

The region once supported a variety of flora and fauna taxa which have been subsequently replaced with domesticated plants and a slimmer variety of animals, including marsh birds, ducks, geese, raptors, reptiles, amphibians and small mammals.

In view of the substantial surface water sources throughout this area, prehistoric use and occupation was generally intensive, but the population was not randomly distributed. Clearly, the most intensively occupied land areas were at elevated locations along the bay, marsh and wetlands system margins.

Prehistory

The Sacramento Valley/San Francisco Bay Area region generally has a long and complex cultural history with distinct regional patterns that extends back more than 11,000 years. The first generally agreed-upon evidence for the presence of prehistoric peoples in the area is represented by the distinctive fluted spear points (e.g. Heizer 1938), some resembling Clovis Points, found on the margins of extinct lakes in the San Joaquin Valley. The Clovis points are found on the same surface with the bones of extinct animals such as mammoths, sloths, and camels. Based on evidence from elsewhere, the ancient hunters who used these spear points existed during a narrow time range between about 10,900 BP and 11,200 BP (Moratto 2004).

The next cultural period represented, the Western Pluvial Lakes Tradition and thought by most to be subsequent to the Clovis period, is another widespread complex that is characterized by stemmed spear points. This poorly defined early cultural tradition is regionally known from a small number of sites in the Central Coast Range, San Joaquin Valley lake margins, and Sierra Nevada foothills. The cultural tradition is dated to between about 8,000 and 10,000 years ago and its practitioners may be the precursors to the subsequent cultural pattern (Wallace 1978).

About 8,000 years ago, many California cultures shifted the main focus of their subsistence strategies from hunting to seed gathering as evidenced by the increase in food-grinding implements found in archeological sites dating to this period. This cultural pattern is best known for southern California, where it has been termed the Milling Stone Horizon (Wallace, 1954, 1978). However, subsequent research suggests that the horizon may be more widespread than originally described and likely extended throughout the Valley (Moratto 2004); radiocarbon dates suggest a maximum age range between about 8,000 and 2,000 BP, but with most clustering between about 6,000 to 4,000 BP.

Cultural patterns as reflected in the archeological record, particularly specialized subsistence practices, became codified within the last 3,000 years. The archeological record becomes more complex, as specialized adaptations to locally available resources were developed and populations expanded. Many sites dated to this time period contain mortars and pestles and/or are associated with bedrock mortars implying the intense exploitation of the acorn. The range of subsistence resources utilized along with regional exchange systems expanded significantly. Along the coast and in the Central Valley, archeological evidence of social stratification and craft specialization is indicated by well-made artifacts such as charmstones and beads, often found as mortuary items. Ethnographic lifeways serve as good analogs for this period.

Ethnography

The project area is located within the ethnographic boundary of the Ompin tribe of the Bay Miwok (Kelly 1978) at the time of initial contact with European/American culture (circa AD 1776). The territorial boundaries of the Bay Miwok are described as extending along the northeastern portion of the east bay area, while the Ompin, specifically are generally confined to the present-day City of Pittsburg and north to rural south Solano County.

The Bay Miwok language group is part of the larger Utian language family (Shipley 1978), which likely entered the region via the lower Sacramento Valley between 4,500 and 4,000 YBP. The Bay Miwok were similar to many California Native American groups, for whom the basic social unit was the family, although the village, or tribelet, may also have functioned as a social, political and economic unit. Villages were usually located near water sources. Villages typically consisted of a scattering of houses, conically constructed of tule or grasses, and numbering from four or five to several dozen in larger villages, each house containing a single family of from three to seven people.

As with all northern California Indian groups, economic life for these groups revolved around hunting, fishing and the collecting of plant foods. Deer were an important meat source and were hunted by individuals by stalking or snaring, or by groups in community drives. Acorns represented one of the most important vegetal foods and were particularly abundant within the Valley Oak Woodlands, which once dominated lands in the project vicinity.

The ceremonial chief directed the entire tribelet's Kuksu Cult, a religious cult and secret society that performed tribal initiations, ghost ceremonies and curing ceremonies (Kroeber 1907).

The neighboring Coast Miwok were documented by Asians and Europeans as early as the late 16th century, while the Bay Miwok were likely not contacted by outsiders until the late 18th century. Prior to contact, their populations remained relatively stable until the incursion of Spanish settlers and missionaries during the latter portion of the 18th century. The indigenous populations at this time were "missionized" and relocated to Mission San Francisco de Asis, and other missions southwest of their traditional territory. By 1812, church records indicated that 859 Bay Miwok had converted to Catholicism. By 1823, only 52 of these converts were living. Due to "missionization," inter-tribal marriages became more common, and new missions were established throughout the tribe's traditional lands.

Historic Context

Recorded history in the project area begins with the attempts of Spanish colonists to explore parts of California beyond the coastal zone. Franciscan missions were initially established in San Jose, Sonoma and San Francisco, while a military fort (the Presidio) was established in what would become San Francisco in 1776. While no missions were established in the project region, Spanish expeditions did explore the east bay region.

With Mexico gaining independence from Spain in 1821, the newly formed government secularize the Spanish missions and thus increased its land holdings and wealth. Various Mexican governors, beginning in the 1830's, eventually parceled out these vast landholdings. Land was granted to various individuals in order to reward them for their services to the government and the military, as well to serve as an incentive to Mexicans living elsewhere to populate these newly secularized lands.

Between 1836 and 1846, fifteen land grants were established in Contra Costa County, one of these was the Rancho Los Medanos, which was granted by Mexican governor, Juan

Alvarado, in 1839, to Jose Antonio Mesa and Jose Miguel Garcia, within which the present project property is located (University of California, Berkeley 2003).

The ultimate result of the Mexican-American War, which lasted from 1846 to 1848, was the surrender of California under the Treaty of Guadalupe Hidalgo. The following year witnessed the Gold Rush into northern California, and the state, as a whole, underwent substantial demographic changes.

In 1849, Mesa and Garcia sold the southern half of their grant to Colonel Jonathan D. Stevenson. Legal clarification of the title resulted in an 1851 correction that Stevenson was in fact the owner of the western portion of the grant, not the southern portion of the grant, as originally stated. As commander of the 1st New York Volunteers, Stevenson had been part of the 1847 United States invasion and occupation of California, and once he had completed the grant acquisition, he went about surveying his lands, and named the community "New York of the Pacific." In 1872, Stevenson successfully patented his lands, and sold the rancho to a San Francisco banking firm. Over the following decades, the land would exchange hands through various owners.

During Stevenson's tenure, large quantities of coal were discovered in the region, and the community of New York of the Pacific became known as Black Diamond. In 1911, the community was named Pittsburg in honor of the steel and mining industries that the community shared with its Pennsylvania brethren.

Contra Costa County, within which the present APE is located, was one of the original 27 counties when California became a State in 1850. Initially, the County was to be named Mt. Diablo County, but was ultimately named based on different geographical proximities (*Contra*=opposite; *Costa*=coast).

It was during the latter half of the 19th century that the economic setting of Contra Costa County began its shift into the agricultural sector, most notably in 1873 when Alamo farmer, Myron Hall successfully grafted a Persian walnut tree cutting to a native black walnut trunk. This invention led to a notably successful economic endeavor for many decades in the region (Emanuels 1993).

Finally, in 1878, the Southern Pacific Railroad extended service through the region, passing a short distance south of the present APE, while the Sacramento Northern Railroad, a subsidiary of Western Pacific, came into existence around 1929, and was composed of the Oakland, Antioch & Eastern Railroad, and the Northern Electric Interurban Railroad. Each of these latter lines were in service as early as 1900. A portion of this overall line trends east-west a short distance north of the APE.

3. RECORDS SEARCH and SOURCES CONSULTED

Several types of information were considered relevant to evaluating the types of archaeological sites and site distribution that might be encountered within the project area. The information evaluated prior to conducting the pedestrian survey includes data maintained by the Northwest Information Center, and available published and unpublished documents relevant to regional prehistory, ethnography, and early historic developments.

Northwest Information Center Records

The official Contra Costa County archaeological records were examined on July 21, 2021 (NWIC File No. 20-2613). This search documented the following existing conditions for a 0.25-mile radius centered on the APE:

- According to the Information Center's records, no cultural resources have been documented within the present APE's boundary. Five (5) resources have been documented within the 0.25-mile search radius.

- According to the Information Center, portions of the present APE have been subjected to previous archaeological investigation as a result of seven (7) investigations. Twelve (12) additional investigations have been conducted within the 0.25-mile search radius. Finally, twenty-two (22) reports categorized as "Other Reports" due to a lack of pedestrian survey, ambiguous locational information, and often simply cultural overviews, have been documented within the APE and/or within the search radius. These forty-one (41) reports are summarized as follows.

NWIC #	Date	Author(s)
S-000595	1974	King
S-000848	1976	Fredrickson
S-001978	1960	Aiello
S-002458	1981	Ramiller, Ramiller, Werner, Stewart
S-002458a	1982	Ramiller
S-002458b	1982	Werner
S-002458c	1982	Stewart
S-002458d	1982	Stewart
S-002458e	1982	Ramiller
S-005208	1977	Greenway, Soule
S-007386	1985	Chavez
S-009214	1987	Ambro
S-009462	1977	Miller
S-009583	1978	Mayfield
S-009795	1986	Jackson
S-010040	1988	Bramlette, Praetzellis, Praetzellis, Fredrickson
S-010040a	1991	Bramlette, Praetzellis, Praetzellis, Dowdall, Brunmeier, Fredrickson
S-010268	1988	Chavez, Woodbridge
S-015529	1993	Gearhart, Bond, Hyot, Cleland, Anderson, Snethcamp, Wesson, Meville, Marcus, York, Wilson

NWIC #	Date	Author(s)
S-016660	1992	Fentress
S-017835	1975	Suchey
S-017993	1995	Hatoff, Voss, Waechter, Wee, Bente
S-017993a	1995	Woodward-Clyde Consultants
S-017993b	1995	Woodward-Clyde Consultants
S-017993c	1995	Woodward-Clyde Consultants
S-017993d	1995	Woodward-Clyde Consultants
S-017993e	1995	Woodward-Clyde Consultants
S-017993f	1995	Woodward-Clyde Consultants
S-017993g	1995	Woodward-Clyde Consultants
S-017993h	1995	Woodward-Clyde Consultants
S-017993i	1995	Woodward-Clyde Consultants
S-017993j	1995	Woodward-Clyde Consultants
S-017993k	1995	Woodward-Clyde Consultants
S-017993l	1995	Woodward-Clyde Consultants
S-017993m	1995	Woodward-Clyde Consultants
S-018217	1996	Gmoser
S-018352	1976	Arthur D. Little, Inc.
S-018352a	1976	Cvijanovic, Aull
S-018352b	1976	Busby
S-018440	1996	West, Welch
S-020395	1998	Gillette
S-022464	1999	Jones & Stokes Associates, Inc.
S-022929	2000	Atchley
S-022929a	2000	Dour-Smith
S-022929b	2000	Calpo
S-024322	1998	Morgan, Bachand
S-024322a	1998	Morgan, Bachand
S-024322b	2000	URS
S-030204	2003	Gillette
S-030579	2004	Busby
S-031375	2004	Lewis
S-031375a	2004	Heidecker
S-031375b	2004	Young, Rosenthal
S-031375c	2004	Bunse
S-031405	2006	Allan
S-032596	2006	Milliken, King, Mikkelsen
S-033600	2007	Meyer, Rosenthal
S-035196	2006	Estes, Arrigoni, Buckley, Allan, Self
S-035196a	2007	Donaldson, Fry
S-035244	2008	Baker, Shoup
S-035244a	2007	Shoup
S-035244b	2007	Hill, Shoup, Dobkin, Baker
S-035244c	2007	Baker, Shoup
S-037097	2010	Arrigoni, Young
S-046889	2011	Dexter, Cuellar
S-046889a	2014	Cimino, Carpenter, Meyer

NWIC #	Date	Author(s)
S-046889b	2014	Roland-Nawi, Leigh
S-046909	2015	Fahimi-Fike
S-046909a	2015	ICF International
S-049780	2017	Byrd, Whitaker, Mikkelsen, Rosenthal
S-049780a	2016	Polanco
S-050521	2017	Koenig
S-50521a	2019	Koenig

Other Sources Consulted

In addition to examining the archaeological site and survey records of Contra Costa County maintained at the Northwest Information Center, the following sources were also included in the search conducted at the Information Center, or were evaluated separately:

- The National Register of Historic Places (1986, Supplements).
- The California Register of Historical Resources.
- The California Inventory of Historic Resources (State of California 1976).
- The California Historical Landmarks (State of California 1996).
- The California Points of Historical Interest (May 1992 and updates).
- The Historic Property Data File (OHP 2012).
- Plat of the Rancho Los Medanos (1872).
- GLO Plat, T2N, R1E (1870).
- USGS Pittsburg, CA 15' quadrangle (1908).
- USGS Pittsburg, CA 15' quadrangle (1953).
- Map of Contra Costa and Part of Alameda County (n.d.).
- NETR topographic maps (1908, 1914, 1918, 1936, 1943, 1947, 1951, 1955, 1960, 1965, 1969, 1978, 1986, 1995, 2012, 2015, 2018).
- NETR Aerials (1949, 1957, 1958, 1964, 1966, 1968, 1979, 1982, 1987, 1993, 2002, 2005, 2009, 2010, 2012, 2014, 2016, 2018).
- Existing published and unpublished documents relevant to prehistory, ethnography, and early historic developments in the vicinity. These sources, reviewed below, provided a general environmental and cultural context by means of which to assess likely site types and distribution patterns for the project area.

4. CULTURAL RESOURCES SURVEY and CULTURAL INVENTORY

Survey Strategy and Field Work

All of the APE was subjected to intensive pedestrian survey by means of walking parallel transects spaced at 20-meter intervals.

In searching for cultural resources, the surveyor considered the results of background research and was alert for any unusual contours, soil changes, distinctive vegetation patterns, exotic materials, artifacts, feature or feature remnants and other possible markers of cultural sites.

Fieldwork was undertaken on July 25, 2021 by Principal Investigator, Sean Michael Jensen, M.A. Mr. Jensen is a professional archaeologist, historian and architectural historian, with 35 years of experience in archaeology, architectural history and history, who meets the professional requirements of the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (Federal Register, Vol. 48, No. 190), as demonstrated in his listing on the California Historical Resources Information System list of qualified archaeologists, architectural historians and historians. No special problems were encountered and all survey objectives were satisfactorily achieved.

General Field Observations

Fieldwork identified the following general conditions within the project area. All of the present APE has been impacted directly by a series of intensive disturbances, including past ranching and farming, followed by wholesale grubbing and grading, and ultimately unauthorized trash dumping.

Examination of the USGS quadrangles, NETR topographic maps and historic aerials, confirmed that no buildings or structures ever occupied the present APE. Adjacent features (i.e., railroad spur and line, Contra Costa Canal) appear to have marginally affected the present APE's boundary.

Prehistoric Resources

No evidence of prehistoric activity or occupation was observed during the present pedestrian survey. The absence of such resources may be explained, at least in part, by the historic through contemporary disturbances to the entire APE. As previously noted, the entire APE has been subjected to ranching, farming, soil discing and ripping, as well as contemporary grubbing and grading, and unauthorized trash dumping.

Historic Resources

No historic-era sites were observed within the present APE. The absence of such resources is best explained by the degree of disturbance to which all of the APE has been subjected.

5. ELIGIBILITY RECOMMENDATIONS

Sites identified within the project area were to be evaluated for significance in relation to CEQA significance criteria. Historical resources per CEQA are defined as buildings, sites, structures, objects, or districts, each of which may have historical, architectural, archaeological, cultural, or scientific significance. CEQA requires that, if a project results in an effect that may cause a substantial adverse change in the significance of a historical resource, alternative plans or mitigation measures must be considered; however, only significant historical resources need to be addressed. Therefore, before developing mitigation measures, the significance of cultural resources must be determined in relation to criteria presented in PRC 15064.5, which defines a historically significant resource (one eligible for listing in the California Register of Historical Resources, per PRC SS5024.1) as an archaeological site which possess one or more of the following attributes or qualities:

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

In addition, CEQA further distinguishes between archaeological sites that meet the definition of a significant historical resource as described above (for the purpose of determining effects), and "unique archaeological resources." An archaeological resource is considered "unique" (Section 21083.2(g)) when the resource not merely adds to the current body of knowledge, but when there is a high probability that the resource also:

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

6. PROJECT EFFECTS

A project may have a significant impact or adverse effect on significant historical resources/unique archaeological resources if the project will or could result in the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance or values of the historic resource would be materially impaired. Actions that would materially impair a cultural resource are actions that would alter or diminish those attributes of a site that qualify the site for inclusion in the California Register of Historical Resources.

Based on the specific findings detailed above under ***Cultural Resources Survey and Cultural Inventory***, no significant historical resources/unique archaeological resources are present within the project area and no significant historical resources/unique archaeological resources will be affected by the undertaking, as presently proposed.

7. NATIVE AMERICAN CONSULTATION

Consultation was undertaken with the Native American Heritage Commission (NAHC) re. sacred land listings for the property. An information request letter was delivered to the NAHC on June 21, 2021. The NAHC responded with a letter dated July 13, 2021, indicating that a search of their Sacred Lands files returned negative results.

8. PROJECT SUMMARY

This report details the results of a cultural resources inventory survey involving creation of a personal property self-storage commercial development, involving approximately 12.5-acres of land located immediately adjacent to the south side of Pittsburg-Antioch Highway, approximately 200 meters north of State Highway 4, approximately one mile west of Auto Center Drive, within the City of Pittsburg, Contra Costa County, California.

The proponent proposes to create a personal property self-storage commercial development, which will include grading and land recontouring, construction of new commercial buildings and structures, creation of access roads, placement of buried utilities, and general landscaping.

Existing records at the Northwest Information Center document that portions of the present APE had been subjected to previous archaeological investigation, and that no historic properties have been documented within the APE. As well, the present effort included an intensive-level pedestrian survey. No prehistoric or historic-era cultural resources were identified during the pedestrian survey.

Consultation was undertaken with the Native American Heritage Commission (NAHC) re. sacred land listings for the property. An information request letter was delivered to the NAHC on June 21, 2021. The NAHC responded with a letter dated July 13, 2021, indicating that a search of their Sacred Lands files returned negative results.

The probability of encountering buried archaeological sites within the APE is low. This conclusion is derived in part from the observed soil matrices which have been subjected to a high degree of disturbance associated with past ranching and farming where ripping and discing penetrated through at least 24-inches of soils. Evidence of ground disturbance assisted in determining whether or not subsurface resources were present within the APE. Overall, the soil types present and contemporary disturbance would warrant a finding of low probability for encountering buried archaeological sites.

Based on the absence of significant historical resources/unique archaeological resources within the APE, archaeological clearance is recommended for the project/undertaking as presently proposed, although the following general provisions are considered appropriate:

1. ***Consultation in the event of inadvertent discovery of human remains***: In the event that human remains are inadvertently encountered during any project-associated ground-disturbing activity or at any time subsequently, State law shall be followed, which includes but is not limited to immediately contacting the County Coroner's office upon any discovery of human remains.

2. ***Consultation in the event of inadvertent discovery of cultural material***: The present evaluation and recommendations are based on the findings of an inventory-level surface survey only. There is always the possibility that important unidentified cultural materials could be encountered on or below the surface during the course of future construction activities. This possibility is particularly relevant considering the constraints generally to archaeological field survey, and particularly where past ground disturbance activities (e.g., farming, grading, etc.) have partially obscured historic ground surface visibility, as in the present case. In the event of an inadvertent discovery of previously unidentified cultural material, archaeological consultation should be sought immediately.

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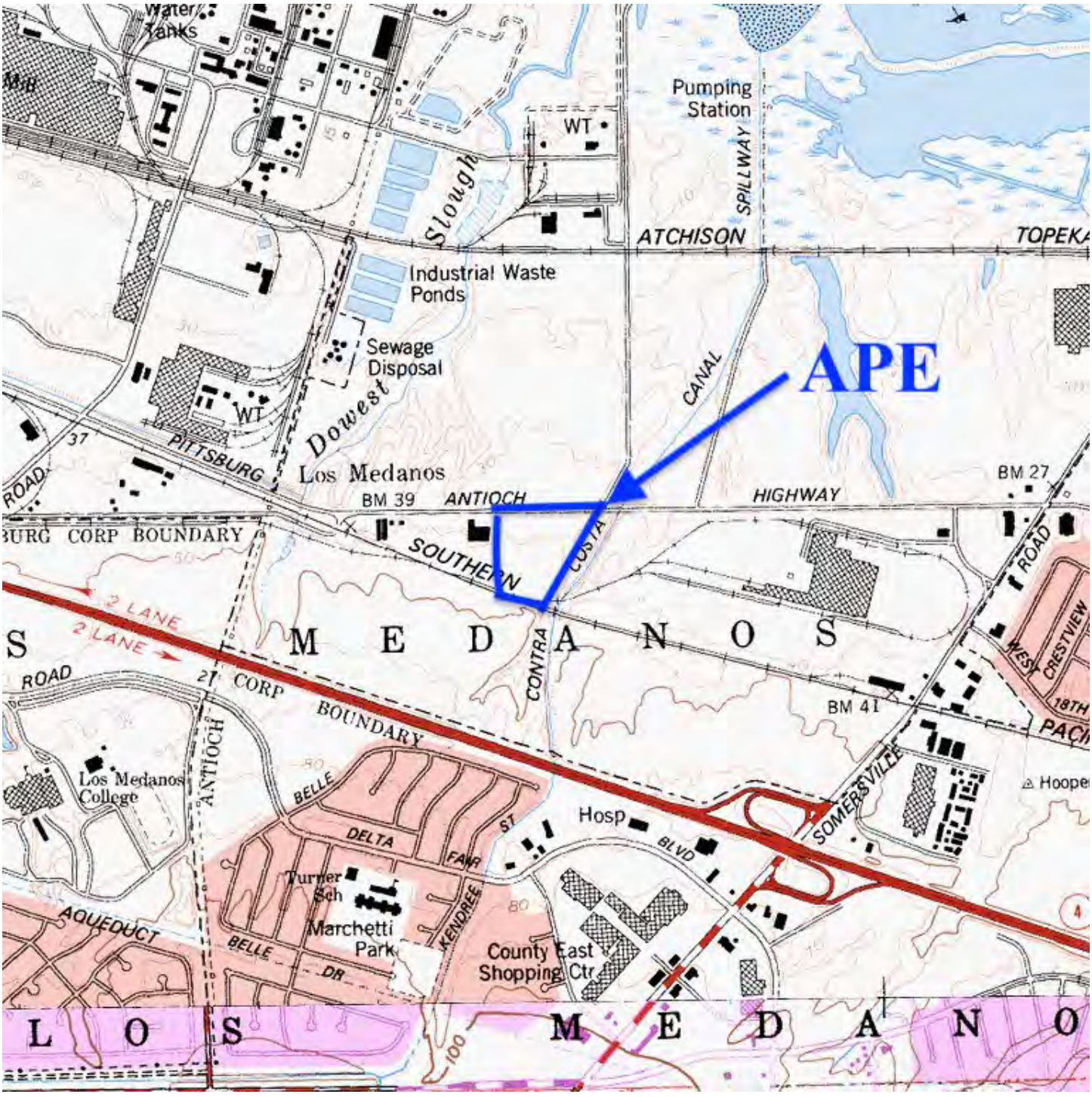
CULTURAL RESOURCES INVENTORY SURVEY

Pittsburg Self Storage Development Project
circa 12.5-Acres
City of Pittsburg, Contra Costa County, California

ATTACHMENTS

- APE Map
- Records Search from Northwest Information Center (NWIC)
- Information request letter to the Native American Heritage Commission (NAHC)
- Response from the NAHC


APE
Water Tanks
Pumping Station
WT
Slough
SPILLWAY
ATCHISON
TOPEKA
Industrial Waste Ponds
Sewage Disposal
CANAL
Dowest
PITTSBURG
Los Medanos
BM 39
ANTIOCH
HIGHWAY
BM 27
SOUTHERN
COSTA
CONTRA
2 LANE
2 LANE
ROAD
CORP BOUNDARY
BM 41
WEST CRESTVIEW
Los Medanos College
ANTIOCH
BELLE
DELTA
FAIR
ST
Hosp
BLVD
SOMERSVILLE
Turner Sch
Marchetti Park
KENDREE
AQUEDUCT
BELLE
DR
County East Shopping Ctr
L O S
M E D A N O

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA, COLUSA, CONTRA COSTA, DEL NORTE, HUMBOLDT, LAKE, MARIN, MENDOCINO, MONTEREY, NAPA, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLATA, SANTA CRUZ, SOLANO, SONOMA, YOLO

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7/21/2021 NWIC File No.: 20-2613

Sean Jensen
Genesis Society
127 Estates Drive
Chico, CA 95928

Re: Pittsburg Self Storage

The Northwest Information Center received your record search request for the project area referenced above, located on the Antioch North USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a one-quarter mile radius:

Resources within project area:	None
Resources within ¼-mile radius:	P-07-000487, P-07-000813, P-07-002877, P-07-002878, P-07-002879
Reports within project area:	S-10040, S-17993, S-24322, S-31405, S-35196, S-35244, S-37097; Other Reports S-00595, S-00848, S-01978, S-02458, S-05208, S-09462, S-09583, S-09795, S-15529, S-16660, S-17835, S-18217, S-20395, S-30204, S-32596, S-33600, S-49780
Reports within ¼-mile radius:	S-07386, S-09214, S-10268, S-18352, S-18440, S-22464, S-22929, S-30579, S-31375, S-46889, S-46909, S-50521; Other Reports S-12790, S-22812, S-30728, S-33545, S-49320

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☒ enclosed	☐ not requested	☐ nothing listed
OHP Built Environment Resources Directory:	☒ enclosed	☐ not requested	☐ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed

Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☐ not requested	☒ nothing listed
Historical Maps:	☒ enclosed	☐ not requested	☐ nothing listed
Local Inventories:	☒ enclosed	☐ not requested	☐ nothing listed
GLO and/or Rancho Plat Maps:	☒ enclosed	☐ not requested	☐ nothing listed
Shipwreck Inventory:	☐ enclosed	☒ not requested	☐ nothing listed

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Jessika Akmenkalns, Ph.D.
Researcher

GENESIS SOCIETY

a Corporation Sole

127 ESTATES DRIVE
CHICO, CALIFORNIA 95928
(530) 680-6170
seanjensen@comcast.net

June 21, 2021

Native American Heritage Commission

1550 Harbor Boulevard,
West Sacramento, California 95691

Subject: ***Pittsburg Self Storage Development Project, circa 12.5-acres, City of Pittsburg, Contra Costa County, California.***

Dear Commission:

We have been requested to conduct the archaeological survey, for the above-cited project, and are requesting any information you may have concerning archaeological sites or traditional use areas for this area. Any information you might supply will be used to supplement the archaeological and historical study being prepared for this project.

Project Name:	Pittsburg Self Storage Development Project
County:	Contra Costa
Map:	USGS Antioch North, CA 7.5'
Location:	Portion of T2N, R1E, Section 22

Thanks in advance for your assistance.

Regards,

Sean Michael Jensen

Sean Michael Jensen, Administrator

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

July 13, 2021

Sean Michael Jensen, Administrator
Genesis Society

Via Email to: seanjensen@comcast.net

Re: Pittsburg Self Storage Development Project, Contra Costa County

Dear Mr. Jensen:

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

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

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Sarah.Fonseca@nahc.ca.gov.

Sincerely,

Sarah Fonseca
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Contra Costa County
7/13/2021

Amah MutsunTribal Band of Mission San Juan Bautista
Irene Zwierlein, Chairperson
3030 Soda Bay Road — Costanoan
Lakeport, CA, 95453
Phone: (650) 851 - 7489
Fax: (650) 332-1526
amahmutsuntribal@gmail.com

Chicken Ranch Rancheria of Me-Wuk Indians
Lloyd Mathiesen, Chairperson
P.O. Box 1159 — Me-Wuk
Jamestown, CA, 95327
Phone: (209) 984 - 9066
Fax: (209) 984-9269
lmathiesen@crtribal.com

Guidiville Indian Rancheria
Donald Duncan, Chairperson
P.O. Box 339 — Pomo
Talmage, CA, 95481
Phone: (707) 462 - 3682
Fax: (707) 462-9183
admin@guidiville.net

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

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods, MLD Contact
1615 Pearson Court — Costanoan
San Jose, CA, 95122
Phone: (408) 673 - 0626
kanyon@kanyonkonsulting.com

Muwekma Ohlone Indian Tribe of the SF Bay Area
Monica Arellano, Vice Chairwoman
20885 Redwood Road, Suite 232 — Costanoan
Castro Valley, CA, 94546
Phone: (408) 205 - 9714
marellano@muwekma.org

Nashville Enterprise Miwok-Maidu-Nishinam Tribe
Cosme Valdez, Chairperson
P.O. Box 580986 — Miwok
Elk Grove, CA, 95758-0017
Phone: (916) 429 - 8047
Fax: (916) 429-8047
valdezcome@comcast.net

North Valley Yokuts Tribe
Timothy Perez,
P.O. Box 717 — Costanoan
Linden, CA, 95236 — Northern Valley
Phone: (209) 662 - 2788 — Yokut
huskanam@gmail.com

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

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

Tule River Indian Tribe
Kerri Vera, Environmental Department
P. O. Box 589 — Yokut
Porterville, CA, 93258
Phone: (559) 783 - 8892
Fax: (559) 783-8932
kerri.vera@tulerivertribe-nsn.gov

Tule River Indian Tribe
Joey Garfield, Tribal Archaeologist
P. O. Box 589 — Yokut
Porterville, CA, 93258
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Fax: (559) 783-8932
joey.garfield@tulerivertribe-nsn.gov

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

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Pittsburg Self Storage Development Project, Contra Costa County.

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589 Yokut
Porterville, CA, 93258
Phone: (559) 781 - 4271
Fax: (559) 781-4610
neil.peyron@tulerivertribe-nsn.gov

Wilton Rancheria
Jesus Tarango, Chairperson
9728 Kent Street Miwok
Elk Grove, CA, 95624
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Fax: (916) 683-6015
jtarango@wiltonrancheria-nsn.gov

Wilton Rancheria
Dahlton Brown, Director of Administration
9728 Kent Street Miwok
Elk Grove, CA, 95624
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dbrown@wiltonrancheria-nsn.gov

Wilton Rancheria
Steven Hutchason, THPO
9728 Kent Street Miwok
Elk Grove, CA, 95624
Phone: (916) 683 - 6000
Fax: (916) 863-6015
shutchason@wiltonrancheria-nsn.gov

The Confederated Villages of Lisjan
Corrina Gould, Chairperson
10926 Edes Avenue Bay Miwok
Oakland, CA, 94603 Ohlone
Phone: (510) 575 - 8408 Delta Yokut
cvltribe@gmail.com

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

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Pittsburg Self Storage Development Project, Contra Costa County.

Appendix GEO

Design Level Geotechnical Investigation

DESIGN LEVEL
GEOTECHNICAL INVESTIGATION
PROPOSED PITTSBURG SELF STORAGE
APN 074-100-018
PITTSBURG ANTIOCH HIGHWAY
PITTSBURG, CALIFORNIA

For

Pacific Property Advisors, Inc.

June 11, 2018

Job No. 3966.200

Via E-Mail

BERLOGAR STEVENS & ASSOCIATES

June 11, 2018
Job No. 3966.200

Mr. Chris Koenig
Pacific Property Advisors, Inc.
185 Front Street, Suite 207
Danville, California 94526

Subject: Design Level Geotechnical Investigation
Proposed Pittsburg Self Storage
APN 074-100-018
Pittsburg Antioch Highway
Pittsburg, California

Dear Mr. Koenig:

Berlogar Stevens & Associates (BSA) is pleased to present our Design Level Geotechnical Investigation report for the Proposed Pittsburg Self Storage project in Pittsburg, California. Berlogar Geotechnical Consultants (BGC), predecessor to BSA, previously completed a geotechnical investigation of the subject site. The subsurface and laboratory data collected during the 2006 investigation of the site was used in our geotechnical assessment of the site for this study. This report provides conclusions regarding potential impacts of regional geologic hazards, site surface and subsurface conditions on the proposed development and our recommendations for the design and construction aspects of site grading, underground utilities, building foundations and pavements on the subject project.

PROJECT UNDERSTANDING

The project site is located on the south side of Pittsburg Antioch Highway, west of Verne Roberts Circle, in Pittsburg, California. The irregular-shaped site occupies an area of about 12 acres. We understand that the current development concept is for grading and paving of approximately 8 of the 12 acres followed by placement of rows of shipping containers for use as self storage units. The development will be located in the central and western portions of the site. The eastern portion of the site will remain undeveloped. An office building with a footprint on the order of 1,500 square feet will be constructed at the site entry off of Pittsburg Antioch Highway. The building is anticipated to be a wood-frame structure or potentially a concrete masonry unit (CMU) structure founded on a shallow foundation with a non-structural concrete floor slab. Specific building load information was not available at the time this report was prepared. With consideration of the type of construction, we estimated line loads at 2,000 pounds per lineal foot for dead plus live loads. Grading is anticipated to be limited to cuts and fills of about 2 feet or less in depth.

PURPOSE AND SCOPE OF SERVICES

The purpose of this geotechnical investigation was to explore and evaluate the soil and groundwater conditions as well as potential geologic hazards to assess the potential impacts of those conditions on the proposed development of the site and to provide geotechnical recommendations for use in design and construction of the proposed project. The scope of services for this investigation was outlined in our proposal of May 17, 2018, and included the following:

- Review of readily available published geologic/geotechnical literature and maps pertinent to the area.
- Review of the Geotechnical Investigation report[1] prepared by Berlogar Geotechnical Consultants (BGC) in 2006.
- Site reconnaissance by a member of our engineering staff.
- Collection of one near-surface soil sample for determination of the expansion potential and corrosivity of the soil.
- Laboratory testing of selected soils samples.
- Engineering analyses.
- Preparation of this report presenting our findings, conclusions and recommendations.

FIELD EXPLORATION

A reconnaissance of the site was performed by a member of our staff on May 22, 2018 to observe the current conditions of the site. A bulk soil sample was collected from the upper 2 feet of the site at that time. The sample was collected in the general vicinity of the future office building along the Pittsburg Antioch Highway. The approximate sampling location is shown on the Site Plan, Plate 2.

As noted above, a geotechnical investigation of the site was conducted in 2006 by BGC. The subsurface exploration conducted by BGC consisting of drilling 13 borings. The borings were drilled on February 3, 5 and 6, 2006, using a truck-mounted drill rig with hollow stem auger. The borings varied in depths from about 20 to 50 feet below the existing ground surface. A member of the BGC staff visually classified the soils in the field as the drilling progressed and recorded a log of each boring. Visual classification of the soils was made in general accordance with the Unified Soil Classification System (ASTM D2487). Soil sampling was conducted as the borings were advanced using a 2.5-inch inside diameter Modified California sampler with liners and a 1⅜-inch inside diameter Standard Penetration Test (SPT) split-spoon sampler (smooth inside bore with no provisions for use of liners). The samplers were driven into the underlying soil to a depth of 18 inches with a 140-pound hammer falling 30 inches. The number of blows required to drive the samplers the last 12 inches of the 18-inch drive are shown as blows per foot on the boring logs. The boring logs are presented in Appendix A. As required by Contra Costa County, the boreholes

[1] "Geotechnical Investigation, Dow Parcel (APN 074-100-018), Pittsburg-Antioch Highway, Pittsburg, California," dated March 2, 2006, Job No. 2886.100.

were backfilled with neat cement grout after drilling and sampling. The grouting was performed with the supervision of a County inspector. The approximate locations of the borings are shown on the Site Plan, Plate 2. These locations are approximate and were determined based on pacing and orientation from existing features on the site.

LABORATORY TESTING

The soil sample collected on May 22, 2018 was returned to our geotechnical laboratory. Testing was performed to determine the Atterberg Limits (Plasticity Index) and gradation for use in evaluation of the expansion potential of the soil. A portion of the sample was submitted to CERCO Analytical for corrosivity testing. CERCO is a state-certified analytical laboratory for soil corrosivity testing.

Geotechnical and analytical laboratory testing of soil samples was performed in 2006 as well. Laboratory testing consisted of moisture content, dry density, Atterberg limits, unconfined compression and direct shear tests on selected samples. The results of the moisture content and dry density tests are presented on the individual boring logs.

Geotechnical laboratory test results are presented in Appendix B. The CERCO Analytical report is included in Appendix C.

PROJECT SITE

The subject parcel consists of a vacant, grass-covered, approximately 12-acre parcel which is bounded by the Pittsburg Antioch Highway along the north side, the Contra Costa Canal Spillway to the east, an abandoned railroad line to the south, and commercial property to the west. The westerly two-thirds+/- of the site is relatively level, with very low gradient sheet drainage towards the north. The site slopes down gently to the north with about 10 feet of topographic relief in a distance of about 730 feet. To the east of that portion, the ground slopes down at about 6 Horizontal: 1 Vertical (6H:1V) to an excavated basin with a length of about 400 feet and top width of about 160 to 180 feet, located on the site along the east side of the site. The basin area is separated by a berm from the spillway located along the easterly boundary of the site. A natural creek channel appears to have formerly been located along the currently closed drainage.

Surface elevations on the site range from about 50 feet at the southwest corner of the site to 36 feet on the west side of the basin at the Pittsburg Antioch Highway frontage. The bottom of the basin has approximate elevations of 18 to 21 feet. Surface elevations were obtained using Google Earth Pro. The site is about street level at the west end of the highway frontage and is elevated about 4 feet above the roadway at the east end of the frontage. The site is bounded by an open channel to the east-southeast side and railroad tracks to the south. The site is not presently developed. At the time of our site reconnaissance on May 22, 2018, the site was covered with dense grasses and weeds.

SUBSURFACE CONDITIONS

SOILS

The parcel is mapped as being underlain by late Pleistocene alluvial fan and fluvial deposits. These deposits are described as dense gravely and clayey sand or clayey gravel that fines upward to sandy clay. Maximum thickness is unknown but is at least 50 m.

The borings appear to indicate relatively uniform subsurface conditions across the flat portion of the parcel. The borings did not appear to encounter any significant fill deposits and typically encountered an upper soil consisting of several feet of very stiff to hard silty clay. The clay is moderately to highly expansive, with Plasticity Indexes ranging from 19 to 35. The underlying soils are predominately very stiff to hard silty to sandy clays and dense clayey sands. Minor lenses of dense sand and sandy silt were also encountered.

GROUNDWATER

Boring B-1 was the only boring to encounter groundwater and the level there was measured at about 35 feet bgs. The depth to groundwater should be expected to fluctuate both seasonally and from year to year. Fluctuations in the groundwater level may occur due to variations in precipitation, irrigation practices at the site and surrounding areas, climatic conditions, presence or absence of standing water in the on-site basin and the canal to the east, pumping from wells and other factors not evident at the time of our investigation. The evaluation of such factors and a detailed site groundwater evaluation are beyond the scope of this study.

The above is a general description of subsurface conditions encountered in the borings previously completed on the site. For a more detailed description of the soil conditions encountered, refer to the logs of borings in Appendix A.

GEOLOGIC AND SEISMIC HAZARDS

FAULTING AND SURFACE FAULT RUPTURE

The site is located in the seismically active eastern portion of the greater San Francisco Bay Area in Northern California. The seismicity of the area is dominated by the San Andreas, Hayward and Calaveras faults. We have reviewed the Alquist-Priolo Earthquake Fault Zone maps issued by the California Geological Survey (formerly the California Division of Mines and Geology). These maps were issued in response to the Alquist-Priolo Act. The site is not located within a designated State of California Alquist-Priolo Earthquake Fault Zone for active faults. According to the California Geological Survey (CGS), no known fault traces cross the site.

The closest fault included in an Alquist-Priolo Earthquake Fault Zone is the Concord–Green Valley fault, located at a distance of about 16-1/2 kilometers (10.3 miles) to the southwest.

Additional active faults in the area include but are not limited to the Mount Diablo Thrust fault located about 4-1/2 kilometers to the south and the Greenville fault located about 9 kilometers to the southwest. The San Andreas fault is located about 68 kilometers to the west and the Hayward fault is approximately 38 kilometers west of the parcel. It is our opinion that the potential for fault rupture at the site appears to be very low.

SEISMICITY AND SEISMIC GROUND SHAKING

The site is located in a region of high seismicity. As with all sites in the San Francisco Bay Area, the site should be expected to experience at least one moderate to large earthquake during the lifespan of the development. The site is located at approximately 38.0115 degrees North latitude and 121.84515 degrees West longitude. According to the USGS website, the peak ground acceleration (PGA) is 0.614 g. Some degree of structural damage due to strong seismic shaking should be expected at the site, but the risk can be reduced through adherence to seismic design codes. California Building Code seismic design parameters are discussed below.

SEISMIC HAZARD ZONES IN CALIFORNIA

Seismic Hazard Zone Maps are produced by the California Geologic Survey. The maps identify areas where soil liquefaction and earthquake-induced landslides are most likely to occur. The site is located outside of the area where maps have been completed. We reviewed Chapter 10 of the Contra Costa County General Plan, which addresses seismic hazards. Figure 10-5 shows the estimated liquefaction potential. The site is shown as having a "generally moderate to low" liquefaction potential. The site is not proximal to sloping ground or hillsides. Thus, the potential for earthquake-induced landsliding to occur on or in close proximity to the site is considered to be nil.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL

Based on the information collected during this investigation and the results of our analyses, it is our opinion that development of the site is feasible from a Geotechnical Engineering perspective, provided that the recommendations contained in this report are incorporated into the design and construction of the project. The predominant geotechnical consideration for this project is the presence of moderately to highly expansive near-surface soils. Our opinions, conclusions and recommendations are based on our field and office studies, the properties of soils encountered in our borings, results of the laboratory testing program and our understanding of the proposed project.

EXPANSIVE SOILS

The near-surface soils are classified as moderately to highly expansive. Expansive soils are characterized by their ability to undergo significant volume change (shrink or swell) due to

variations in moisture content. Changes in moisture content can result from rainfall, landscape irrigation, utility leakage, roof drainage, perched groundwater, drought, or other factors. Changes in soil moisture may result in unacceptable settlement or heave of structures, pavements and concrete slabs-on-grade supported over these materials. Moisture changes generally decrease with increasing depth of soil and the amount of volume change of expansive soils also decreases with increasing vertical stress at deeper depths.

Mitigation measures to reduce the potential detrimental effects of expansive soils on conventionally reinforced non-structural concrete slab-on-grade floors and pavements may include removal or over-excavation of the expansive soils and replacement of those soils with "non-expansive" soil. Chemical stabilization of expansive soils with the use of lime-treatment is an option to removal and replacement. The cost of mobilization and unit cost per square foot on projects less than 10,000 square feet generally preclude the use of lime treatment from an economical perspective. Where concrete floor slabs are designed as a structural element to resist the effects of expansive soils, such as post-tensioned concrete foundations, mitigation measures may be limited to the foundation design along with processing of subgrade soils to a higher moisture content and compaction to a lower relative compaction. Increased depth of embedment for shallow footings will aid in mitigating the potential effects of the expansive soils on the foundation.

Interior slabs (except for post-tensioned concrete foundations designed for expansive soils) should be founded on a minimum of 21-inches of "non-expansive" engineered fill. The placement of "non-expansive" fill soils over properly prepared expansive soil subgrade provides a protective soil layer that slows the evaporation rate and aids in distributing the local variation in soils with minor moisture changes. Based on the expansion potential of the soils encountered at the subject site, we recommend that interior concrete slab-on-grade floors and exterior concrete flatwork surrounding the buildings be supported by a 21-inch thick layer of "non-expansive fill," as discussed below. More detailed grading recommendations are provided in the following sections of this report.

The potential impacts of expansive soils on concrete flatwork should also be considered during project design and as the site is developed. Thicker concrete sections and steel reinforcement of concrete flatwork should be considered.

LIQUEFACTION

Liquefaction is a temporary transformation of saturated soil into a viscous liquid during strong to violent ground shaking associated with a major earthquake. Historically, the potential for liquefaction has been associated with cohesionless soil, such as sands and silty sands. Current practice in liquefaction evaluation now includes sands, silty sands and gravels, as well as silts and even some clay soils. While fine-grained soils (clays and silts) may not undergo complete liquefaction, these soils can be susceptible to cyclic softening. Liquefaction and cyclic softening both result in reduced soil shear strength. The loss of strength in both granular and fine-grained soils is a result of cyclically induced stresses which cause increased pore pressures within the soil matrix.

The sandy soils encountered in the borings were dense to very dense and were predominantly clayey sand. The clays are hard. Additionally, the depth to groundwater is on the order of 35 feet bgs. Due to the dense nature of the granular soils, the consistency of the clays and the lack of shallow groundwater, it is our opinion that the risk of having liquefaction or cyclic softening occur at the site is low.

Lateral spreading is a potential hazard commonly associated with liquefaction. This phenomenon typically occurs where the subject site is sloping or is adjacent to a descending slope or a free face, such as an open channel. The potential for lateral spreading at the site is judged to be low based on the density of the sands and consistency of the clays and the low potential for liquefaction to occur at the site.

SITE PREPARATION AND GRADING

"Non-Expansive" Fill

Where "non-expansive" fill is to be used as a mitigation measure for support of concrete slabs-on-grade, due to the presence of moderately to highly expansive surface soils at the site, the material used should be relatively impervious when compacted. Clean sand or very sandy soil is not acceptable for this purpose. Sandy soil will allow the surface water to drain into the expansive clayey soils below, which may result in swelling. The "non-expansive" fill should extend at least 5 feet beyond the perimeter of the building and adjoining concrete flatwork. Soil that meets the criteria listed below is considered to be "non-expansive."

NON-EXPANSIVE FILL PROPERTIES	
Percent Passing No. 200 Sieve	20 to 50
Plasticity Index (PI)	12 maximum
Liquid Limit	40 maximum
Expansion Index	20 maximum

General Site Preparation and Grading Recommendations

1. Vegetation at the site includes grasses and weeds. The above-ground portion of the vegetation should be cut off at ground surface and removed from the site. This can easily be accomplished by scraping of the site with grading equipment.
2. After the surface vegetation has been removed the required cuts and fills to establish design grades can be made. Exposed subgrade in areas that are at finished grade, have been cut to finished grade or that will receive fill should be scarified to a depth of 12 inches, moisture conditioned and compacted as discussed below.

3. If zones of soft or saturated soils are encountered during excavation and compaction, deeper excavations may be required to expose firm soils. This should be determined in the field by the Geotechnical Engineer.

4. Fill Soil

   - Import fill should meet the requirements for non-expansive fill as listed above. Fill materials should be subject to the evaluation of the Geotechnical Engineer prior to their use. Import fill should also be cleared of toxic or hazardous materials prior to importing to the site.

   - The onsite soil free of deleterious matter and rocks greater than 4 inches in largest dimension can be used as general engineered fill. If oversized particles are encountered, this material should be removed from the site.

5. Engineered fill is defined as material meeting the recommended soil properties that has been properly moisture conditioned, placed and compacted. Relative compaction or compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density determined by ASTM D1557 compaction test procedure. Optimum moisture is the water content (percentage by dry weight) corresponding to the maximum dry density.

6. Fill should be placed in thin lifts (normally 6 to 9 inches in loose lift thickness depending on the compaction equipment), properly moisture conditioned, and compacted as specified below.

7. Soil Moisture Conditioning and Compaction

   a. Expansive on-site clayey soils – 85 to 90 percent relative compaction at no less than 5 percent over the optimum moisture content.

   b. Non-expansive import soils – at least 90 percent relative compaction at no less than 3 percent over the optimum moisture content.

   c. The top 12 inches of finished subgrade in pavement areas should be moisture conditioned to at least 3 percent above the optimum moisture content and compacted to at least 93 percent relative compaction.

   d. Aggregate base in pavement areas, including below concrete slabs for vehicle parking, should be moisture conditioned to at least 3 percent above the optimum moisture content and compacted to at least 95 percent relative compaction.

8. Observation and soil density tests should be performed during grading to assist the contractor in obtaining the required degree of compaction and proper moisture content. Where the soil moisture content and/or compaction is outside the range required, additional effort and adjustments to the moisture content should be made until the specified compaction and moisture conditioning is achieved.

9. The Geotechnical Engineer should be notified at least 48 hours prior to starting grading operations. The procedure and methods of grading may then be discussed between the contractor and the Geotechnical Engineer.

UTILITY TRENCH LOCATION AND CONSTRUCTION

Trenches Adjacent to Building Foundations

To maintain the desired support for foundations, utility trenches running parallel or near-parallel to building foundations should be located away from the foundation such that the base of the trench excavation is located above an imaginary plane having an inclination of 1 horizontal to 1 vertical (1H:1V), extending downward from the bottom edge of the foundation toward the trench location. Where trench locations are restricted and must be in close proximity to foundations, footings or slab edges located adjacent to utility trenches should be deepened during the design of the project as necessary so that their bearing surfaces are below an imaginary plane having an inclination of 1H:1V, extending upward from the bottom edge of the adjacent utility trench. As an option to the use of a deepened foundation, the trench can be backfilled with controlled low strength material (CLSM) (sand-cement slurry) unless the use of CLSM is prohibited by the City of Pittsburg or the utility company.

Excavation

All excavations should conform to applicable State and Federal industrial safety requirements. Safety in and around utility trenches is the responsibility of the general and underground contractors. Where necessary, trench excavations should be shored in accordance with current CAL-OSHA requirements.

The walls of trenches extending into the clayey soils will likely stand in vertical cuts in the upper 4 to 5 feet with appropriate shoring, provided proper moisture content in the soils is maintained and that the trench walls are not subjected to vibration or surcharge loads above the excavation. Where weaker soils are encountered in the upper 4 to 5 feet of the site or trenches will extend deeper than 5 feet, trench sidewalls should be sloped no steeper than 1H:1V in stiff cohesive soil. In the event that granular soils are encountered, trench sidewalls should be no steeper than 1.5H:1V in moist granular soils and no steeper than 2H:1V in dry granular soils. Flatter trench slopes may be required if seepage is encountered during construction or if exposed soil conditions differ from those encountered in our borings. Heavy construction equipment, building materials, excavated soil, and vehicular traffic should not be allowed within 5 feet of the top (edge) of the excavation.

Backfill

Material types, quality and placement procedures for utility bedding and shading materials should meet local agency and/or other applicable utility providers' requirements. Where not otherwise precluded by the City of Pittsburg or utility company that will be responsible for the trenches after project completion, from a geotechnical perspective, utility trench backfill above the bedding and shading materials may consist of on-site soils that have been processed to remove rock fragments over 4 inches in largest dimension, rubbish, vegetation and other undesirable substances.

Backfill materials should be placed in level lifts about 4 to 12 inches in loose thickness, moisture conditioned and mechanically compacted. Lift thickness will be a function of the type of

compaction equipment in use. Thinner lifts (4- to 6-inch lifts) will be required for manually operated equipment, such as wackers or vibratory plates, and thicker lifts possible where a sheepsfoot wheel is used on the stick of an excavator. Jetting should not be used for densification of backfill on this project.

Trench backfill consisting of on-site fine-grained soil (clays) should be moisture conditioned to about 5 percent above optimum and compacted to between 85 and 90 percent relative compaction. Where sand or well-graded gravel is used as backfill, it should be moisture conditioned to slightly above the optimum moisture content and compacted to at least 93 percent relative compaction.

PAVEMENT AREA SUBGRADE AND AGGREGATE BASE

Prior to subgrade preparation, utility trench backfill in the pavement areas should be properly placed and compacted as previously recommended. The top 12 inches of soils for pavement subgrade should be scarified, moisture conditioned to at least 3 percent above the optimum moisture content and compacted to at least 93 percent relative compaction to provide a smooth, unyielding surface. The compacted subgrade should be non-yielding when proof-rolled with a loaded ten-wheel truck, such as a water truck or dump truck, prior to pavement construction. Subgrade soils should be maintained in a moist and compacted condition until covered with the complete pavement section.

Class 2 aggregate base should conform to the requirements found in Caltrans Standard Specifications Section 26. The aggregate base should be placed in thin lifts in a manner to prevent segregation, uniformly moisture conditioned to slightly above the optimum moisture content and compacted to at least 95 percent relative compaction to provide a smooth, unyielding surface.

SURFACE DRAINAGE

Surface water should not be allowed to collect on or adjacent to structures or pavements. Final site grading should provide surface drainage away from structures, pavements and slabs-on-grade to reduce the percolation of water into the underlying soils. If recommended surface gradients cannot be met or where there are landscape areas around the structure that cannot drain freely through sheet flow, area drains should be considered. Even with the recommended gradients there is a potential that ponding conditions may develop adjacent to the building over time. Where positive drainage around building cannot be established and maintained as part of the site grading design, area drains should be provided.

Pavement areas should be sloped and drainage gradients maintained to carry surface water off the site. Typical pavement design includes surface gradients of 2 percent in asphalt concrete pavement areas to provide surface drainage and to reduce the potential for water to penetrate into the pavement structure. Current site gradient is about 1.4 percent. We recommend that the slope gradient not be creased, with increases for drainage where possible.

BIORETENTION AREAS

Bioretention swales and basins should be located at least 5 feet away from foundations, pavements and exterior concrete flatwork. Bioretention swales and basins in close proximity to foundations have the potential to undermine the foundation or cause a reduction in the soil bearing capacity. Bioretention swales and basins located in close proximity to pavements and exterior concrete flatwork can cause settlement of these structures as well as cracking associated with lateral extension of these structures with lateral movement of the supporting soils. Where a 5-foot separation is not practical or possible due to site constraints, bioretention areas located within 5 feet of foundations, pavements or concrete flatwork should be constructed with structural side walls capable of withstanding the loads from the adjacent improvements. In the case of a building foundation in close proximity to a bioretention area, a deepened foundation edge designed as a retaining structure may be an option. The Civil Engineer should coordinate their work with the foundation designer. The foundation or foundation slab edge section should extend 6 inches below a plane projected up from the base of the bioretention basin toward the foundation at a slope of 1 Horizontal to 1 Vertical (1H:1V). Lateral earth pressures on the foundation or down-turned slab edge will need to be considered by the foundation designer. Precast units may be an expedient method of installing bioretention facilities that are capable of supporting concrete flat work, roadways and foundations.

Bioretention areas located within 5 feet of building foundations or pavements should also be lined with impermeable liners. A perforated drain pipe should be provided within the basin when a liner is installed or where the site soils have a low permeability rate and infiltration capacity (i.e. the clay soils at the subject site). The perforated pipe should lead to a solid-wall pipe to convey accumulated water to a suitable point of discharge.

SOIL CORROSIVITY CONSIDERATIONS

Corrosivity analysis was performed by CERCO Analytical, Inc. of Concord, California on one sample of the near-surface soils. As reported by CERCO Analytical, the sample was determined to be "moderately corrosive" based on resistivity test results. CERCO Analytical's report (see Appendix C) included the following recommendation: "All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion." Chloride, sulfate and sulfide ion concentrations each reflect none detected. The soil pH was determined to be 5.97. CERCO Analytical reported that the pH "does present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures. Corrosion prevention measures should be considered; a corrosion engineer should be consulted. Please refer to the CERCO Analytical report included in Appendix C for more information regarding their test results and brief evaluation.

CALIFORNIA BUILDING CODE (CBC) SEISMIC DESIGN PARAMETERS

The following 2016 California Building Code seismic design criteria was obtained using the U.S. Geological Survey Earthquake Hazards Program, U.S. Seismic Design Maps application for determination of Design Ground Motions. The program is found online at https://earthquake.usgs.gov/hazards/designmaps/. Seismic design parameters were determined with consideration of the 2010 ASCE 7-10 (w/March 2013 errata) publication, site location of latitude: 38.0115 degrees North latitude and 121.84515 degrees West longitude, Site Class D (Stiff Soil), and risk category I/II/III.

2016 California Building Code Seismic Design Criteria	
Site Class	D
Mapped MCE_R Spectral Response Acceleration Parameter at Short Period[2], S_s	1.749
Mapped MCE_R Spectral Response Acceleration Parameter at 1-Second Period, S_1	0.593
Site Coefficient (Short Period) F_a	1.0
Site Coefficient (1-Second Period) F_v	1.5
Mapped MCE_R Spectral Response Acceleration Parameter at Short Period, S_{MS}	1.749
Mapped MCE_R Spectral Response Acceleration Parameter at 1-Sec. Period, S_{M1}	0.890
Design Spectral Acceleration Parameter, S_{DS}	1.166
Design Spectral Acceleration Parameter, S_{D1}	0.593
Design Response Spectrum Long-Period Transition Period, T_L	8
Seismic Design Category (When $S_1 \geq 0.75$ Seismic Design Category = E)	D
Additional Parameters for Sites with Site Design Categories D through F	
Peak Ground Acceleration, PGA	0.614
Site Coefficient, F_{PGA}	1.000
Peak Ground Acceleration – geometric mean, PGA_M	0.614
Risk Coefficient at 0.2 s Spectral Response Period, C_{RS}	1.036
Risk Coefficient at 1 s Spectral Response Period, C_{R1}	1.059

BUILDING FOUNDATIONS

The proposed building may be supported by conventional, relatively shallow continuous strip footings along the building perimeter and at interior load bearing walls, with spread footings for columns. All footings should be founded on engineered fill or undisturbed native soils. The footings may be designed using an allowable soil bearing pressure of 3,000 pounds per square foot (psf) for dead plus live loads. The allowable bearing pressure may be increased by one-third when considering the effects of short-term wind or seismic loads. Continuous footings should have a minimum width of 12 inches and should be embedded a minimum of 24 inches below the lowest adjacent exterior finish grade or pad grade for interior column footings. Continuous strip footings should be reinforced with a minimum of two number 5 deformed reinforcing steel bars at the top and two at the bottom to provide structural continuity, to permit spanning of local irregularities in

[2] For Site Class B, 5 percent damped. Adjustments for other Site Classes are made, as needed, within the program.

soil conditions and to aid in reducing the potential for abrupt differential settlement. A Structural Engineer should determine the actual width and reinforcement of the foundations.

Lateral loads may be resisted by friction between the base of the slab and the supporting subgrade, or by passive resistance acting against the vertical faces of the foundations. An allowable friction coefficient of 0.35 between the foundation and supporting subgrade may be used. For passive resistance, an allowable equivalent fluid weight of 250 pounds per cubic foot (pcf) acting against the perimeter of the foundation can be used for design purposes. The passive pressure can be assumed to act starting at the top of the lowest adjacent finish grade in paved areas and at a depth of 1 foot below finish grade in unpaved areas. The passive lateral load resistance value discussed above is only applicable where the concrete for the foundation is placed directly against either undisturbed or properly compacted soils.

We estimate that total post-construction settlement under static building loads will be less than 3/4-inch with differential settlement along perimeter walls estimated to be 1/2-inch in 40 feet. Should the bearing pressures exceed those discussed herein, there may be an impact on the estimated settlement. This settlement estimate is based on the assumption that the building area is properly compacted and that the foundation is designed and constructed in accordance with our recommendations.

We recommend that the footing excavations be observed by the Geotechnical Engineer prior to placement of rebar in the footings. This will allow for confirmation of compliance with minimum width and embedment recommendations, appropriate moisture control and to confirm that the bearing level soils are consistent with those contemplated in our preparation of this report. The soil in the footings should not be permitted to dry out during construction. The foundation excavations may need to be watered regularly during the hot summer months to prevent drying of the exposed soils in the footing excavation. Concrete for footings should be placed against undisturbed engineered fill soils.

CONCRETE FLOOR SLABS

All conventionally reinforced "non-structural" interior concrete floor slabs should be supported by non-expansive fill as discussed above. Where subgrade soils have lost moisture, the subgrade soils should be moisture conditioned through soaking to reestablish a soil moisture content of at least 3 percent above optimum within a few days of concrete placement.

The slabs should be designed for soils with high expansion potential. At a minimum, we recommend reinforcement consisting of No. 4 steel reinforcing bars (rebar) at 18 inches on center each way. General practice is to place the steel reinforcement at mid-height in the slab. Care must be taken during construction to keep the reinforcement from being pushed to the bottom of the slab. The actual required steel reinforcement and placement of the reinforcing steel should be determined by the project Structural Engineer. The minimum recommended steel will not prevent the development of slab cracks but will aid in keeping the construction joints and minor cracks associated with concrete shrinkage relatively tight and in reducing the potential for differential movement between adjacent panels.

Slab control joints should be spaced in accordance with the recommendations presented in the ACI Manual of Concrete Practice. For a 5-inch thick slab a maximum spacing of 12.5 feet each way is recommended. In the event that control or contraction joints are to be constructed by saw cutting of the slabs, saw cuts should be made by soff-cut sawing. Saw cuts for contraction joints are generally made within 4 to 12 hours after the initial hardening of the concrete, as required by atmospheric conditions. The contractor should be responsible for monitoring of the concrete during initial set or hardening and to determine the optimal timing for cutting of the slabs.

The use of low water/cement ratio concrete, water reducing agents, quality aggregates, limiting the amount of fine aggregates in the concrete mix and implementation of continuous curing as soon as the concrete is finished will all aid in reducing concrete shrinkage and cracking.

Moisture Vapor Transmission through Interior Slabs-On-Grade

A vapor retarder should be installed immediately below the concrete in accordance with Section 1907.1 of the 2016 California Building Code. Section 1907.1.1 stipulates that a capillary break should be provided where a vapor barrier is required. Requirements for the capillary break are presented in CalGreen 2013, Section 4.505. Sand should not be placed over the vapor retarder. Guidelines for capillary break installation and for installation of the vapor retarder are provided in ASTM E1745. A standard specification for the vapor retarder material is presented in ASTM E1643. The details of the materials and installation of a vapor retarder and capillary break should be determined by the project designers. A minimum 3-inch section of gravel is suggested for the capillary break.

EXTERIOR CONCRETE FLATWORK

Given the presence of expansive soils at the site, placement of non-expansive fill soils for support of exterior concrete should be considered. This is discussed in detail above. With the exception of slabs subject to vehicular loads, it is our opinion that, from a geotechnical engineering standpoint, exterior concrete flatwork such as on-site sidewalks can be placed directly on the prepared subgrade. The use of aggregate base as support for concrete flatwork should be avoided except in traffic areas where required as part of a structural section or where required for compliance with a City standard. A 6-inch section (minimum section) of Class 2 aggregate base is recommended for support of concrete slabs that will be subjected to vehicular traffic.

Where on-site exterior concrete slabs-on-grade are planned, we generally recommend that exterior slabs-on-grade (i.e. sidewalks) be cast free from adjacent footings or other edge restraint. Using a strip of ½-inch thick asphalt impregnated felt or other commercially available expansion joint material between the slab edges and the adjacent structure may accomplish this. Where there is a concern that a trip hazard could develop at doorways due to differential movement between the exterior slab-on-grade and the adjoining foundation, or where concrete flatwork abuts embedded curbs, consideration may be given to tying the slab to the foundation or curb with reinforcing steel (rebar) dowels. Frequent construction or crack control (contraction) joints should be provided in

all concrete slabs where cracking is objectionable. Deep, scored joints spaced no more than 6 feet apart should be considered to control shrinkage cracking. Scoring of contraction joints should extend slightly deeper than one-quarter the slab thickness to be effective. Steel reinforcement (rebar as opposed to wire mesh) should also be considered to reduce cracking and the potential for tripping hazards to develop between adjacent concrete panels due to expansive soil movement and/or tree roots. Minimum recommended reinforcement consisting of No. 3 steel reinforcing bars at 18 inches on center each way is suggested. The minimum recommended steel will not prevent the development of slab cracks but will aid in keeping the construction joints relatively tight and in reducing the potential for differential movement between adjacent panels.

Subgrade soils should be properly moisture conditioned during grading operations and maintained until covered by concrete or restored prior to concrete placement if necessary. The moisture content of the subgrade soils should be checked several days prior to the placement of concrete or baserock where required. The subgrade should be wetted or presoaked to at least 5 percent over optimum moisture content prior to placing concrete. Even with proper site preparation there will be some effects of soil moisture change on concrete flatwork.

The above recommendations, including soil moisture conditioning, contraction joints and steel reinforcement are intended to help reduce the potential for distress in concrete flatwork, but may not totally eliminate distress.

MODULAR CONTAINER PADS

The modular containers that will be placed on the site as self storage units will be steel cargo containers (Conex boxes). These types of containers are commonly supported by compacted gravel fill, asphalt concrete and portland cement concrete pavements or pavers. Factors that influence the selection of the material that will be used as a support surface include but are not necessarily limited to: cost, type of facility, frequency and type of vehicle traffic, and effects of surface water infiltration into the site.

We understand that asphalt concrete paved roads are planned for all-weather access to the self-storage units. Recommendations for asphalt concrete pavements are provide below. With the future roadways expected to have relatively light pavement sections and with those sections constructed over moderate to high plasticity clay subgrade soils, surface water should not be allowed to infiltrate the pavement area or areas adjacent to the pavement that would allow water to move through the pavement. The introduction of water into the pavement where the subgrade soil is clay typically results in softening of the subgrade leading to premature pavement failure. With the flat nature of the site and the proposed installation of rows of containers with roadways in between, we recommend that consideration be given to paving the entire site followed by placement of the containers. This would provide a relatively impervious surface over the site. The continuous surface will reduce the potential for surface water to infiltrate the pavement areas causing pavement distress. It will also reduce the potential for shrinkage and swelling of the underlying clay soils associated with subgrade soil wetting and drying with seasonal changes, which can also cause significant pavement distress.

PAVEMENT RECOMMENDATIONS

Flexible Asphalt Concrete Pavement

The following are recommended structural pavement sections. With the presence of moderate to high plasticity clay soils at the site, we have developed pavement sections based upon an R-value of 5 for the subgrade soil. The Caltrans design method for flexible pavement design was used to develop the pavement sections presented below. The Traffic Indexes (TI) are representative of a range of load frequency and intensity. Selection of the TI should be made by the project Civil Engineer in consultation with Pacific Property Advisors, Inc.

Flexible Pavement Sections Subgrade R-Value = 5			
Traffic Index	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)	Total Section Thickness (inches)
4.5	2.5	9.5	12.0
	3.0	8.0	11.0
5.0	3.0	10.0	13.0
6.0	3.5	12.5	16.0

ADDITIONAL GEOTECHNICAL ENGINEERING SERVICES

Prior to construction, our firm should be provided the opportunity to review the grading and foundation plans and specifications to determine if the recommendations of this report have been implemented in those documents. We would appreciate the opportunity to meet with the contractors prior to the start of site grading, underground utility installation and pavement construction to discuss the procedures and methods of construction. This can facilitate the performance of the construction operation and minimize possible misunderstanding and construction delays.

To a degree, the performance of the proposed project is dependent on the procedures and quality of the construction. Therefore, we should provide observations of the contractor's procedures, the exposed soil conditions, and field and laboratory testing during site preparation and grading, placement and compaction of fill, underground utility installation, and foundation and pavement construction. These observations will allow us to check the contractor's work for conformance with the intent of our recommendations and to observe unanticipated soil conditions that could require modification of our recommendations.

LIMITATIONS

The conclusions and recommendations presented in this report are based upon the project information provided to us by Pacific Property Advisors, Inc., information obtained from published

geologic reports, subsurface conditions encountered at the boring locations, the results of geotechnical laboratory testing and professional judgment. The information provided herein was developed for use by Pacific Property Advisors, Inc. for the project as described herein. In the event that changes in the nature, design or location of the proposed project are planned, or revisions are made to the Building Code that are related to Geotechnical Engineering, the conclusions and preliminary recommendations in this report shall be considered invalid, unless the changes are reviewed and the conclusions and recommendations are confirmed or modified in writing by BSA. In light of this, there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that two years from the date of this report be considered a reasonable time for the usefulness of this report.

Site conditions described in this report are those existing at the times of our field explorations and are not necessarily representative of such conditions at other locations or times. The boring logs show subsurface conditions at the locations and on the dates indicated. It is not warranted that they are representative of such conditions elsewhere or at other times. The locations of the field explorations were estimated by pacing from existing surface features at the site; they should be considered approximate only. This geotechnical investigation has been conducted in accordance with professional Geotechnical Engineering standards current at the time of service and in the geographic area of the site; no other warranty, expressed or implied, is offered or made.

We trust that this report provides the information that you require at this time. If you have any questions, please contact the undersigned at (925) 484-0220.

Respectfully submitted,

BERLOGAR STEVENS & ASSOCIATES

DRAFT

Gregory J. Ruf, P.E., G.E.
Principal Engineer

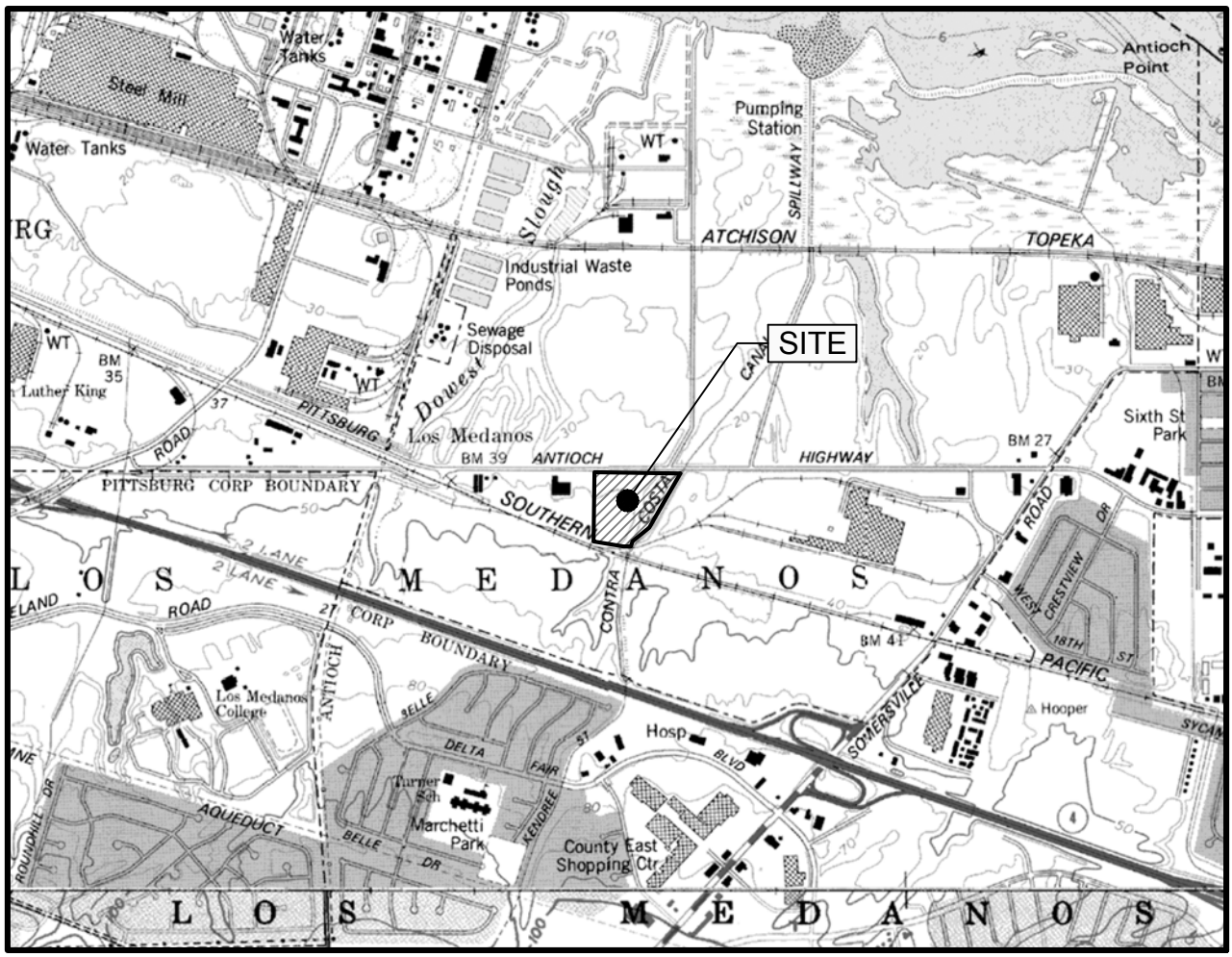
GJR:as

Attachments:
- Plate 1 – Vicinity Map
- Plate 2 – Site Plan
- Appendix A – 2006 Boring Logs
- Appendix B – Geotechnical Laboratory Test Results
- Appendix C – CERCO Analytical Report

Copies: Addressee (e-mail)

PLATES

JOB NUMBER: 3966.200 DATE: 6-11-18 BY: CC



VICINITY MAP

PITTSBURG SELF STORAGE

PITTSBURG ANTIOCH HIGHWAY

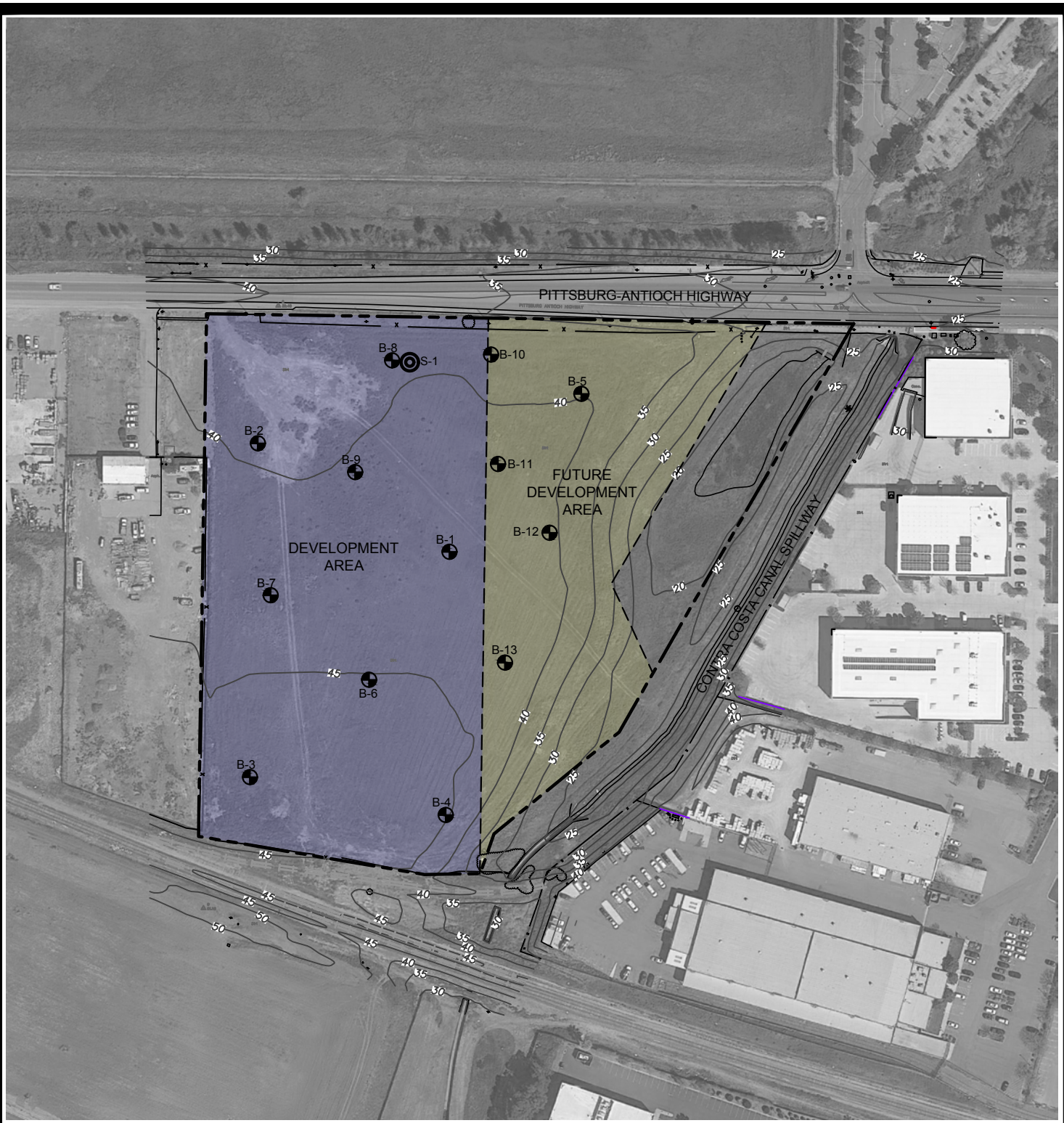
PITTSBURG, CALIFORNIA

FOR

PACIFIC PROPERTY ADVISORS, INC.

BASE: PORTION OF U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE,
ANTIOCH NORTH, CALIFORNIA, PHOTOREVISED 1983, AT A SCALE OF 1:24,000.

PLATE 1



DRAWN BY: CC

DATE: 6-11-18

JOB NUMBER: 3966.200

N

0 200

1"=200'

EXPLANATION

PROPERTY LINE

S-1 SOIL SAMPLE LOCATION (THIS STUDY)

B-13 BORING LOCATION (BGC, 2006)

SITE PLAN

PITTSBURG SELF STORAGE

PITTSBURG ANTIOCH HIGHWAY

PITTSBURG, CALIFORNIA

FOR

PACIFIC PROPERTY ADVISORS, INC.

Berlogar Stevens & Associates

SOIL ENGINEERS * ENGINEERING GEOLOGISTS

BASE: TOPO BASE, PROVIDED BY RBF VIA EMAIL, RECEIVED 2-21-06

PLATE 2

APPENDIX A

2006 Boring Logs

BORING LOG B-1

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-3-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 43 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSIFICATION	DESCRIPTION
27	-	-		CL	SILTY CLAY, dark gray-brown, moist, soft, trace fine-grained sand, rootlets
50/2"	17.7	100	5	CL/ SC/ SP	ALTERNATING SANDY CLAY/CLAYEY SAND AND SAND, moist, hard to very dense, fine-grained sand
54	-	-	10		below 9 feet, more abundant carbonate veins
50	-	-	15	CL	SANDY CLAY, yellow-brown, moist, hard, fine-grained sand, trace carbonate
59	-	-	20		

PLATE 3

BORING LOG B-1

JOB NUMBER: 2886.100 **SHEET:** 2 **OF:** 3

JOB NAME: Dow Parcel **DEPTH:** 20 feet **TO** 40 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
				CL	SANDY CLAY, yellow-brown, moist, hard, fine-grained sand, trace carbonate
				SC	CLAYEY SAND, yellow-brown, moist, very dense, fine-grained sand, carbonate veins
40/5"	14.5	114	25		
				CL	SILTY CLAY, yellow-brown, moist, hard, organic black speckling, trace carbonate
35	-	-	30		
			35		
45	-	-			
			40	CL	SANDY CLAY, yellow-brown with black spots, moist, hard, organic black spots, fine-grained sand

PLATE 4

BORING LOG B-1

JOB NUMBER: 2886.100 **SHEET:** 3 **OF:** 3

JOB NAME: Dow Parcel **DEPTH:** 40 feet **TO** 50 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
39	-	-	45 50	CL	SANDY CLAY, yellow-brown with black spots, moist, hard, organic black spots, fine-grained sand
			55 60		Boring terminated at 50 feet Groundwater encountered at 35 feet

PLATE 5

BORING LOG B-2

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-6-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 39 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
26	29.0	89		CL	SILTY CLAY, dark gray-brown, moist, soft, trace fine-grained sand below 1 foot, very stiff
				CL	SANDY CLAY, yellow-brown, moist, very stiff, fine-grained sand
24	13.0	91	5		
50/6"	-	-			
			10		
				SC	CLAYEY SAND, yellow-brown, moist, very dense, trace carbonate
50/6"	-	-			
			15		
50/6"	-	-			
			20		

PLATE 6

BORING LOG B-2

JOB NUMBER: 2886.100 **SHEET:** 2 **OF:** 2

JOB NAME: Dow Parcel **DEPTH:** 20 feet **TO** 25 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
71	-	-	25	SC	CLAYEY SAND, yellow-brown, moist, very dense, trace carbonate
					Boring terminated at 25 feet No groundwater encountered

30

35

40

PLATE 7

BORING LOG B-3

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-6-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 47 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSIFICATION	DESCRIPTION
20	21.7	101		CL	SILTY CLAY, dark gray-brown, moist, very stiff, trace fine-grained sand
				CL	SILTY CLAY with SAND, gray-brown, moist, hard, fine-grained sand
38	20.6	103	5		
				SC	CLAYEY SAND, yellow-brown, moist, very dense, fine-to medium-grained sand, trace lithic angular fragments up to 1/2 inch
81	17.1	107	10		
				CL	SANDY CLAY, yellow-brown, moist, hard, carbonate nodules, fine-grained sand
35	-	-	15		
				SC	CLAYEY SAND, yellow-brown, moist, very dense, fine-grained sand
58	-	-	20		

BORING LOG B-3

JOB NUMBER: 2886.100 **SHEET:** 2 **OF:** 2

JOB NAME: Dow Parcel **DEPTH:** 20 feet **TO** 25 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
				SC	CLAYEY SAND, yellow-brown, moist, very dense, fine-grained sand
50/6"	-	-	25	CL	SILTY CLAY with SAND, yellow-brown, moist, hard, fine-grained sand, trace carbonate
					Boring terminated at 25 feet No groundwater encountered

30

35

40

BORING LOG B-4

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-6-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 45 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
16	19.6	99		CH	SILTY CLAY, dark gray-brown, moist, stiff to very stiff, trace fine-grained sand, trace carbonate
				CL	SANDY CLAY, yellow-brown, moist, hard, fine-grained sand
62	24.2	97	5		
50	16.4	99		ML	SANDY SILT with CLAY, yellow-brown, moist, hard, carbonate veins
			10		
				CL	SANDY CLAY, yellow-brown, moist, hard, fine-grained sand, carbonate nodules
53	-	-	15		
40	-	-	20		

BORING LOG B-4

JOB NUMBER: 2886.100 **SHEET:** 2 **OF:** 2

JOB NAME: Dow Parcel **DEPTH:** 20 feet **TO** 30 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
50	-	-	25	CL	SANDY CLAY, yellow-brown, moist, hard, fine-grained sand, carbonate nodules
34	-	-	30	CL	SILTY CLAY, yellow-brown, moist, hard, trace to some fine-grained sand
			35		Boring terminated at 30 feet No groundwater encountered
			40		

BORING LOG B-5

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-6-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 40 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
				CH	SILTY CLAY, dark gray-brown, moist, medium stiff to stiff
11	20.2	97			
				CL	SANDY CLAY, yellow-brown, moist, hard, fine-grained sand
				ML	SANDY SILT, yellow-brown, moist, hard, carbonate
50/6"	18.0	108	5		
50/6"	13.9	106			below 9 feet, more carbonate
			10	SC	CLAYEY SAND, yellow-brown, moist, very dense, fine-to medium-grained sand, lithic angular fragments up to 1/2 inch
				ML	SANDY SILT, yellow-brown, moist, hard, fine-grained sand, carbonate nodules
49	-	-			
			15	CL	SANDY CLAY, yellow-brown, moist, hard, fine-grained sand, carbonate nodules
				CL	SILTY CLAY, yellow-brown, moist, hard, fine-grained sand, carbonate nodules
47	-	-	20		

BORING LOG B-5

JOB NUMBER: 2886.100 **SHEET:** 2 **OF:** 2

JOB NAME: Dow Parcel **DEPTH:** 20 feet **TO** 25 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
26	-	-	25	CL	SILTY CLAY, yellow-brown, moist, hard, fine-grained sand, carbonate nodules below 24 feet, very stiff to hard
			30 35 40		Boring terminated at 25 feet No groundwater encountered

BORING LOG B-6

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-6-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 45 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
				CH	SILTY CLAY, dark gray-brown, moist, stiff, trace fine-grained sand
				CL	SANDY CLAY, yellow-brown, moist, hard, fine-grained sand
34	18.4	108	5		
				ML/ SM/ CL	SANDY SILT/SILTY SAND/SANDY CLAY (alternating thin layers), yellow-brown, moist, very dense to hard, fine-grained sand
59	-	-	10		
				SW	GRAVELLY SAND, yellow-brown, moist, very dense, subrounded gravel up to 1 inch, well graded sand
63	-	-	15		
72	-	-	20		

BORING LOG B-6

JOB NUMBER: 2887.100 **SHEET:** 2 **OF:** 2

JOB NAME: Dow Parcel **DEPTH:** 20 feet **TO** 22-1/2 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
46	-	-		SW	GRAVELLY SAND, yellow-brown, moist, very dense, subrounded gravel up to 1 inch, well graded sand
				CL	SANDY CLAY, yellow-brown, moist,hard, carbonate nodules
					Boring terminated at 22-1/2 feet No groundwater encountered
			25		
			30		
			35		
			40		

PLATE 15

BORING LOG B-7

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-6-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 43-1/2 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
				CH	SILTY CLAY, dark gray-brown, moist, stiff, trace fine-grained sand
				CL	SANDY CLAY, yellow-brown, moist, hard, fine-grained sand
51	-	-	5		
			10		
			15		
49	-	-	20		Boring terminated at 20 feet No groundwater encountered

PLATE 16

BORING LOG B-8

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-7-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 39-1/2 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
20	25.3	91		CL	SILTY CLAY, dark gray-brown to tan-brown, moist, stiff, fine-grained sand
30	22.2	97	5		below 4 feet, yellow-brown, very stiff
				ML	CLAYEY SILT/SANDY SILT, yellow-brown, moist, hard, fine-grained sand, trace caliche
82/6"	16.1	103	10	SC	CLAYEY SAND, yellow-brown, moist, very dense, fine-grained sand
				SC/SL	CLAYEY SAND/SANDY CLAY, yellow-brown, moist, dense, hard, fine-grained sand
37	-	-	15		
				SM	SILTY SAND, yellow-brown, moist, dense, fine-grained sand
31	-	-	20		

BORING LOG B-8

JOB NUMBER: 2886.100 **SHEET:** 2 **OF:** 2

JOB NAME: Dow Parcel **DEPTH:** 20 feet **TO** 25-1/2 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
				SM	SILTY SAND, yellow-brown, moist, dense, fine-grained sand
				ML	SANDY SILT, yellow-brown, moist, dense, fine-grained sand
				ML	CLAYEY SILT, yellow-brown, moist, hard
38	-	-	25	ML/SC	CLAYEY SILT/SILTY CLAY, brown, moist, hard
			30		Boring terminated at 25-1/2 feet No groundwater encountered
			35		
			40		

BORING LOG B-9

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-7-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 41 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
30	16.8	110	0	CL	SILTY CLAY TO SANDY CLAY, dark gray to dark gray-brown, moist, stiff to very stiff, fine-grained sand, trace rootlets
			5	CL/ML	SANDY CLAY TO CLAYEY SILT, yellow-brown, moist, very stiff to hard, fine-grained sand
36	-	-		ML	CLAYEY SILT/SANDY SILT, yellow-brown, moist, hard, dense, fine-grained sand
			10		
				ML	CLAYEY SILT, yellow-brown, moist, hard, some fine-grained sand, trace carbonate
			15		
					SILTY SAND, yellow-brown, moist, very dense, fine-grained sand
50	-	-		SM	CLAYEY SILT/SILTY CLAY, yellow-brown, moist, hard, trace carbonate veins
			20	ML/CL	Boring terminated at 20-1/2 feet No groundwater encountered

BORING LOG B-10

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-7-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 39-1/2 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
				CL	SANDY CLAY, dark gray-brown, moist, stiff to very stiff, fine-grained sand, trace rootlets
31	21.7	100			below 3-1/2 feet, brown to dark brown
			5		
				ML	CLAYEY SILT/SANDY SILT, yellow-brown, moist, hard to very dense, fine-grained sand, trace carbonate veins
77	-	-			
			10		
			15		
				SM	SILTY SAND, yellow-brown, moist, dense, fine-grained sand
31	-	-		ML	CLAYEY SILT, yellow-brown, moist, very stiff
			20		Boring terminated at 20 feet No groundwater encountered

BORING LOG B-11

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-7-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 41 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
44	15.8	110	5	CL	SILTY CLAY TO SANDY CLAY, dark gray-brown to brown, moist, stiff to very stiff, fine-grained sand, trace fine gravel, trace rootlets
				ML/CL	CLAYEY SILT/SILTY CLAY, yellow-brown, moist, very stiff to hard, some fine-grained sand
30	-	-	10	ML/SM	SANDY SILT/SILTY SAND, yellow-brown, moist, dense, fine-grained sand, trace clay, trace coarse-grained sand
59	-	-	15		
			20		Boring terminated at 20 feet No groundwater encountered

PLATE 21

BORING LOG B-12

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-7-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 41 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
				CL	SILTY CLAY, dark gray-brown to brown, moist, stiff, trace fine-grained sand, rootlets
18	19.7	98			
				CL/ML	SILTY CLAY/CLAYEY SILT, yellow-brown, moist, hard
83/6"	-	-	5		
					below 7 feet, some fine-grained sand
50/6"	-	-			
			10		
					below 12 feet, brown
33	-	-			
			15		
					below 18 feet, yellow-brown
46	-	-			
			20		
				CL	SILTY CLAY, yellow-brown, moist, hard, trace fine-grained sand

BORING LOG B-12

JOB NUMBER: 2886.100 **SHEET:** 2 **OF:** 2

JOB NAME: Dow Parcel **DEPTH:** 20 feet **TO** 25 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
61	-	-	25	CL	SILTY CLAY, yellow-brown, moist, hard, trace fine-grained sand
			30		Boring terminated at 25 feet No groundwater encountered
			35		
			40		

PLATE 23

BORING LOG B-13

JOB NUMBER: 2886.100 **DATE DRILLED:** 2-7-06

JOB NAME: Dow Parcel **SURFACE ELEVATION:** 43 feet

DRILL RIG: Hollow stem Auger **DATUM:** Mean Sea Level

SAMPLER TYPE:	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
■ 2.5 inch I.D. Split Barrel	140	30
☑ Standard Penetration Test	140	30

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
				CL	SILTY CLAY, dark gray-brown to brown, moist, stiff to very stiff
32	18.5	101		CL	SANDY CLAY with SAND SEAM, brown, moist, very stiff, fine-grained sand
50/6"	18.9	106	5	ML/CL	SILTY CLAY/CLAYEY SILT, yellow-brown moist, hard
				ML/SM	SANDY SILT/SILTY SAND, yellow-brown, dense, fine-grained sand
74	9.3	95	10		
				CL/SC	CLAYEY SAND/SANDY CLAY, yellow-brown, moist, hard, dense, fine-grained sand
63	13.3	107	15		
				CL/ML	CLAYEY SILT/SILTY CLAY, yellow-brown, moist,hard, trace carbonate veins
50/6"	18.1	103	20		

BORING LOG B-13

JOB NUMBER: 2886.100 **SHEET:** 2 **OF:** 2

JOB NAME: Dow Parcel **DEPTH:** 20 feet **TO** 25-1/2 feet

NOTES:

BLOWS PER FT.	MOISTURE CONTENT %	DRY UNIT WEIGHT p.c.f.	DEPTH IN FEET	USCS CLASSI-FICATION	DESCRIPTION
55	-	-	25	CL/ML	CLAYEY SILT/SILTY CLAY, yellow-brown, moist,hard, trace carbonate veins
				ML/SM	SANDY SILT/SILTY SAND, yellow-brown, moist, very dense, fine-grained sand, some clay
			30		Boring terminated at 25-1/2 feet No groundwater encountered
			35		
			40		

APPENDIX B

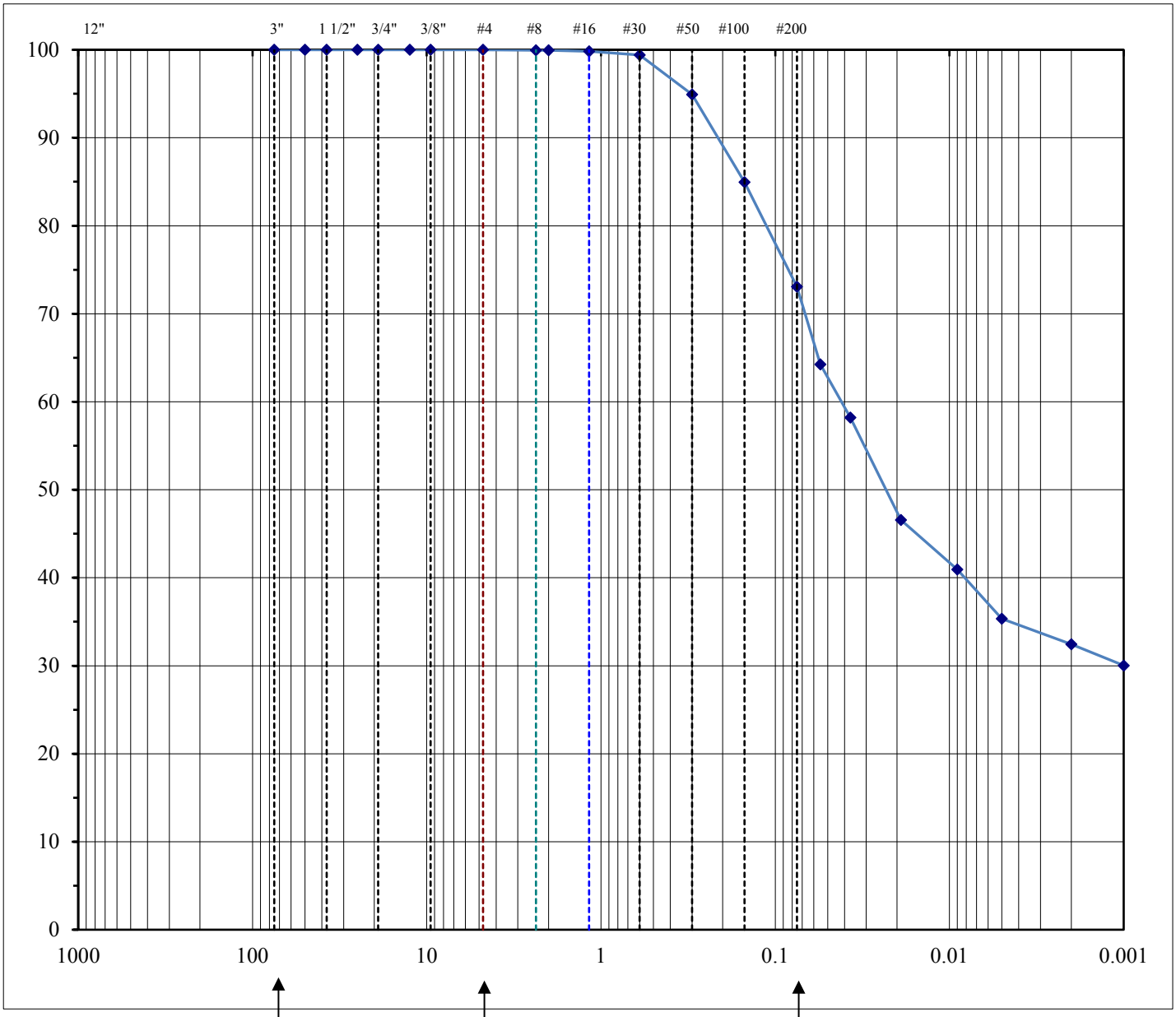
Geotechnical Laboratory Test Results

Gradation Test Data ASTM D 422

Project Name: Pittsburg Self Storage	**Project No: 3966.200**
Comments:	**Date:** 5/29/2018
	Invoice Number: 16140

Tested By: gs

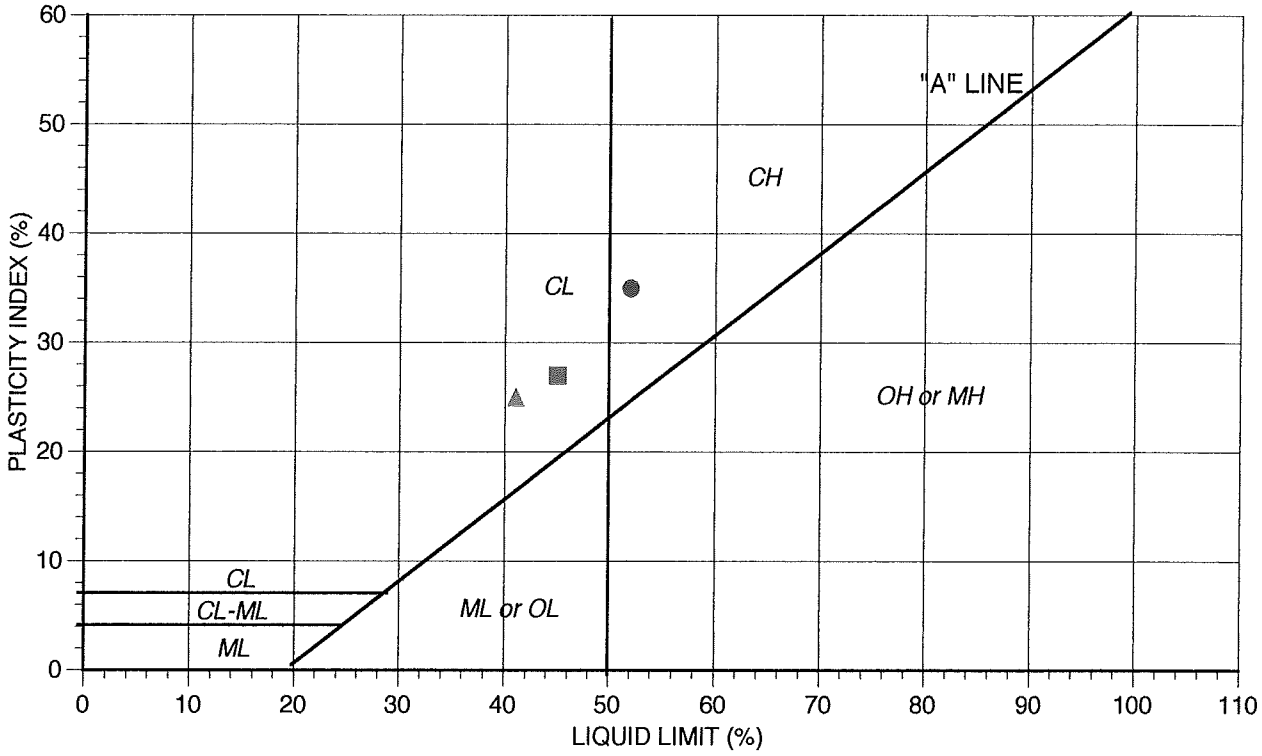
Reported By: G. Suckow



COBBLES	GRAVEL		SAND			SILT/CLAY
	coarse	fine	coarse	medium	fine	

Symbol	Sample ID	Description	ASTM D4318 Plasticity Index:
	Bulk Sample May 2018	CL Yellow Brown Sandy Clay, silty	19

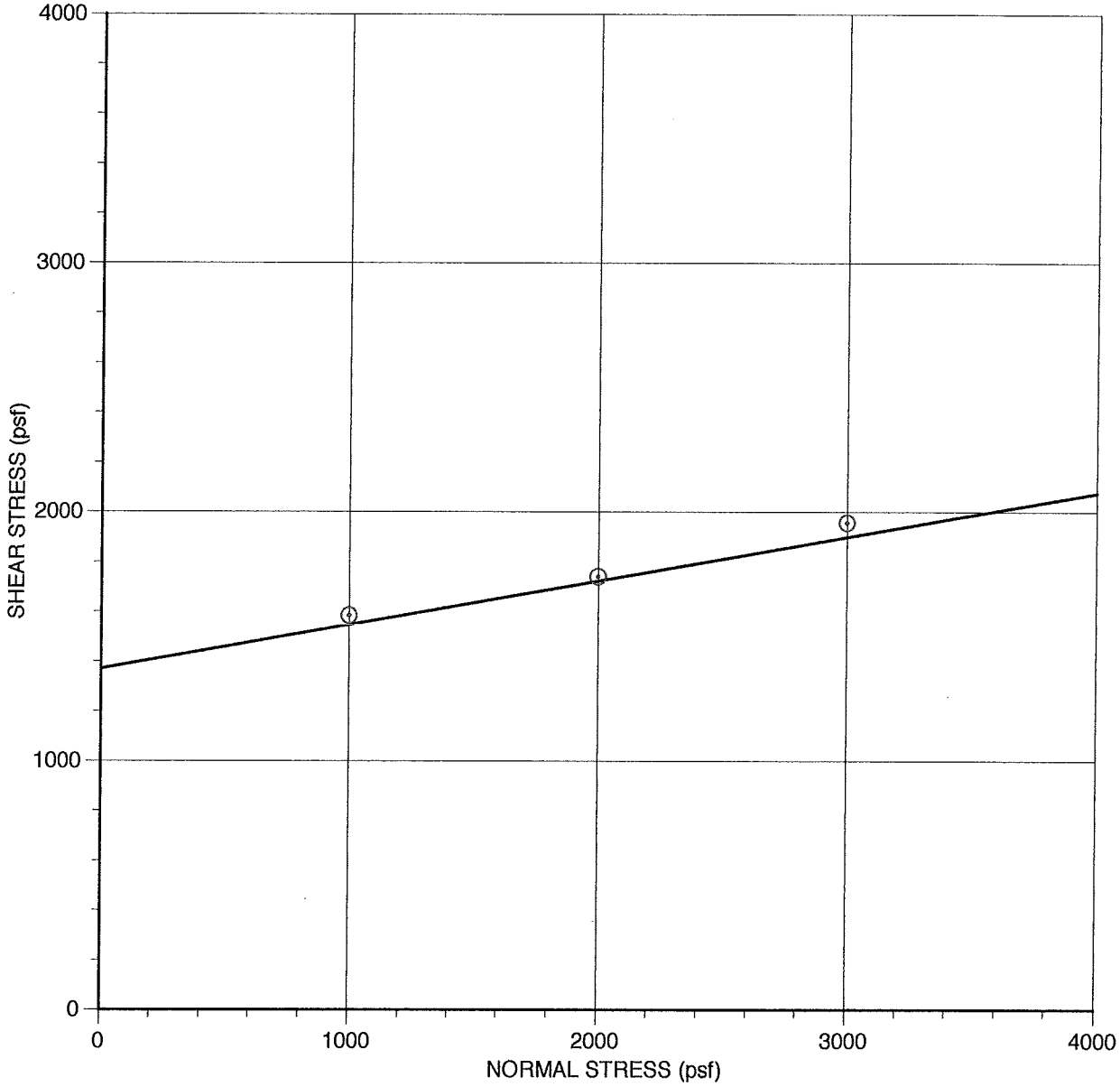
JOB NUMBER: 2886.100 DATE: 3-2-06 BY: CC



SYMBOLS	LOCATION	LIQUID LIMIT	PLASTICITY INDEX	USCS CLASSIFICATION
●	B-4 at 1 foot	52	35	C H
■	B-8 at 1 foot	45	27	C L
▲	B-12 at 1 foot	41	25	C L

ATTERBERG LIMITS TEST DATA

JOB NUMBER: 2886.100 DATE: 3-2-06 BY: CC



LOCATION: B-4 at 2 feet

SAMPLE: SILTY CLAY WITH SAND, dark yellow-brown

TEST TYPE: Consolidated Undrained

RATE OF SHEAR (in/min): 0.005880

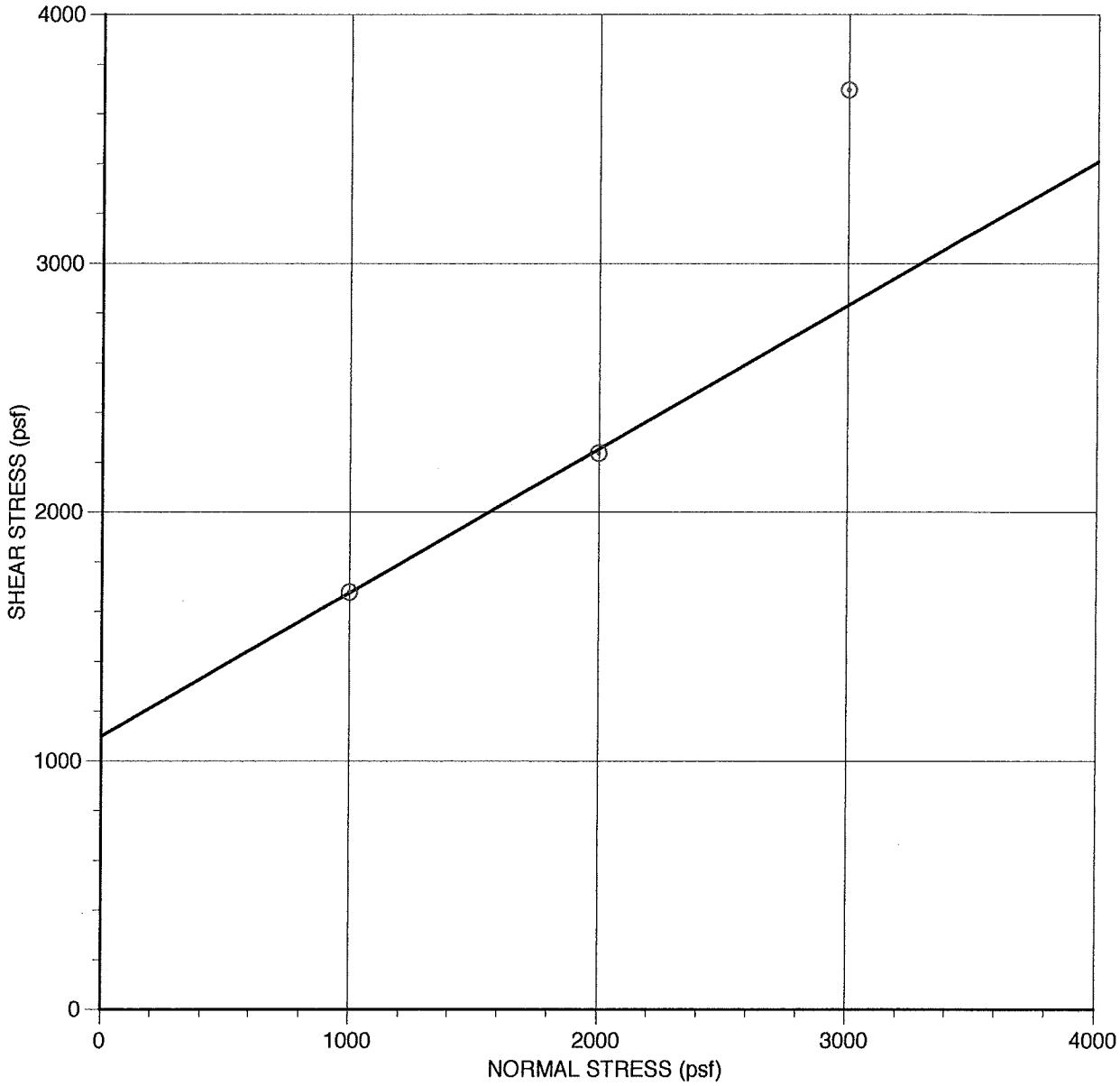
FRICTION ANGLE: 10°

COHESION: 1370 psf

SPECIMEN	A	B	C
DRY DENSITY (pcf)	104.6	99.4	99.1
INITIAL WATER CONTENT (%)	16.6	22.1	19.6
FINAL WATER CONTENT (%)	20.3	24.5	21.4
NORMAL STRESS (psf)	1000	2000	3000
MAXIMUM SHEAR (psf)	1584	1740	1957

DIRECT SHEAR TEST

JOB NUMBER: 2886.100 DATE: 3-2-06 BY: CC



LOCATION: B-5 at 5 feet

SAMPLE: SILTY CLAY, yellow-brown

TEST TYPE: Consolidated Undrained

RATE OF SHEAR (in/min): 0.005880

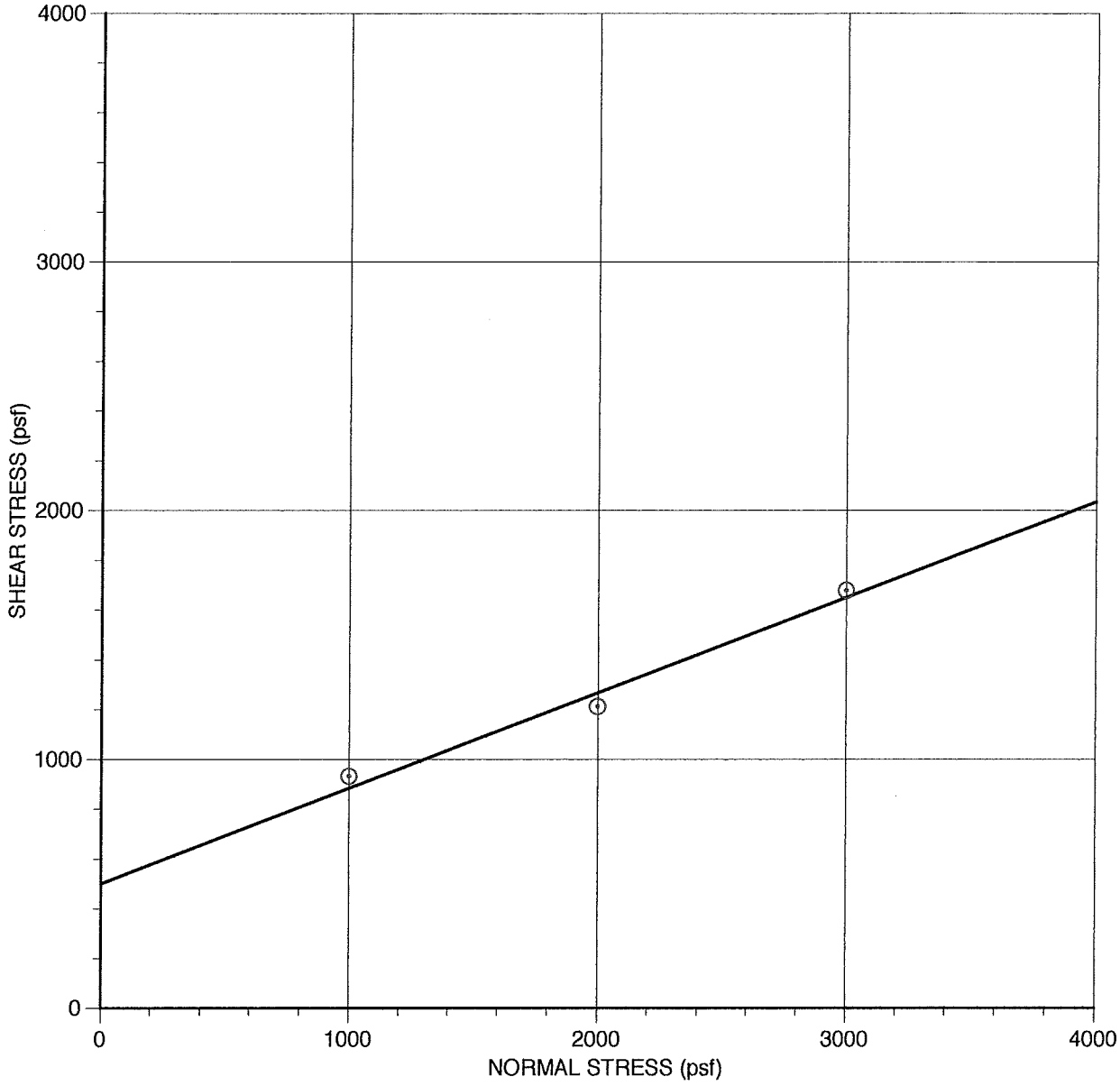
FRICTION ANGLE: 30°

COHESION: 1100 psf

SPECIMEN	A	B	C
DRY DENSITY (pcf)	109.3	100.0	108.2
INITIAL WATER CONTENT (%)	17.7	17.3	18.0
FINAL WATER CONTENT (%)	21.7	24.0	20.9
NORMAL STRESS (psf)	1000	2000	3000
MAXIMUM SHEAR (psf)	1678	2237	3697

DIRECT SHEAR TEST

JOB NUMBER: 2886.100 DATE: 3-2-06 BY: CC



LOCATION: B-8 at 1 foot

SAMPLE: SILTY CLAY, gray-brown

TEST TYPE: Consolidated Undrained

RATE OF SHEAR (in/min): 0.005880

FRICTION ANGLE: 21°

COHESION: 500 psf

SPECIMEN	A	B	C
DRY DENSITY (pcf)	92.8	90.7	88.8
INITIAL WATER CONTENT (%)	24.3	25.3	22.8
FINAL WATER CONTENT (%)	27.3	28.2	24.9
NORMAL STRESS (psf)	1000	2000	3000
MAXIMUM SHEAR (psf)	932	1212	1678

DIRECT SHEAR TEST

APPENDIX C

CERCO Analytical Report

California State Certified Laboratory No. 2153

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

6 June 2018

REVISED
Job No. 1805194
Cust. No. 10598

Mr. Greg Ruf
Berlogar Stevens & Associates
5587 Sunol Blvd.
Pleasanton, CA 94566

Subject: Project No.: 3966.200
Project Name: Pittsburg Self Storage
Corrosivity Analysis – ASTM Test Methods with Brief Evaluation

Dear Mr. Ruf:

Pursuant to your request, CERCO Analytical has analyzed the soil sample submitted on May 25, 2018. Based on the analytical results, this brief corrosivity evaluation is enclosed for your consideration.

Based upon the 100% saturated resistivity measurement, this sample is classified as "moderately corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentration reflects none detected with a reporting limit of 15 mg/kg.

The sulfate ion concentration reflects none detected with a reporting limit of 15 mg/kg.

The sulfide ion concentration reflects none detected with a detection limit of 50 mg/kg.

The pH of the soil is 5.97, which does present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures. Any soils with a pH of <6.0 is considered to be corrosive to buried iron, steel, mortar-coated steel and reinforced concrete structures. Therefore, corrosion prevention measures need to be considered for structures to be placed in this acidic soil.

The redox potential is 400-mV, which is indicative of potentially "slightly corrosive" soils resulting from anaerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc. at (925) 927-6630.*

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Client:	Berlogar Stevens & Associates
Client's Project No.:	3966.200
Client's Project Name:	Pittsburg Self Storage
Date Sampled:	22-May-18
Date Received:	25-May-18
Matrix:	Soil
Authorization:	Signed Chain of Custody

REVISED
Date of Report: 6-Jun-2018

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Resistivity (As Received) (ohms-cm)	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
1805194-001	Bulk #01	400	5.97	32,000	2,900	N.D.	N.D.	N.D.

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	10	-	50	15	15
Date Analyzed:	4-Jun-2018	4-Jun-2018	4-Jun-2018	4-Jun-2018	1-Jun-2018	4-Jun-2018	4-Jun-2018

* Results Reported on "As Received" Basis

N.D. - None Detected

Cheryl McMillen
Laboratory Director

Quality Control Summary - All laboratory quality control parameters were found to be within established limits

Appendix PLN

Project Site Plans

PITTSBURG RV/BOAT STORAGE

3468 PITTSBURG/ ANTIOCH HIGHWAY

PITTSBURG, CA

PROJECT DIRECTORY

APPLICANT

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23 Railroad Ave, Ste 164
Danville, CA 94526
Phone: (925) 314-3849
Cell: (925) 984-5683
Email: chris@pacificprop.net

ARCHITECT

FCGA Architecture
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Danville, CA 94526
Contact: Mathew Mead
Phone: (925) 678-2038
Cell: (480) 287-0256
Email: matt@fcgainc.com

LANDSCAPE ARCHITECT

Great Valley Design Inc.
1219 Spruce Lane
Davis, CA 95616
Contact: Scott Volmer
Phone: (530) 231-5890
Email: svolmer@grtvalley.com

CIVIL ENGINEER

Robert A. Karen & Associates, Inc
707 Beck Ave,
Fairfiled, CA 94533
Contact: Tony Perfetto
Phone: (707) 435-9988
Email: tperfetto@rakengineers.com

PHOTOMETRICS

Dialectic Engineering
310 W. 20th St. Suite 200
Kansas City, MO 64108
Contact: Travis Butler
Phone: 816-997-9578
Email: travis.butler@dialecticeng.com

PROJECT DISCRIPTION

APROXIMATELY 12.5ac/ 220-STALL
RV/BOAT STORAGE FACILITY &
MANAGERS OFFICE

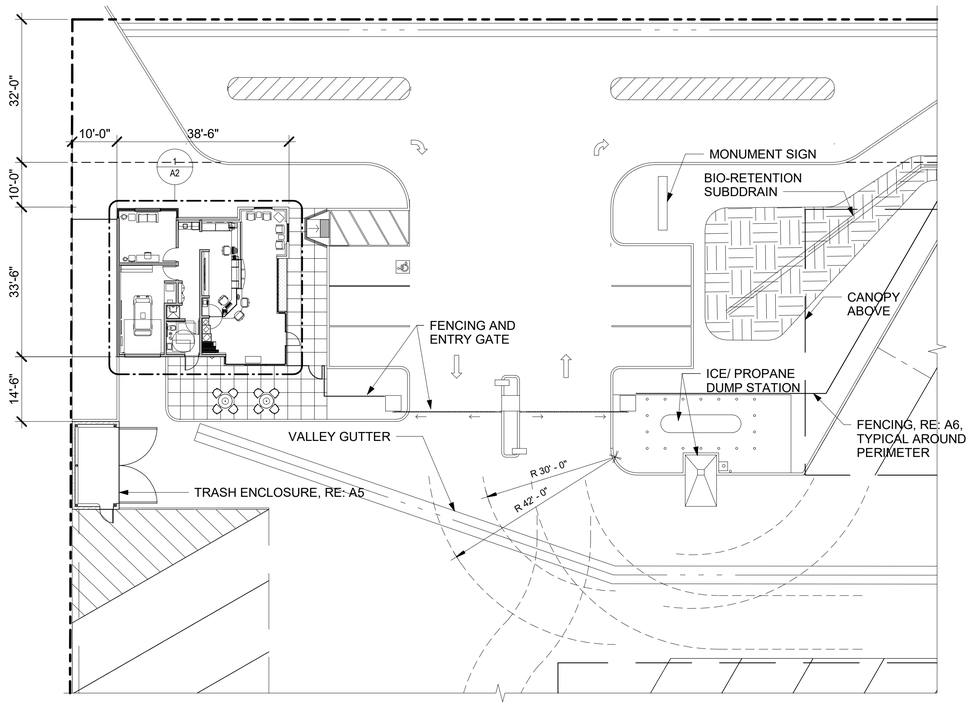
TABLE OF CONTENTS

FCGA architecture

COVER SHEET

A0

07.30.2021



2 ENLARGED ENTRANCE PLAN
1/16" = 1'-0"

PROJECT DATA:

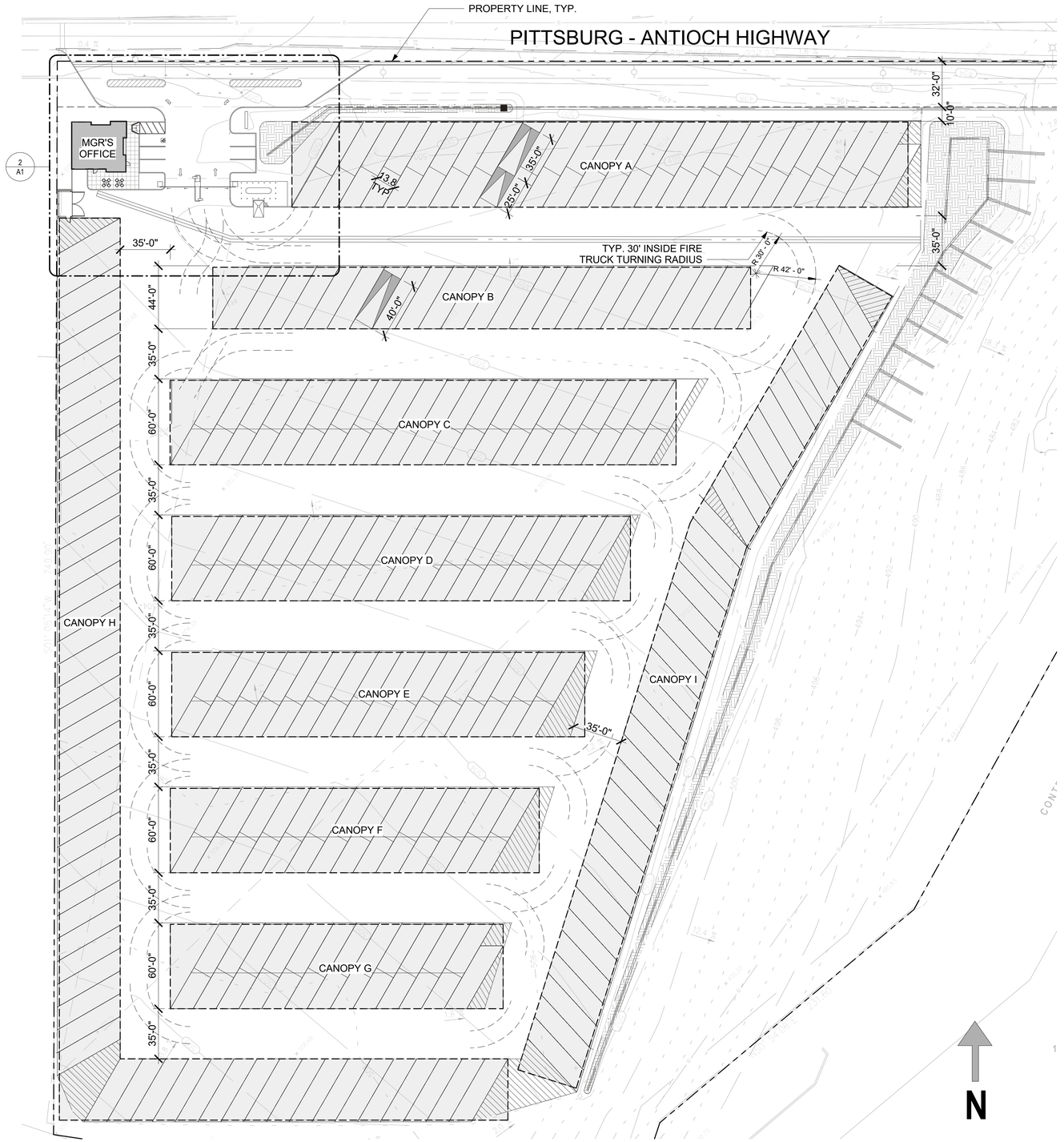
SITE AREA: 12.50 AC OR 544,848 SF
OFFICE BUILDING AREA: 1,243 SF
 # OF RV/BOAT STALLS: 220 (SEE NOTE 1)
PARKING SPACES: 6 TOTAL
- 1 VAN ACCESSIBLE STALL
- 5 STANDARD PARKING STALLS

NOTE 1: NUMBER OF RV/BOAT STALLS IS SUBJECT TO CHANGE PER STORAGE OPERATIONS REQUIREMENTS

SOLAR PANEL CANOPY

SOLAR PANEL	
CANOPY	AREA
A	25,825 SF
B	16,158 SF
C	20,857 SF
D	18,908 SF
E	17,028 SF
F	15,206 SF
G	13,721 SF
H	38,381 SF
I	25,836 SF
	191,920 SF

PARKING INFORMATION		
CANOPY	STALL SIZE	COUNT
A	44' x 13.8' - 60 DEG	1
A	60' x 13.8' - 60 DEG	25
B	44' x 13.8' - 60 DEG	23
C	60' x 13.8' - 60 DEG	21
D	60' x 13.8' - 60 DEG	18
E	60' x 13.8' - 60 DEG	16
F	60' x 13.8' - 60 DEG	14
G	44' x 13.8' - 60 DEG	1
G	60' x 13.8' - 60 DEG	12
H	44' x 13.8' - 60 DEG	53
I	44' x 13.8' - 60 DEG	36
		220



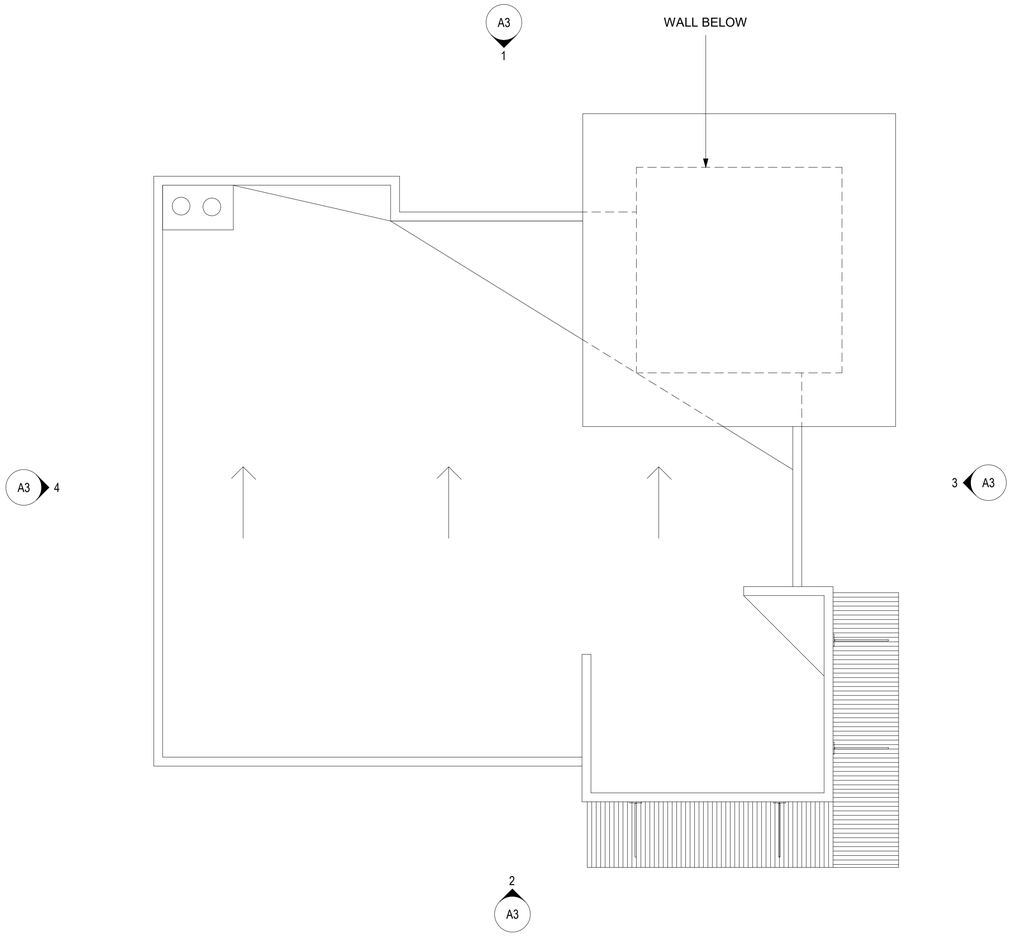
1 SITE PLAN
1" = 40'-0"

PITTSBURG RV/BOAT STORAGE
3468 PITTSBURG/ ANTIOCH HIGHWAY
PITTSBURG, CA

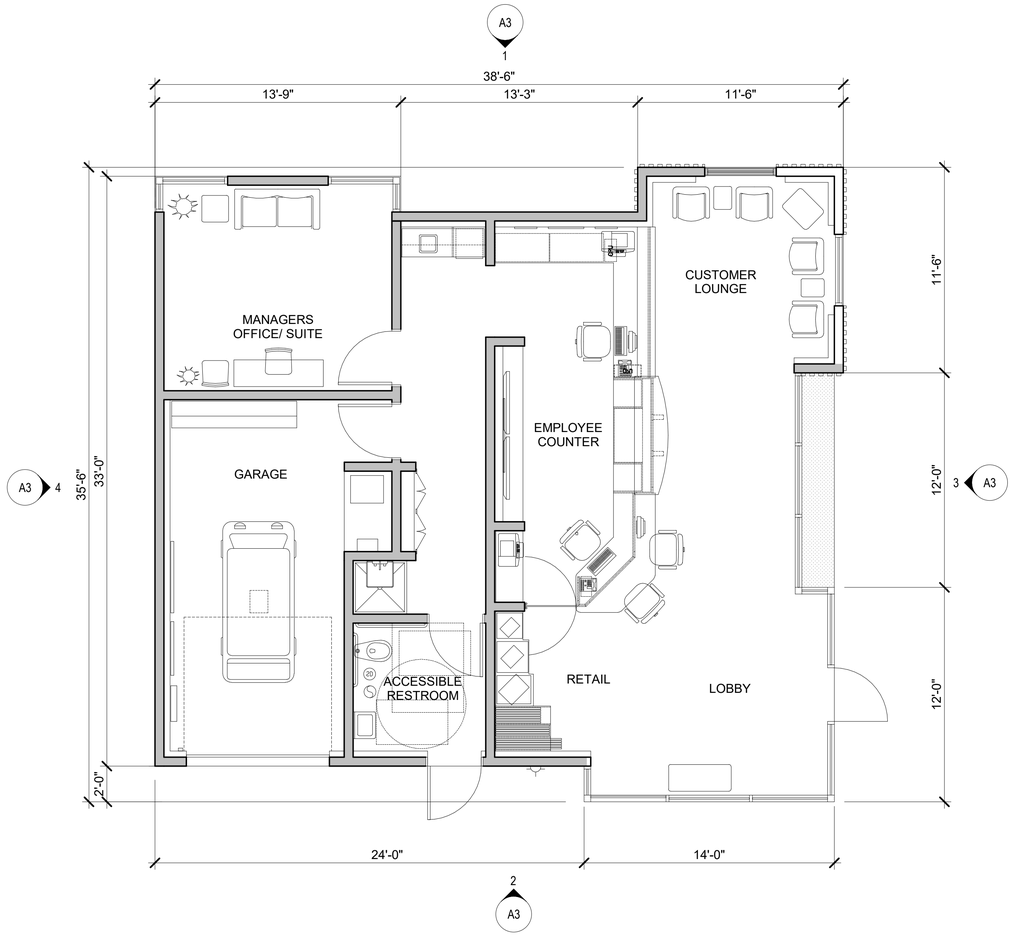
PROPOSED SITE PLAN
As indicated

A1
07.30.2021

FCGA architecture



2 OFFICE ROOF PLAN
1/4" = 1'-0"



1 OFFICE FLOOR PLAN
1/4" = 1'-0"

FCGA architecture

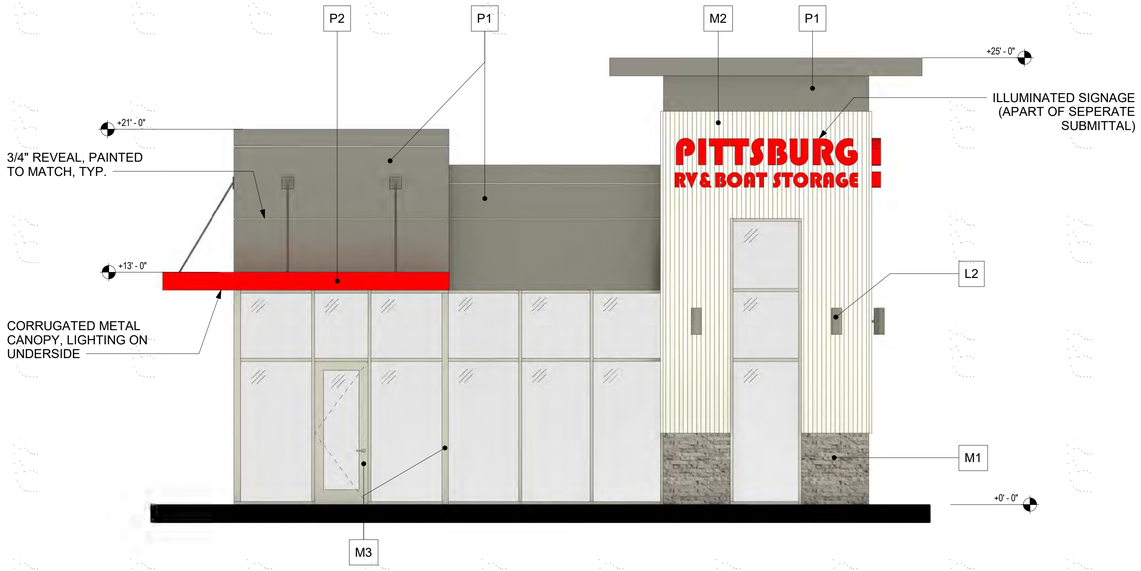
PITTSBURG RV/BOAT STORAGE

3468 PITTSBURG/ ANTIOCH HIGHWAY
PITTSBURG, CA

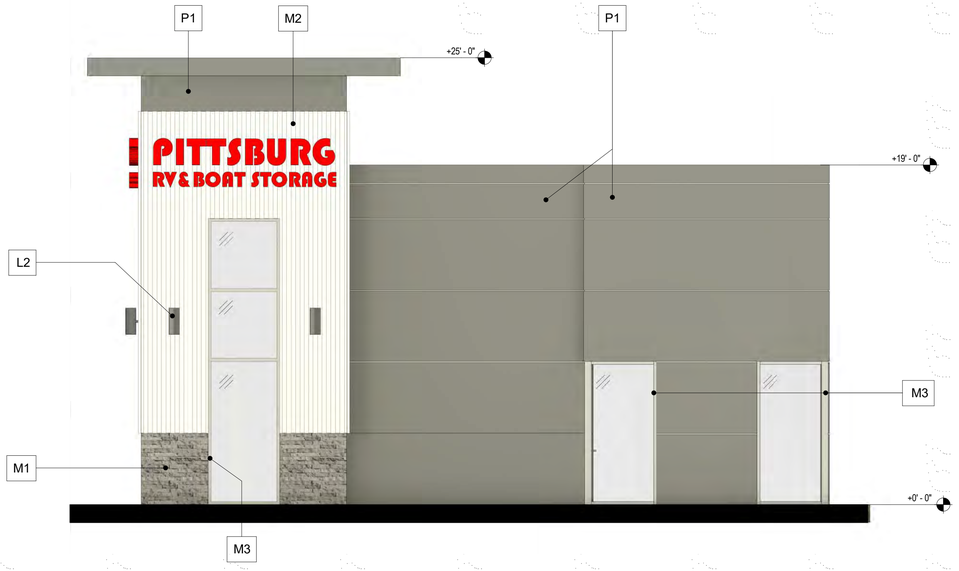
MANAGER OFFICE PLANS

1/4" = 1'-0"

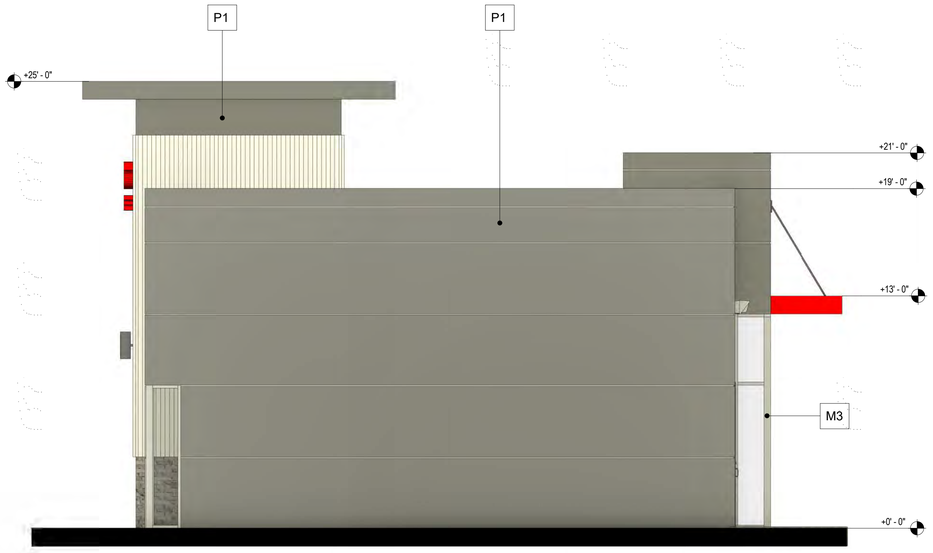
A2
07.30.2021



3 OFFICE - EAST ELEVATION
1/4" = 1'-0"



1 OFFICE - NORTH ELEVATION
1/4" = 1'-0"



4 OFFICE - WEST ELEVATION
1/4" = 1'-0"

2 OFFICE - SOUTH ELEVATION
1/4" = 1'-0"

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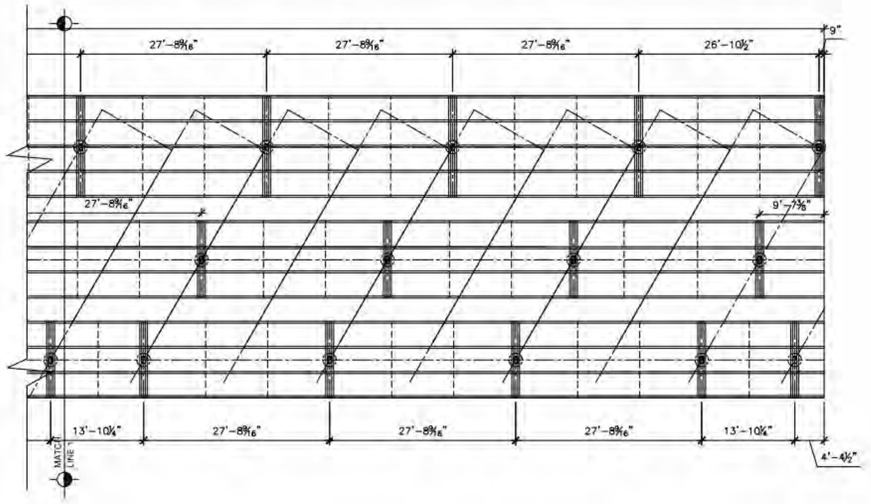
PITTSBURG RV/BOAT STORAGE

3468 PITTSBURG/ ANTIOCH HIGHWAY
PITTSBURG, CA

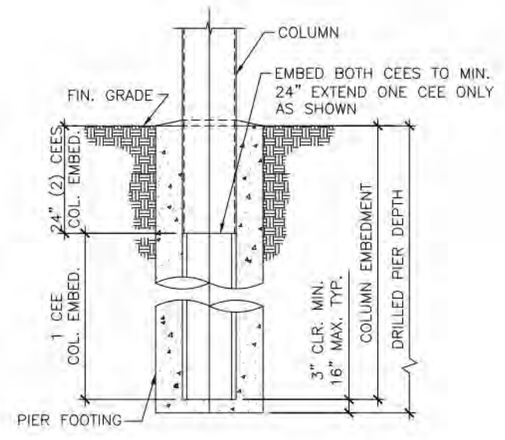
MANAGER OFFICE ELEVATIONS

1/4" = 1'-0"

A3
07.30.2021



1 **TYPICAL SOLAR PLAN**
N/A



4 **PIER FOOTING DETAIL**
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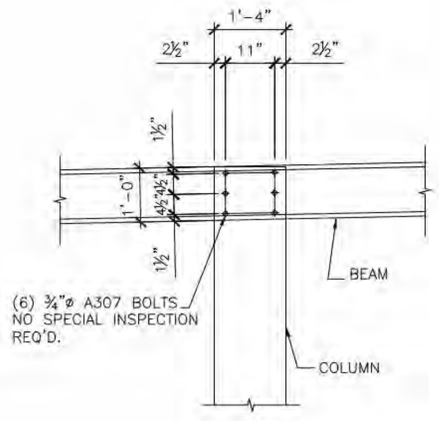

3 **COLUMN TO BEAM CONNECTION DETAIL**
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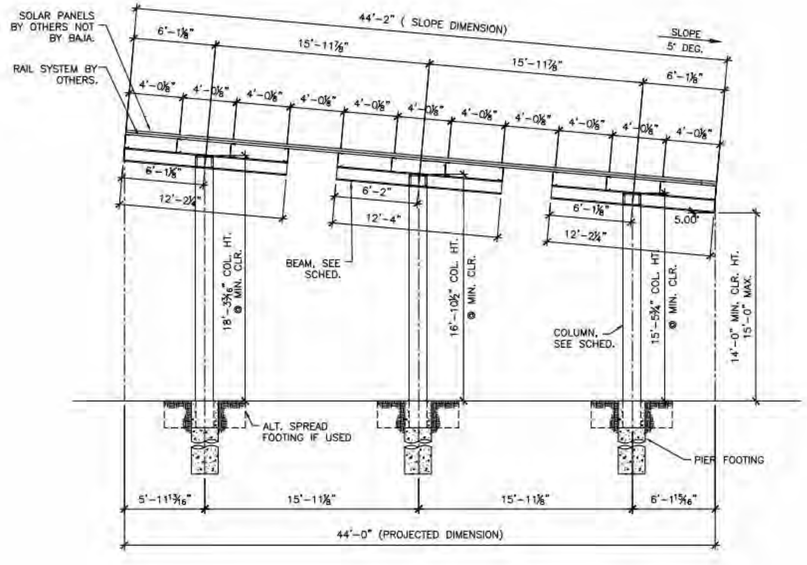

2 **TYPICAL CROSS SECTION**
N/A

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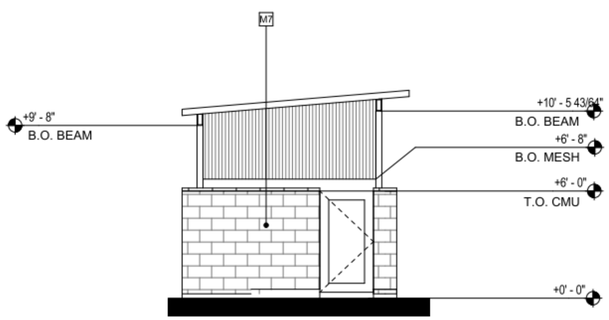
PITTSBURG RV/BOAT STORAGE

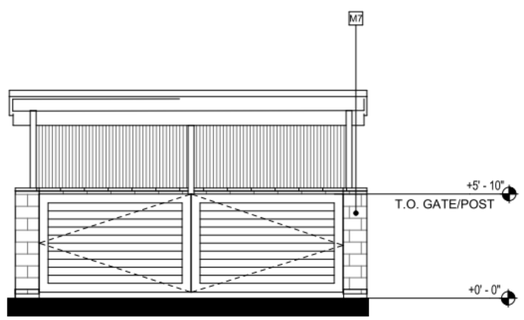
3468 PITTSBURG/ ANTIOCH HIGHWAY
PITTSBURG, CA

SOLAR CANOPY TYPICAL PLAN & SECTION

A4
07.30.2021



4 TRASH ENCLOSURE - EAST ELEVATION
1/4" = 1'-0"



2 TRASH ENCLOSURE - NORTH ELEVATION
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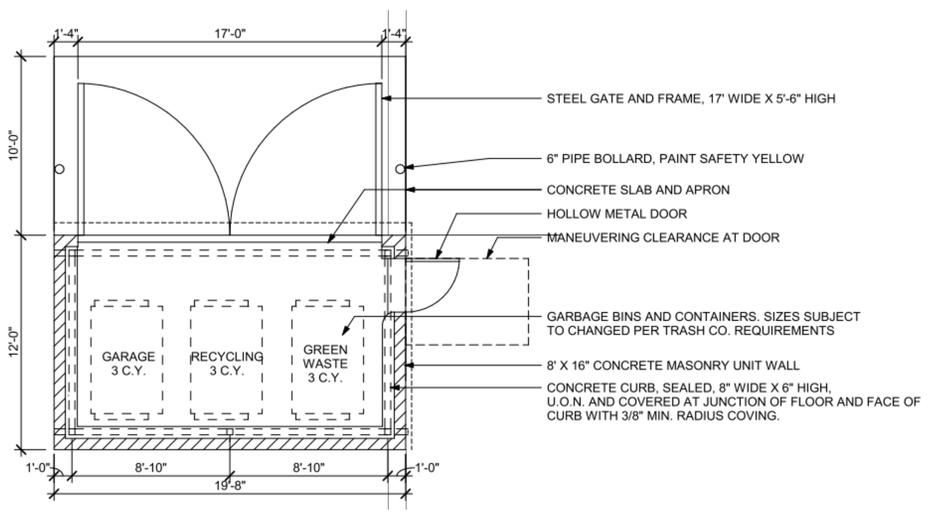

1 TRASH ENCLOSURE - FLOOR PLAN
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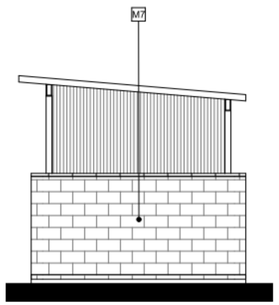
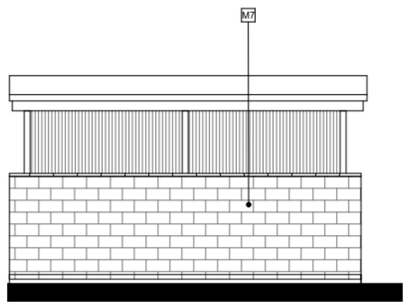


5 TRASH ENCLOSURE - WEST ELEVATION
1/4" = 1'-0"



3 TRASH ENCLOSURE - SOUTH ELEVATION
1/4" = 1'-0"

KEYNOTES:

M7- PAINT - MEDIUM GREY TO MATCH SURROUNDING

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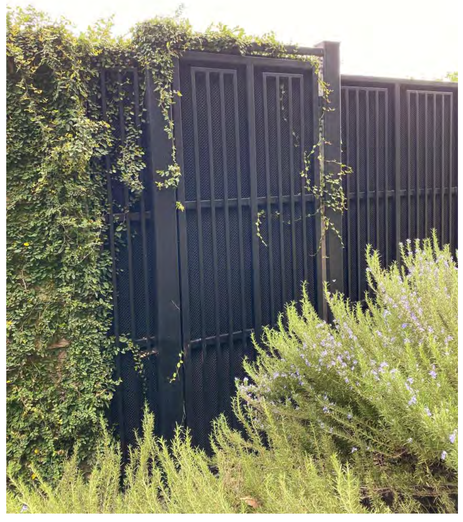
PITTSBURG RV/BOAT STORAGE

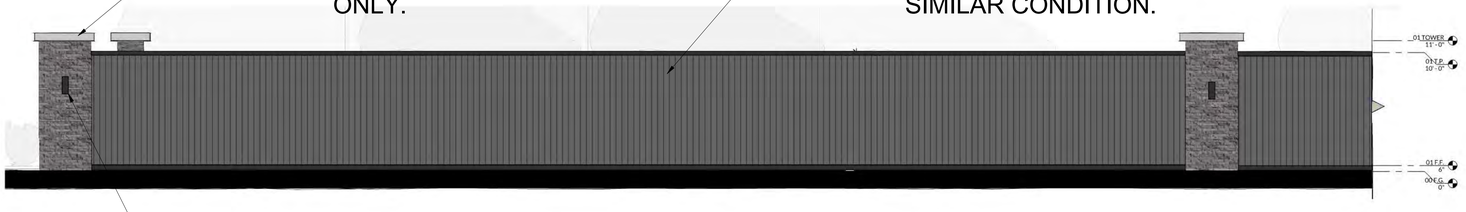
3468 PITTSBURG/ ANTIOCH HIGHWAY
PITTSBURG, CA

TRASH ENCLOSURE DETAILS

A5
07.30.2021

TYPICAL FENCING DETAILS





FENCING ELEVATION FACING HIGHWAY

COLOR AND MATERIALS:

M1 - STONE MASONRY WALL
EL DORADO STONE -
LEDGE CUT, BEACH PEBBLE

P1 - PAINT/ SIMULATED PLASTER FINISH
MBCI- TUFF COAT
ANTIQUE BRONZE

M2 - VERTICAL METAL WALL PANEL
MBCI
PANEL PROFILE- PBD
COLOR: POLAR WHITE

P2 - PAINT
SHERWIN WILLIAMS
SW5868 REAL RED

M3 - ALUMINUM STOREFRONT

LIGHT FIXTURES:

L1- WALL MOUNTED LED WALL PACK
- CREE LIGHTING
- C-LIGHT WALL PACK, LED
- BLACK

L2- SQUARE TUBULAR LED WALL SCONCE W/ UP AND DOWN LIGHT
- BEGA LIGHTING
- 24-597 WALL LUMINAIRE
- BLACK

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PITTSBURG RV/BOAT STORAGE

3468 PITTSBURG/ ANTIOCH HIGHWAY
PITTSBURG, CA

COLORS, MATERIALS & LIGHTING
12" = 1'-0"

A6
07.30.2021

Appendix SWP

Stormwater Control Plan

STORMWATER CONTROL PLAN

For

PITTSBURG RV/BOAT STORAGE

3468 Pittsburg-Antioch Highway
Pittsburg, CA

August 3, 2021

Updated October 7, 2021

Prepared For:

Pittsburg RV & Boat Storage, LLC
185 Front Street, Suite 207
Danville, CA 94526

Prepared By:

Robert A. Karn & Associates, Inc.
707 Beck Avenue
Fairfield, CA 94533
(707) 435-9999

Project #A21011

TABLE OF CONTENTS

Tables

Figures

Attachments

Stormwater Control Plan

I. PROJECT DATA

Table 1. Project Data

Project Name/Number	Pittsburg RV/Boat Storage
Application Submittal Date	
Project Location	3468 Pittsburg-Antioch Highway, Pittsburg
Name of Developer	
Project Phase No.	N/A
Project Type and Description	RV/Boat Storage
Project Watershed	
Total Project Site Area (acres)	12.51 Acres
Total Area of Land Disturbed (acres)	9.2 Acres
Total New Impervious Surface Area (sq. ft.)	334,420 SF
Total Replaced Impervious Surface Area	0 SF
Total Pre-Project Impervious Surface Area	0 SF
Total Post-Project Impervious Surface Area	334,420 SF
50% Rule[*]	Does Not Apply
Applicable Special Project Categories	None
Percent LID and non LID treatment	100% LID treatment.
HMP Compliance [†]	Yes

[*50% rule applies if: Total Replaced Impervious Surface Area > 0.5 x Pre-Project Impervious Surface Area]

[†HMP applies if: (Total New Impervious Area + Total Replaced Impervious Area) ≥ 1 acre]

II. SETTING

II.A. Project Location and Description

The project area is located at 3468 Pittsburg-Antioch Highway, Pittsburg, in the unincorporated area of Contra Costa County, California. The 9.2-acre project site is located on the south side of Pittsburg-Antioch Highway, just west of the Contra Costa Canal Spillway. The project entails construction of a Boat/RV Storage facility comprised of 9 buildings.

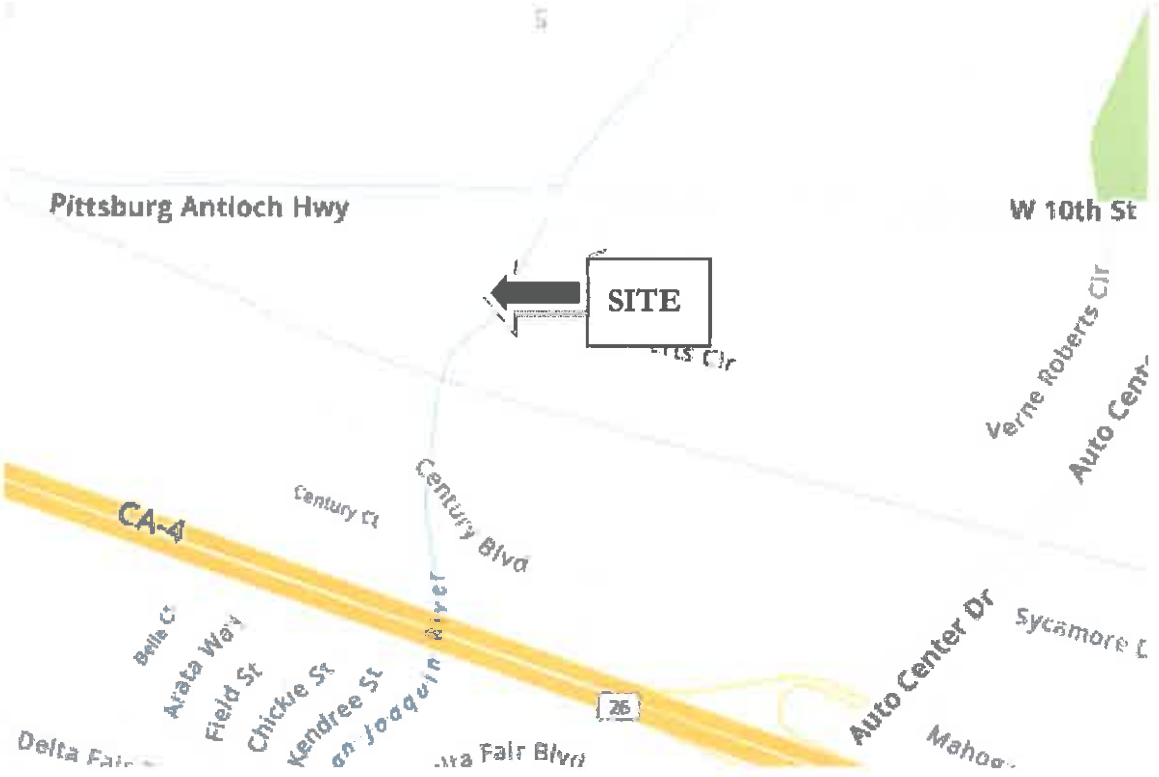


Figure 1: Vicinity Map

II.B. Existing Site Features and Conditions

The site is mainly undeveloped, covered in natural grasses and weeds. The property has been vacant for an unknown period of time and currently contains no existing structures. The site contains no frontage improvements along the frontage. The site topography indicates a mild slope ranging from 510 feet to 476 feet, averaging 1%-2% northeasterly towards Pittsburg-Antioch Highway. Storm runoff currently dissipates into the site soils with excess runoff draining towards the spillway and/or the roadway. Existing ground cover will be stripped in accordance with the geotechnical investigation. The mean annual precipitation is approximately 13 inches.

Figure 2: Existing Conditions Map

II.C. Opportunities and Constraints for Stormwater Control

Treatment of stormwater runoff from the site is to be provided, consistent with methods described in the Contra Costa Clean Water Program's Stormwater C.3 Guidebook. Threshold for including flow control in treatment device design is when total impervious area being created or replaced is over 1 acre. Since the total impervious area being created or replaced is greater than 1 acre, this project requires compliance with hydrograph modification management (flow control) requirements. Storm water will be treated on site via bio-retention basins on the property. The bio-retention areas (BR-A&B) have been sized in accordance with the Contra Costa C.3 sizing tool and detailed in this report.

The proposed project may be required to construct frontage improvements along Pittsburg-Antioch Highway, including but not limited to: curb, gutter, monolithic sidewalk, streetlights, and drainage improvements as necessary.

III. Low Impact Development Design Strategies

III.A. Optimization of Site Layout

III.A.1. Limitation of development envelope

The project is being constructed in conformance with the Zoning Ordinance. Stormwater treatment is being achieved by constructing bio-retention areas and planters onsite to meet C.3 requirements.

III.A.2 Preservation of natural drainage features

No existing natural drainage features will be disturbed or removed with the construction of the project. Proposed drainage features will contain elements of vegetation for both function and aesthetics.

III.A.3. Setbacks from creeks, wetlands, and riparian habitats

No creeks, wetlands and riparian habitats are present on the project site.

III.A.4. Minimization of imperviousness

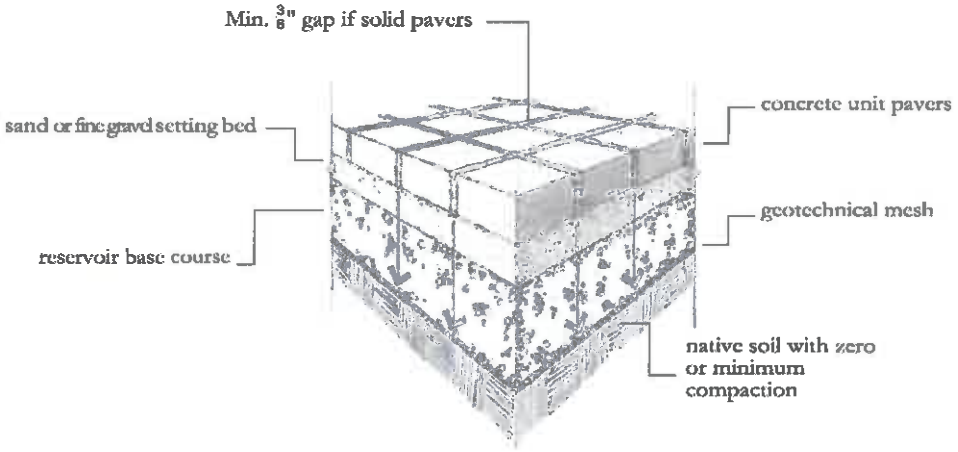
There is sufficient pervious area onsite to allow all stormwater treatment to occur by constructing bio-retention facilities to meet C.3 requirements.

III.A.5 Use of drainage as a design element

Stormwater treatment is being achieved by constructing bio-retention facilities onsite to meet C.3 requirements.

III.B Use of Permeable Pavements

Permeable pavers may be used at various locations in walkways on the project. To be installed per detail in Contra Costa Clean Water Program Stormwater C.3 Guidebook. 7th Edition.



III.C. Dispersal of Runoff to Pervious Areas

The site's impervious development area is directed into bio-retention facilities for treatment. See Figure 3 for the bio-retention facility detail. See landscape plans specific planting materials within the bio-retention areas. Planting materials are per Appendix B of the Contra Costa County Stormwater C.3 Guidebook.

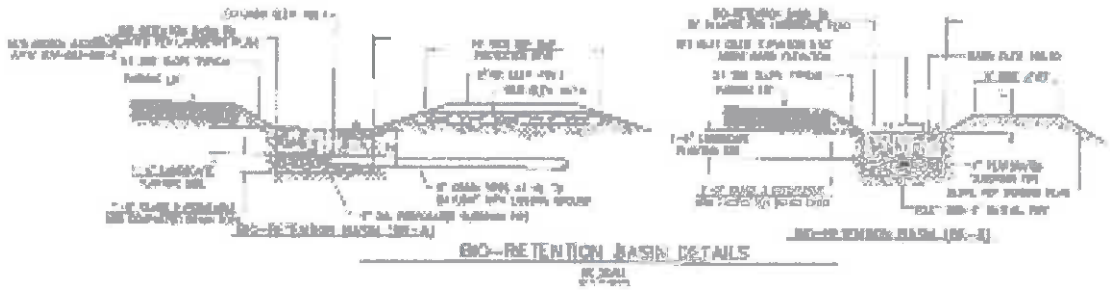


Figure 3: Bio-Retention Details

III.D. Bioretention or other Integrated Management Practices

Bioretention facilities will be integrated with the site layout to treat runoff, and infiltrate some runoff, before discharging to the municipal storm drain.

IV. DOCUMENTATION OF DRAINAGE DESIGN

IV.A. Descriptions of each Drainage Management Area

IV.A.1. Table of Drainage Management Areas

DMA Name	*Surface Type*	*Area (square feet)*
PAVE-1	*Asphalt/Concrete*	*135,490*
PAVE-2	*Asphalt/Concrete*	*3,860*
PAVE-3	*Asphalt/Concrete*	*11,710*
ROOF-1	*Conventional Roof*	*182,050*
ROOF-2	*Conventional Roof*	*1,310*
LAND-1	*Landscaping*	*19,090*
LAND-2	*Landscaping*	*4,910*
LAND-3	*Landscaping*	*25,300*

IV.A.2. Drainage Management Area Descriptions

PAVE-1, totaling 135,490 square feet, drains a parking lot into BR-A, a bio-retention basin.

PAVE-2, totaling 3,860 square feet, drains a parking lot into BR-B, a bio-retention basin.

PAVE-3, totaling 11,710 square feet, drains the site frontage, is untreated.

ROOF-1, totaling 182,050 square feet, drains the building roof into BR-A, a bio-retention basin.

ROOF-2, totaling 1,310 square feet, drains the building roof into BR-B, a bio-retention basin.

LAND-1, totaling 19,090 square feet, drains a landscaped area into BR-A, a bio-retention basin.

LAND-2, totaling 4,910 square feet, drains a landscaped area into BR-B, a bio-retention basin.

LAND-3, totaling 25,300 square feet, drains a landscaped area, is self-treating.

IV.B. Integrated Management Practices

Runoff from impervious area onsite, including roofs and paved areas, will be routed to two bio-retention basins. Each facility will be designed and constructed to the criteria in the latest edition of the Stormwater C.3 Guidebook, including the following features:

- Each layer built flat, level, and to the elevations specified in the plans.
- 18 inches of a sand/compost mix meeting the specifications approved by the RWQCB.
- A Class 2 permeable layer meeting Caltrans specification 68-2.02F(3). The depth of each layer to be designed to provide the necessary V2 flow control volume, consistent with Table 3-6, Stormwater C.3 Guidebook.
- Perforated pipe underdrain, made of PVC SDR 35, installed with the invert at the top of the Class 2 permeable layer with holes facing down, and connected to the overflow structure at that same elevation. The size of the underdrain shall be designed consistent with the Stormwater C.3 Guidebook.
- Reservoir between the top of soil elevation and the overflow grate elevation. The depth to be calculated based on the required V1 volume for flow control, consistent with Table 3-6, Stormwater C.3 Guidebook.
- Concrete drop inlet with frame overflow structure, with grate set to specified elevation, connected to the public storm drain system.
- Vertical cutoff walls to protect adjacent pavement and concrete areas.
- Plantings selected for suitability to climate and location, well-drained & low fertility bio-retention soil media, and for water conservation.
- Irrigation system on a separate zone, with drip emitters and "smart" irrigation controllers.

IV.C. Tabulation and Sizing Calculations

IV.C.1. Information Summary for IMP Design

Total Project Area (Square Feet)	400,752 SF (9.2 Acres)
Mean Annual Precipitation	13.0 inches/year
IMPs Designed For:	Treatment & Flow Control

IV.C.2. Self-Treating Areas

Table 2.

DMA Name	Area (SF)
LAND-3	25,300

IV.C.3. Untreated Areas

Table 3.

DMA Name	Area (SF)
PAVE-3	11,710

IV.C.4. Areas Draining to Self-Retaining Areas

Table 4. None

IV.C.5. Areas Draining to IMPs

Table 5.

Project Name: **Pittsburg RV/Boat Storage, 3468 Pittsburg-Antioch Highway, Pittsburg**

Type: **Treatment & Flow Control** Drainage Area: **9.2 Acres**

Mean Annual Precipitation: **13.0 inches** Soil Group: **C**

Porosity Factor (for V2- Gravel Layer): **0.40**

IMP Name: IMP1 (BR-A)

IMP Type: Bioretention Basin

DMA Name	DMA Area (SF)	Post-Project Surface Type	DMA Runoff Factor	DMA Area X Runoff Factor
ROOF-1	182,050	Roof	1	182,050
PAVE-1	135,490	Asphalt/Concrete	1	135,490
LAND-1	19,090	Landscaping	0.1	1,909
			Total	319,449

IMP Sizing Factor	Rain Adjust. Factor	Minimum Area or Vol/Depth	Proposed Area or Depth
A: 0.06	1.264	24,227	24,550 SF
V1: 0.05	1.264	20,158/10"	10"
V2: 0.066	1.264	26,608/13"	13"

IMP Name: IMP2 (BR-B)

IMP Type: Bioretention Basin

DMA Name	DMA Area (SF)	Post-Project Surface Type	DMA Runoff Factor	DMA Area X Runoff Factor
ROOF-2	1,310	Roof	1	1,310
PAVE-2	3,860	Asphalt/Concrete	1	3,860
LAND-2	4,910	Landscaping	0.1	491
			Total	5,661

IMP Sizing Factor	Rain Adjust. Factor	Minimum Area or Vol/Depth	Proposed Area or Depth
A: 0.06	1.264	429	3,860 SF
V1: 0.05	1.264	358/1"	6"
V2: 0.066	1.264	472/1"	12"

SIZING OF ORIFICE:

Use Eqn 3-11 to find UnderdrainMaxFlow (UMF): [0.122 x (MAP-20.2) + 1.85]/1,000,000, where MAP = 13 inches

Use Eqn 3-18 to find Orifice Area (in feet): UMF/[0.6 x $(64.4H)^{0.5}$], where H is the storage height above the orifice

Use Eqn 3-19 to find Orifice Diameter (in inches): 12 x $[(4 \times \text{Orifice Area})/3.1416]^{0.5}$

For **IMP-1**, UMF= 0.9; Orifice Area= 0.125 feet; and **Orifice Diameter = 4.8 inches (use 4 inches)**

For **IMP-2**, UMF= 0.03; Orifice Area= 0.004 feet; and **Orifice Diameter = 0.9 inches (use 1 inch)**

IV.C.6. Areas Draining to Non-LID Treatment

Table 6. None

V. SOURCE CONTROL MEASURES

V.A. Site activities and potential sources of pollutants

The following activities planned have the potential to allow pollutants to enter runoff:

Potential dumping of wash water or other liquids into storm drain inlets.
Landscape maintenance.
Trash refuse areas

All areas where these activities occur will drain to a stormwater treatment bioretention area. To further reduce the potential to enter runoff, permanent and operational source control BMPs will be implemented as described in Table 8 below.

Trash Load Reduction

In compliance with **Provision C.10- Trash Load Reduction**, full trash capture will be handled through the proposed bio-retention basins, which are designed to capture any trash accumulated prior to discharging into the public storm drain system(s). Periodic removal of trash from each bio-retention planter and basin will be required.

V.B. Source Control Table

Table 7. Source and Source Control BMPs

Potential Source of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
On-site storm drain inlets	Mark inlets that could be easily accessed with a "No Dumping-Drains to Creek" or similar message.	• Maintain and periodically repaint or replace inlet markings. • Distribute stormwater pollution prevention information to Owner.

Potential Source of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
Landscape/outdoor pesticide use	• Any native trees, shrubs, and ground cover on the site will be preserved to the maximum extent possible. • Landscaping will be designed to minimize required irrigation and runoff, to promote surface infiltration, and to minimize the use of fertilizers and pesticides that can contribute to storm water pollution. • Plantings for bioretention areas will be selected to be appropriate to anticipated soil and moisture conditions. • Where possible, pest resistant plants will be selected, especially for locations adjacent to hardscape. Plants will be selected appropriate to site soils, slopes, climates, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	• Owner will receive integrated pest management information. • All site landscaping is to be maintained with minimal or no use of pesticides
Vehicle washing	• Driveways and parking areas drain to bioretention areas.	Distribute stormwater pollution prevention information to Owner.
Trash Refuse Area	• Provide adequate number of receptacles. • Inspect receptacles regularly; repair or replace leaky receptacles. • Prohibit/prevent dumping of liquid or hazardous wastes. • Post "no hazardous materials" signs. • Inspect and pick up litter daily and clean up spills immediately. • Keep spill control materials available on-site. See fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks. • Trash enclosure will connect to the sanitary sewer system.	Distribute stormwater pollution prevention information to Owner. Post "Do Not Dump Hazardous Materials Here" signs near receptacles.

V.C. Features, Materials, and Methods of Construction of Source Control BMPs

The bio-retention areas will be planted with plants suitable for the climate, location, and consistent with the Stormwater C.3 Guidebook.

VI. STORMWATER FACILITY MAINTENANCE

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

All storm water treatment facilities in this plan will be owned and maintained in perpetuity by the private owner of the subject property. The applicant accepts responsibility for operation and maintenance of the facilities until such time as this responsibility is formally transferred to a subsequent owner.

The applicant will execute, prior to completion of project construction, a Stormwater Facilities Operation and Management Agreement. Such an agreement will "run with the land" and be enforceable on subsequent property owners. The applicant will provide the City access to stormwater treatment devices for inspection.

VII. CONSTRUCTION PLAN C.3 CHECKLIST

Table 8.

The below documents will be provided as part of the construction documents.

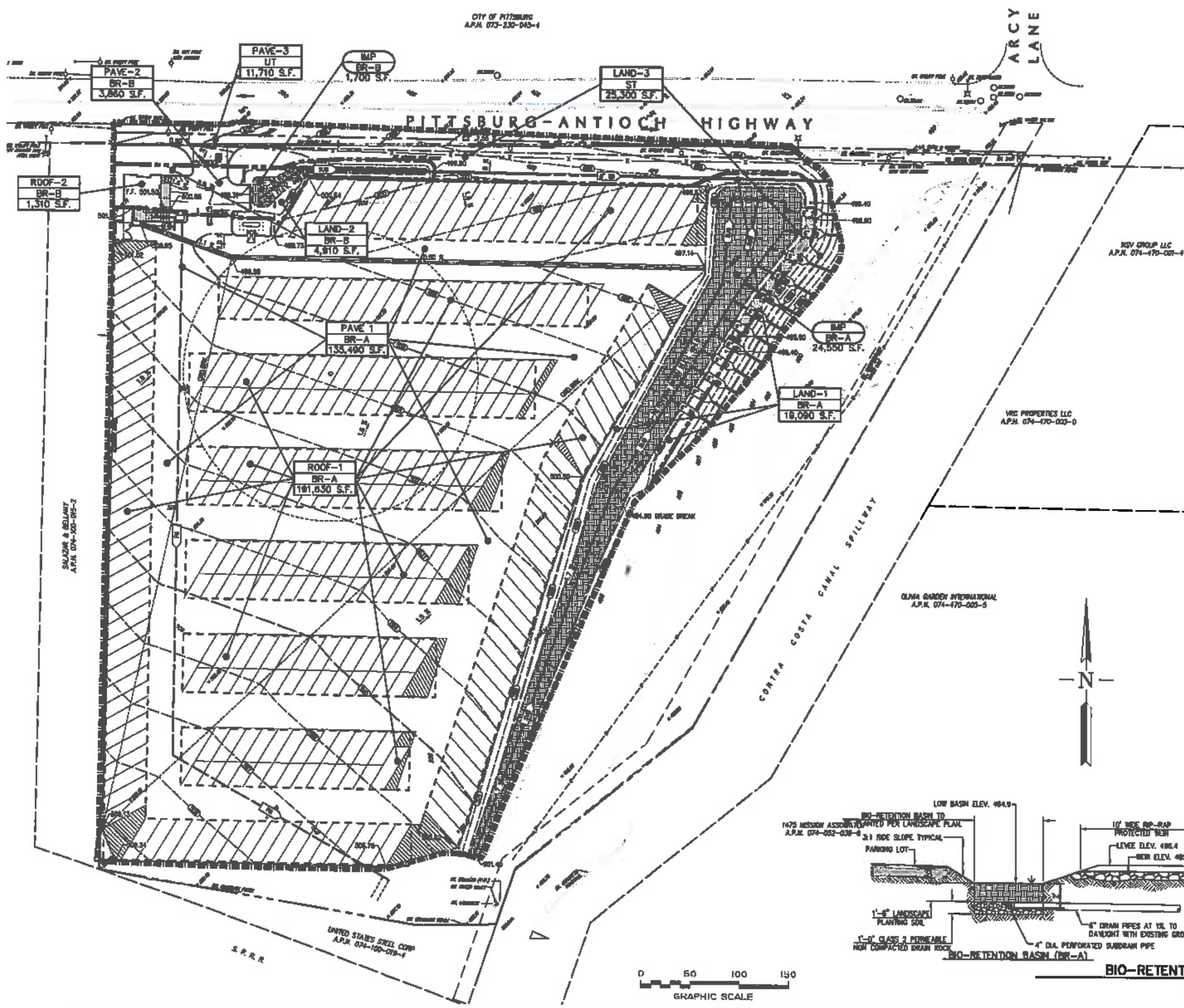
Stormwater Control Plan Reference	BMP Description	Plan Sheet Number
Exhibit & Table 6	Bioretention Areas sized as specified and designed to capture and route drainage from areas delineated on Exhibit.	C2
Table 8	On-site drain inlets (if any) to be marked with "no dumping" message.	SWPPP
Table 8	Plant selection to minimize irrigation, minimize use of fertilizers and pesticides, and for pest assistance.	L1
Table 8	Trash refuse areas to be protected to prevent pollutant runoff	SWPPP

VIII. CERTIFICATIONS

The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order R2-2009-0074 and Order R2-2011-0083.

Robert A. Karn

Robert A. Karn & Associates



LEGEND:

	PROPOSED	EXISTING
LIMIT OF IMPROVEMENTS		
DRAINAGE AREA BOUNDARY		
BIO-RETENTION TREATMENT AREA		
DRAINAGE MANAGEMENT AREA (DMA) ID / TREATMENT DEVICE ID: BIO-RETENTION BASIN (BR), UNTREATED (UT)	PAVE 1 / BR-A / sq.ft.	
INTEGRATED MANAGEMENT PRACTICE (IMP) / BIO-RETENTION BASIN (BR)	IMP / BR-A / sq.ft.	
BOUNDARY LINE		
STORM DRAIN PIPE		
BIO-RETENTION SUBDRAIN		
DRAINAGE INLET		
VERTICAL CURB		
VALLEY GUTTER		
EDGE OF PAVEMENT		
CONTOUR		
GRADE BREAK		
STORAGE CANOPY		

Project Name: Pittsburg RV/Boat Storage, 3468 Pittsburg-Antioch Highway, Pittsburg
Type: Treatment & Flow Control   Drainage Area: 9.2 Acres
Mean Annual Precipitation: 13.0 inches
Porosity Factor (for V2- Gravel Layer): 0.40   Soil Group: C

Un-treated Areas

DMA Name	Area (SF)
PAVE-3	11,710

Self-Treating Areas

DMA Name	Area (SF)
LAND-3	25,300

BMP Name: BMP-1 (BR-A)- Bio-Retention Basin

DMA Name	DMA Area (SF)	Post-Project Surface Type	DMA Runoff Factor	DMA Area X Runoff Factor
ROOF-1	182,050	Roof	1	182,050
PAVE-1	135,490	Asphalt	1	135,490
LAND-1	19,090	Landscaping	0.1	1909
			Total	319,449

BMP Sizing Factor	Rain Adjust. Factor	Minimum Area or Vol/Depth	Proposed Area or Depth
A: 0.08	1.284	24,227	24,550
V1: 0.05	1.224	20,138/10"	10"
V2: 0.068	1.?44	28,608/13"	13"

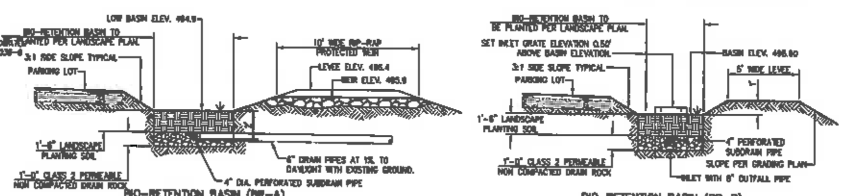
BMP Name: BMP-2 (BR-2)- Bio-Retention Facility

DMA Name	DMA Area (SF)	Post-Project Surface Type	DMA Runoff Factor	DMA Area X Runoff Factor
ROOF-2	1,310	Roof	1	1,310
PAVE-2	3,860	Asphalt	1	3,860
LAND-2	4,610	Landscaping	0.1	461
			Total	5,631

BMP Sizing Factor	Rain Adjust. Factor	Minimum Area or Vol/Depth	Proposed Area or Depth
A: 0.08	1.284	419	3,480 SF
V1: 0.05	1.284	350/1"	6"
V2: 0.086	1.284	472/1"	12"

SIZING OF ORIFICE:
Use Eqn 3-11 to find Underdrain MaxFlow (UMF): [0.122 x (MAP-20.2) + 1.85]/1,000,000, where MAP = 13 inches
Use Eqn 3-18 to find Orifice Area (in feet): UMF/[0.6 x (64.4H)^0.5], where H is the storage height above the orifice
Use Eqn 3-19 to find Orifice Diameter (in inches): 12 x [(4 x Orifice Area)/3.1416]^0.5

For BMP-1, UMF= 0.9; Orifice Area= 0.125 feet; and [illegible]
For BMP-2, UMF= 0.08; Orifice Area= 0.004 feet; and [illegible]



BIO-RETENTION BASIN DETAILS
NO SCALE

RAK CIVIL ENGINEERS
ROBERT A. KARN & ASSOCIATES, INC.

PITTSBURG RV/BOAT STORAGE
3468 PITTSBURG/ ANTIOCH HIGHWAY
PITTSBURG, CA

PRELIMINARY STORM WATER CONTROL PLAN

C2

10.07.2021

Appendix TRA

Trip Generation Analysis

Abrams Associates
TRAFFIC ENGINEERING, INC.

July 6, 2021

Kristin Pollot
Planning Manager
Planning Division
City of Pittsburg
65 Civic Avenue
Pittsburg, CA 94565

Re: Trip Generation Analysis for the Proposed Solar RV and Boat Storage Project

This report presents the results of the trip generation analysis of the proposed project at 3479 Pittsburg Antioch Highway in the City of Pittsburg. The project would involve construction of a 500 space RV & boat storage yard storage yard with an extensive solar installation. The property is currently undeveloped.

PROJECT TRIP GENERATION

The trip generation rates are based on the Institute of Transportation Engineers (ITE) rates for a self-storage facility (ITE Land Use Code 151) taken from the 10th Edition of the ITE Trip Generation Manual. There are no ITE rates available for a RV or boat storage facility and based on a review of the most similar rates in the ITE trip generation manual it was determined that using the per unit self-storage trip generation rates would provide the most accurate forcast of the project's potential trip generation. Please note that information on the trip rates proposed to be used for these forecasts are attached to this report. This includes copies of the pages from the ITE Manual that present the statistical details on the rates being used.

Please note a "*trip*" is defined in ITE's Trip Generation publication as a single or one-directional vehicular movement with either the origin or destination at the project sites. As a result, a trip can be either "*to*" or "*from*" the site. Consistently, a single visit to a site is counted as two trips (i.e., one to and one from the site). For the purposes of determining the reasonable worst-case impacts of traffic on the surrounding street network from a proposed project, the trips generated by this proposed development are estimated for the peak commute hours which represent the peak hours of "*adjacent street traffic*". This is the time period when the project traffic would generally contribute to the greatest amount of congestion. As shown in **Table 1**, the project is forecast to generate no more than about 10 new vehicle trips on the surrounding roadway system during the peak commute hours.

It should be noted that the trip generation survey data indicates the trip generation for storage facilities is generally low during the peak commute hours because most trips to these kinds of

Table 1
Project Trip Generation Calculations

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
ITE Self Storage Trip Rates - trips per 100 storage spaces	151		17.96	0.71	0.68	1.39	0.98	0.98	1.95
Project Trip Generation		***500 spaces***	***90***	***4***	***3***	***7***	***5***	***5***	***10***

Source: ITE Trip Generation, 10th Edition, 2018.

facilities occur during off-peak hours when customers towing trailers or driving RV's don't have to deal with commute traffic. The data indicates the peak trip generation for a storage facilitiy is normally on weekends with Saturday afternoon typically being the highest, about two thirds higher than the peak hour traffic from the facility on a weekday afternoon. However, the project would be forecast to generate no more than about 16 trips during the Saturday peak hour.

VEHICLE MILES TRAVELED

One performance measure that can be used to quantify the transportation impacts of a project is vehicle miles traveled (VMT). This section presents the extent of the VMT-related transportation impacts caused by the Project. The State has adopted new transportation analysis guidelines that specify vehicle miles traveled as the new metric for evaluating transportation impacts, and therefore a project's effect on automobile delay shall no longer constitute a significant impact. Because VMT is a relatively new method for measuring transportation impacts under CEQA, less data exists to estimate VMT than trip generation based on use and location. VMT is typically estimated using an area-wide travel demand model from a regional transportation agency that calculates VMT based on the number of vehicles multiplied by the typical distance traveled by each vehicle originating from or driving to a certain area.

VMT is a particularly useful metric for evaluating the impacts of growth on greenhouse gas (GHG) emissions because it can be used to estimate fuel consumption by motor vehicles. Increases in VMT cause proportional increases in greenhouse gas emissions and air pollution. The Office of Planning and Research (OPR) released their final proposed Guidelines in a Technical Advisory on Evaluating Transportation Impacts in CEQA, dated December 2018, which went into effect on July 1, 2020. The guidelines for VMT screening specify the following about small projects: "*Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact.* ". As shown above in **Table 1** the proposed project could qualify for the screening criteria covering small projects since it is forecast to generate an increase in traffic of about 90 trips per day. Therefore, subject

to City approval, this project would be considered a small project that would have a less than significant impact on the VMT in the area.

Please don't hesitate to contact me if you have any questions or need addional information.

Sincerely,

Stephen C. Abrams
President, Abrams Associates
T.E. License No. 1852

Land Use: 151
Mini-Warehouse

Description

A mini-warehouse is a building in which a number of storage units or vaults are rented for the storage of goods. They are typically referred to as "self-storage" facilities. Each unit is physically separated from other units, and access is usually provided through an overhead door or other common access point.

Additional Data

Time-of-day distribution data for this land use are presented in Appendix A. For the 10 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 10:30 and 11:30 a.m. and 1:15 and 2:15 p.m., respectively.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Colorado, Massachusetts, Minnesota, New Jersey, Texas, and Utah.

Source Numbers

212, 403, 551, 568, 642, 708, 724, 850, 868, 876

Mini-Warehouse
(151)

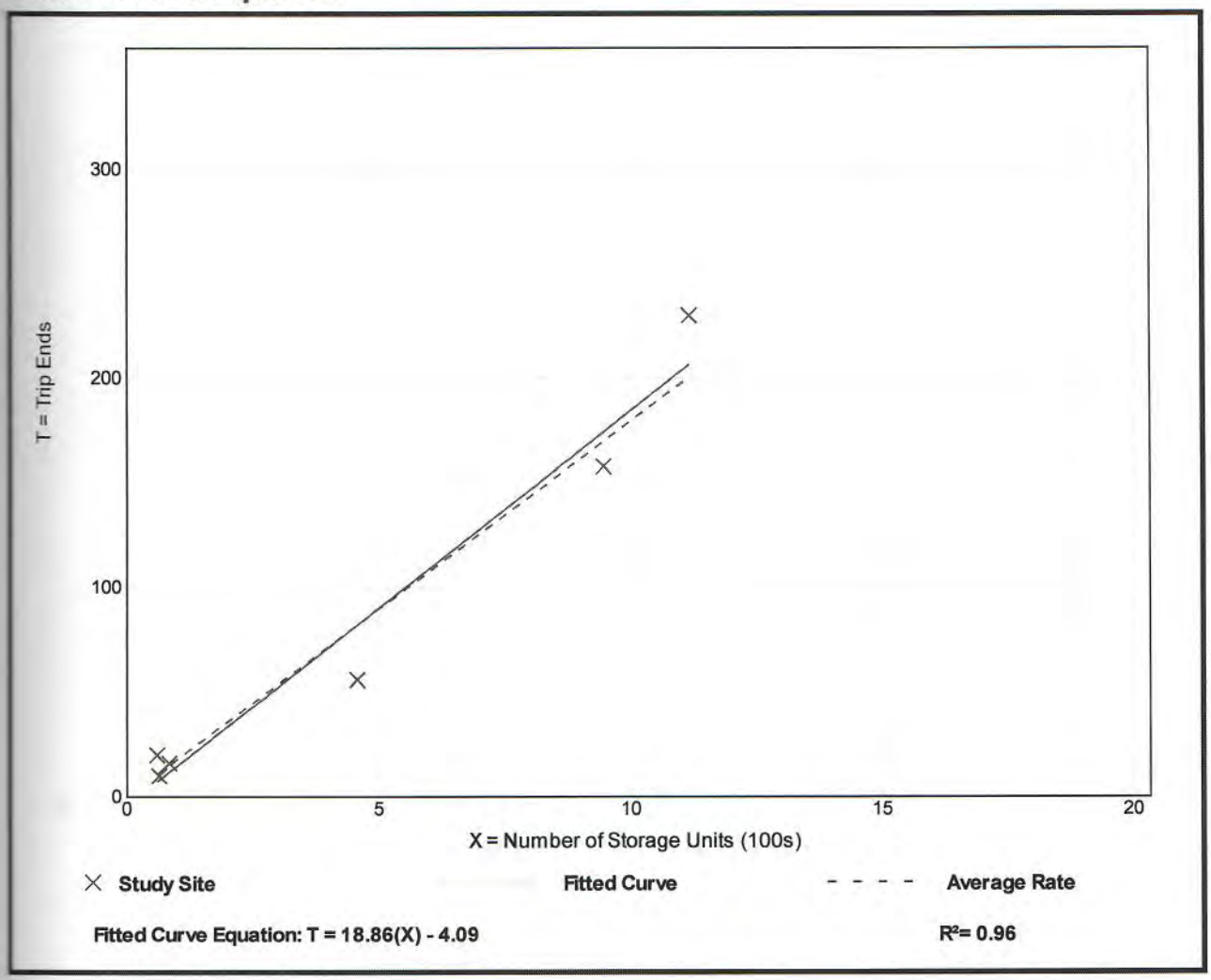
Vehicle Trip Ends vs: Storage Units (100s)
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. Num. of Storage Units (100s): 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
17.96	12.25 - 33.33	4.13

Data Plot and Equation



Fitted Curve Equation: T = 18.86(X) - 4.09

R^2= 0.96

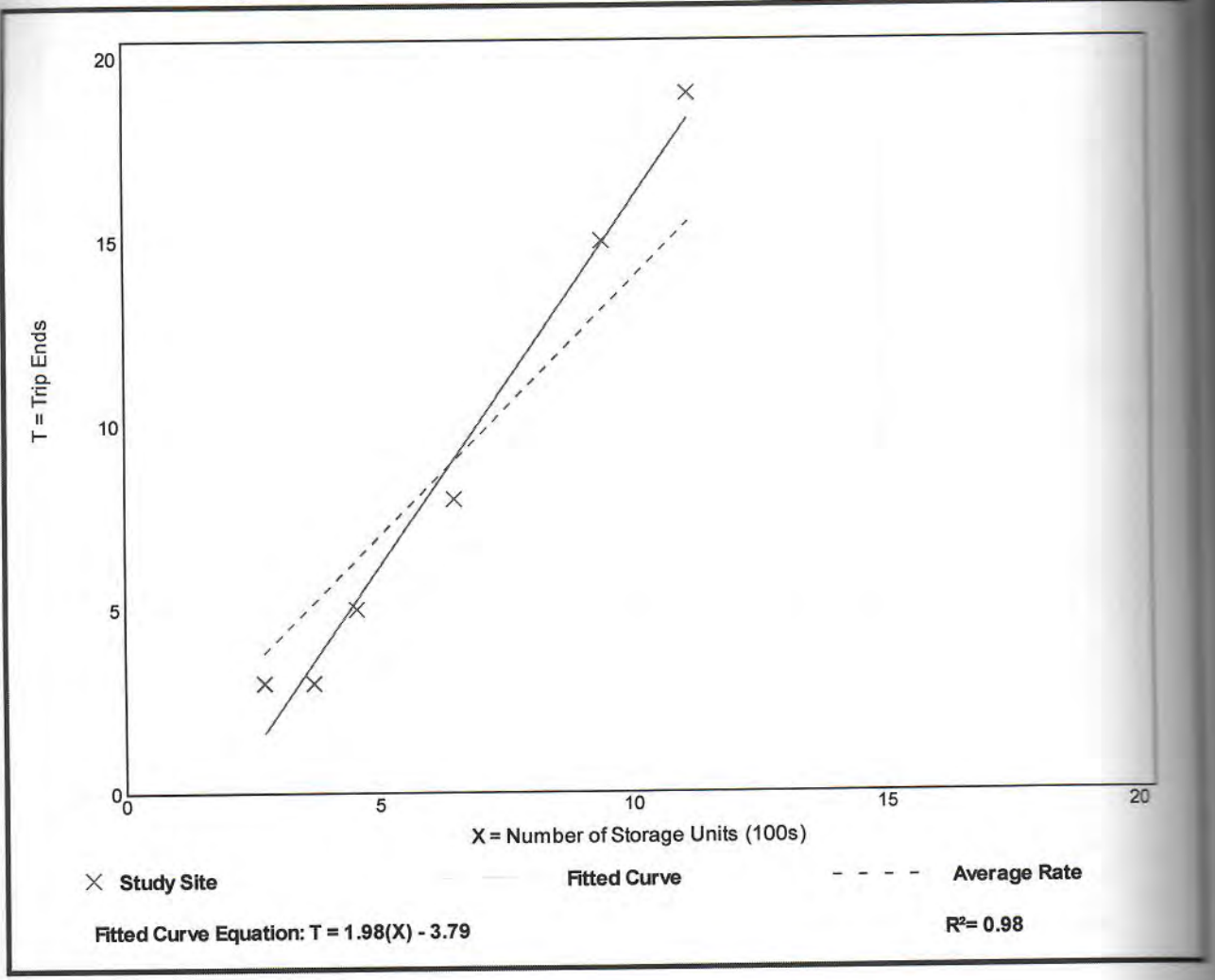
Mini-Warehouse
(151)

Vehicle Trip Ends vs: **Storage Units (100s)**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. Num. of Storage Units (100s): 6
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
1.39	0.81 - 1.70	0.33

Data Plot and Equation



Fitted Curve Equation: T = 1.98(X) - 3.79

R^2= 0.98

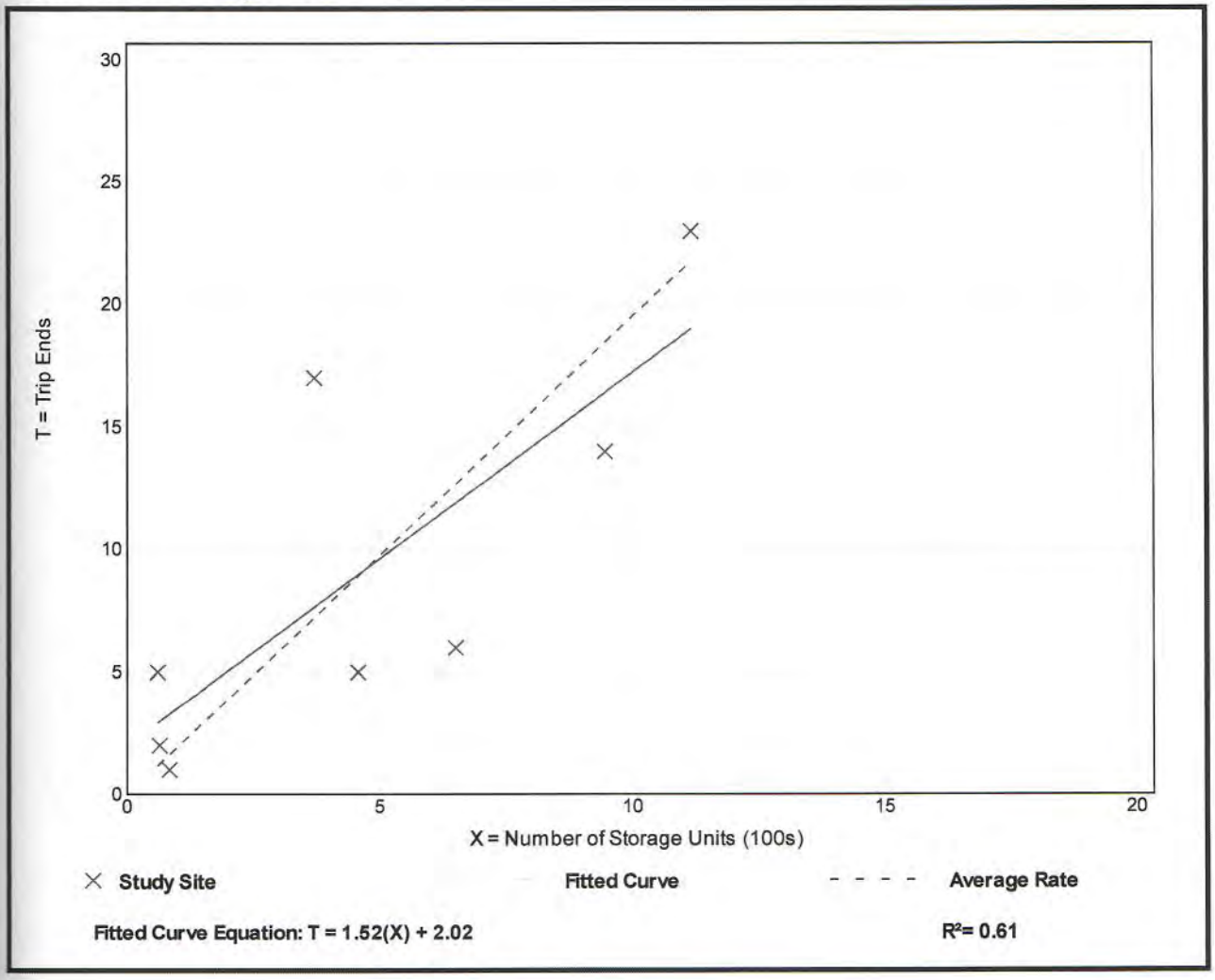
Mini-Warehouse
(151)

Vehicle Trip Ends vs: **Storage Units (100s)**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 8
Avg. Num. of Storage Units (100s): 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
1.95	0.92 - 8.33	1.40

Data Plot and Equation



Fitted Curve Equation: T = 1.52(X) + 2.02

R^2= 0.61