UNION SANITARY DISTRICT

Initial Study/Mitigated Negative Declaration

Emergency Outfall Improvements Project

SCHEIDEGGER & ASSOCIATES

June 2018

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

EMERGENCY OUTFALL IMPROVEMENTS PROJECT

June 2018

LEAD AGENCY:
Union Sanitary District
5072 Benson Road
Union City, CA 94587-2508
(510) 477-7606

PREPARED BY:
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WITH ASSISTANCE FROM:
WRA Environmental Consultants (Biology)
Archeo-Tec (Cultural Resources)

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INTRODUCTION AND PROJECT DESCRIPTION

1. Project Title: Emergency Outfall Improvements Project

2. Lead Agency Name and Address: Union Sanitary District
5072 Benson Road
Union City, CA 94587-2508

3. Contact Person and Phone Number: Raymond Chau
(510) 477-7606

Paul Scheidegger
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4. Project Location:

Figure 1 shows the location of the Alvarado Wastewater Treatment Plant (WWTP) where the Emergency Outfall Improvement Project (Project) will be located. The site is located within the city of Union City in Alameda County, at 5072 Benson Road, along the eastern border of the Old Alameda Creek Channel.

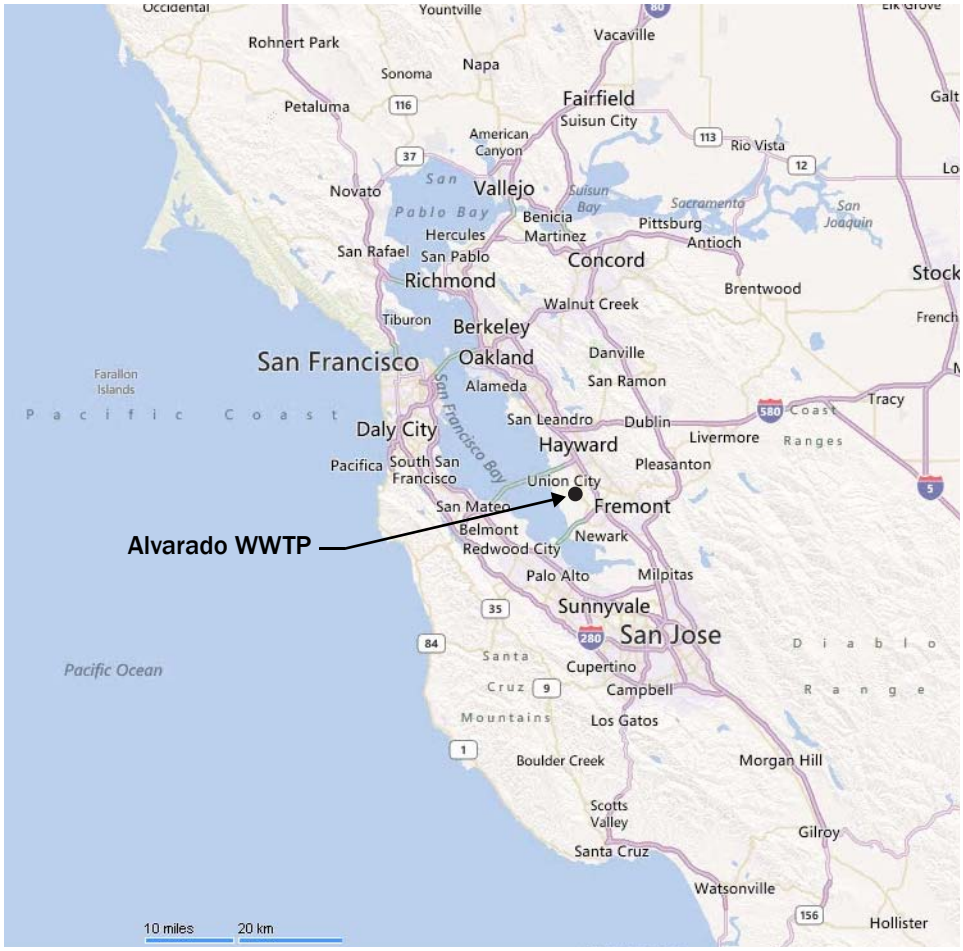
5. Project Sponsor's Name and Address: Union Sanitary District
5072 Benson Road
Union City, CA 94587-2508

6. General Plan Designation: Civic Facility[1]

7. Zoning: Civic Facility[2]

8. Introduction:

Union Sanitary District (USD) is a special district that provides wastewater collection, treatment, and disposal services to residents and businesses within the cities of Fremont, Newark, and Union City in southern Alameda County. USD's wastewater collection system consists of three major pump stations and about 800 miles of pipelines ranging in size from 6 to 48 inches in diameter. All wastewater generated within the service area, including peak wet weather flows, receives full secondary treatment at the USD Alvarado WWTP and is then conveyed to the East Bay Discharger's Authority (EBBA) for discharge to San Francisco Bay.



Source: Microsoft, Bing Maps

Figure 1. Regional Location of the Alvarado WWTP

Figure 2 shows the Alvarado WWTP and the location of the emergency outfall. This outfall is adjacent to an Alameda County Flood Control Water Conservation District (ACFC&WCD) drainage outfall. The emergency outfall is permitted to discharge treated effluent to Old Alameda Creek through a 48-inch flap gate during times of wet weather and only when the maximum hydraulic capacity of the EBDA outfall is utilized. The District is also permitted to exercise the outfall twice per year during wet weather events at no more than 140,000 gallons per discharge. Other than to exercise the valve, the outfall has been used only once in the last 20 years (late 1990s).

Under existing conditions, the emergency outfall flap gate is submerged below water during high tides and is partially exposed during low tides. This causes a maintenance issue as the water brings in sediments that bury the flap gate and promotes vegetative growth, which impedes the operation of the flap gate. The District currently performs a maintenance program once every three months to clear the sediment and vegetative growth.

9. Project Description:

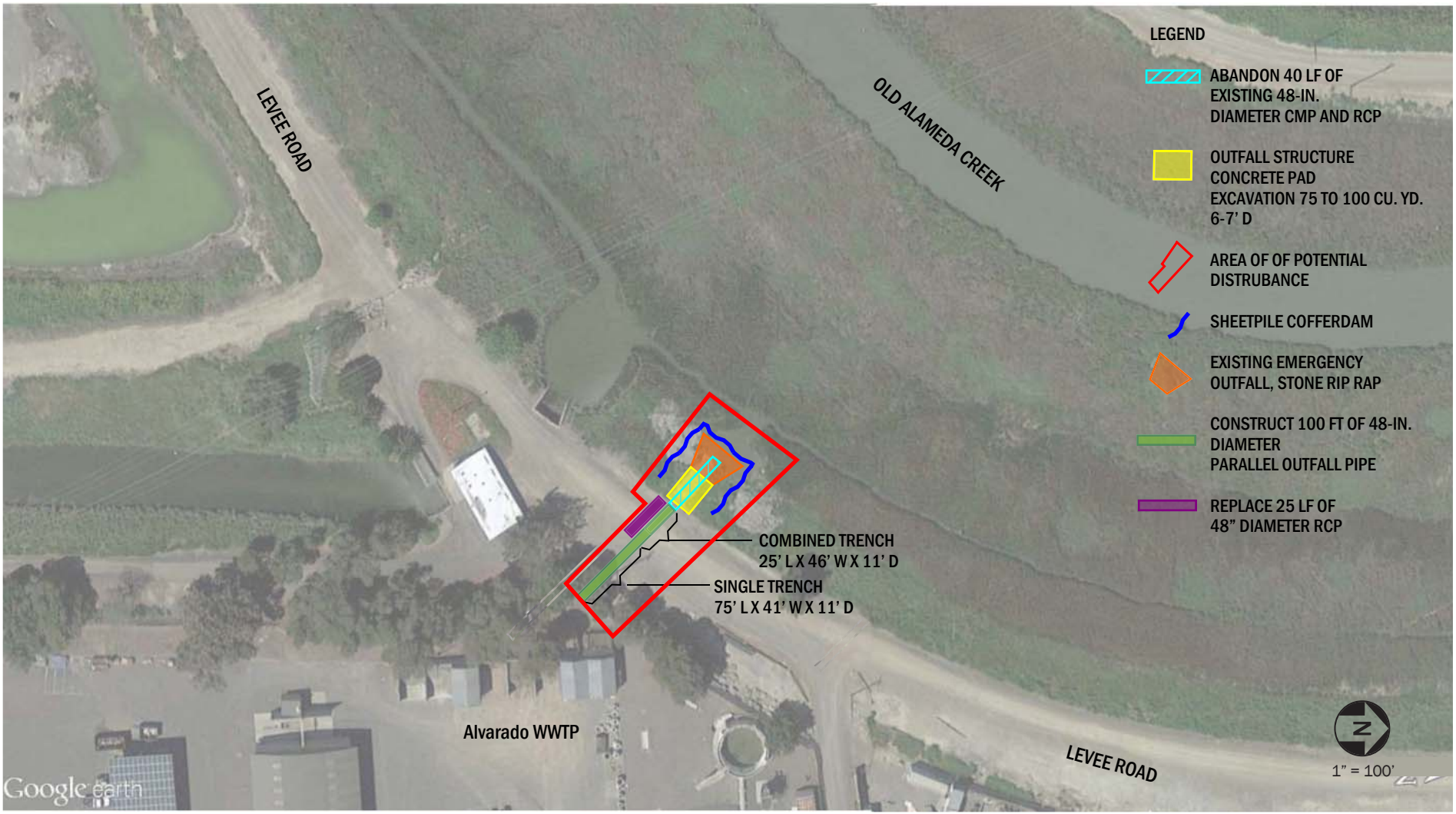
The existing outfall facilities were constructed in the 1960s, with some modifications being made with subsequent expansion and modification of the plant. The emergency outfall consists mainly of reinforced concrete pipe (RCP) that begins at the effluent valve vault where it connects to a 60-inch diameter turn-out from the effluent pipeline. The pipeline then reduces to a 30-inch diameter RCP and later expands to a 36-inch, 42-inch, and finally 48-inch diameter RCP. The 48-inch diameter RCP extends through an ACFC&WCD levee into Old Alameda Creek. A system of valves and piping located in the vault control the flow to the creek.

Project Overview

Figure 3 shows the main Project elements. A preliminary design report has been prepared by Brown and Caldwell.[3] The goal of the Project is to raise the emergency outfall pipe and flap gate above high tide to avoid future maintenance issues. To achieve this, USD proposes to replace a portion of the existing pipe which is located under the access road and within a portion of the banks of Old Alameda Creek at a higher discharge elevation. This will require up to approximately 0.2 acre of ground disturbance, and equipment and materials are expected to be staged within the Project Area boundaries and on the adjacent WWTP site. A new outfall concrete apron structure at the outlet of the raised pipeline is also proposed to be constructed. Visually, the new outfall structure will resemble the adjacent ACFC&WCD outfall (Figure 4). Stabilizing the creek banks around this structure will require the installation of rip rap both above and below the high tide line. A new redundant pipeline, parallel to the existing pipeline, is also proposed. The redundant pipeline will connect to the new outfall structure and will extend approximately 100 linear feet onto the WWTP site where it will be capped for future use.

Source: Scheidegger & Associates, March 2018

Figure 2. Emergency Outfall Location



Source: Brown and Caldwell, March 2018

Figure 3. Main Elements of Emergency Outfall Improvement Project

ACFC & WCD Outfall

Existing USD Emergency Outfall

Figure 4. Comparison of the Existing Emergency Outfall with the ACFC & WCD Outfall.

Project elements include:

- Abandonment of approximately 40 linear feet of 48-inch diameter pipeline by filling with about 20 cubic yards of flowable fill.
- Replacement of approximately 25 linear feet of 48-inch diameter pipeline by open cut. This will require excavation and backfill of approximately 250 cubic yards of soil.
- Construction of approximately 100 linear feet of 48-inch diameter redundant pipeline by open cut. This will require excavation and backfill of approximately 1,000 cubic yards of soil
- Construction of a concrete outlet structure consisting of a slab, headwalls, and wing walls. Total concrete volume of the structure will be approximately 50 cubic yards. There will be approximately 18 inches of aggregate base below the concrete structure.
- Placement of approximately 112 cubic yards of stone rip rap for bank and channel protection at the end of the concrete outlet structure. This will involve the removal of approximately 250 cubic yards of accumulated sediment to facilitate placement of the rip rap on the more solid channel bank that has been covered by sediment.
- Installation of approximately 160 linear feet of temporary sheet pile cofferdam. Residual seepage within the cofferdam will be collected and filtered prior to discharge.

In addition, on the adjacent WWTP site, Project elements include:

- Construction of up to approximately 40 feet of 12-inch diameter pipeline will be constructed. This will require excavation and backfill of approximately 40 cubic yards of soil.
- Construction of an access riser on the existing outfall pipeline. This will require excavation and backfill of approximately 10 cubic yards of soil.

Dewatering from the excavation will be necessary to support construction activities. The Contractor will extract the water and provide appropriate pre-treatment, such as for sediment reduction, with discharge to the Old Alameda Creek Channel if acceptable to the Resource Agencies or discharge to the WWTP drainage system. The Contractor will also conduct their operations pursuant to a USD-approved water pollution control plan detailing all best management practices for protection of water quality. A geotechnical engineer will also provide recommendations for construction, including for shoring and bracing needed for all excavation greater than 5 feet in depth in conformance with California Occupational Safety and Health Administration standards.

Equipment Use

The equipment to be used for construction below the Top of Bank and High Tide Line during Project construction include excavators and cranes. The excavator will be used for digging trenches and rip rap installation. Cranes will be used for installing the sheet piles for the temporary cofferdam. Other equipment on site, but generally located above the Top of Bank, could include dump trucks, loaders, backhoes, and other similar equipment.

Staging Areas/Parking/Storage

While the immediate Project area has limited space for support functions, the adjacent WWTP has the necessary area for staging, parking, and storage of materials (Figure 2). It is anticipated that all excavated soils will either be stockpiled within the WWTP and later re-deposited as construction activities are completed or hauled off-site as excavation proceeds. Any export of materials as well as import of materials and supplies would be minor and haul traffic would use the access roadway shown on Figure 2.

Cleanup and Restoration

The Contractor will, at all times, keep the Project site and WWTP property free from accumulation of waste material or rubbish caused by employees or by the work. Upon completion of construction, the Contractor will remove all surplus materials, temporary structures, rubbish, and waste materials resulting from their work. Restoration will comply with requirements of the encroachment permit from the ACFC&WCD as well as permits from the Resource Agencies which include the U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Wildlife, and the Bay Conservation and Development Commission.

Key Environmental Controls

Key environmental controls for the Project will be contained in the Contract Documents and the permits from ACFC&WCD and the Resource Agencies referenced above. Mitigation measures contained in this Initial Study/Mitigated Negative Declaration will be incorporated in the Contract Documents.

10. Surrounding Land Use

Figure 5 shows the location of the Project area and USD's Alvarado WWTP relative to surrounding land uses. Surrounding land uses include the Eden Landing Ecological Reserve, the Old Alameda Creek Channel, light industrial use, residential, and open space.

Source: Scheidegger & Associates, March 2018

580' 290' 0 580'

Scale in Feet

Figure 5. Land Use Characteristics

The approximately 1-acre Project site is located in the eastern bank of Old Alameda Creek, a channelized ACFC&WCD flood control channel that experiences tidal fluctuations and is bound by levees on either side. The Eden Landing Ecological Reserve includes restored salt ponds, adjacent diked marshes and upland transitional areas which are managed for water birds and tidal marsh species.

The open space area is owned by ACFC&WCD and is managed for flood control purposes. In addition to Old Alameda Creek, ACFC&WCD has a series of flood control channels (G-1, G-2, and G-6) which border the WWTP. Discharge of the drainage to Alameda Creek is via an outfall adjacent to USD's emergency outfall.

The open space area provides a buffer between the treatment facility and residential development further to the east. This is consistent with the Union City's 511 Areas Specific Plan which encompasses most of the WWTP site.[4] As shown in Figure 5, the Project location is about 900 feet from the closest residences.

11. Other Public Agencies Whose Approval is Required

- Encroachment permit – ACFC&WCD
- Section 404 Nationwide Permit – U.S. Army Corps of Engineers
- Section 401 Water Quality Certification – Regional Water Quality Control Board
- Streambed Alteration Agreement – California Department of Fish and Wildlife
- Permit for impacts to Bay and Shoreline Band jurisdiction – Bay Conservation and Development Commission

12. Consultation with Native American Tribes

Notification requests from local Native American tribes pursuant to Public Resources Code Section 21080.3.1, subd. (b) have not been received by USD. However, local Native American contacts were consulted during preparation of the cultural resource assessment included as Appendix C.

13. Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is "Less Than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

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

Chapter 2

DETERMINATION

On the basis of this initial evaluation:

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

☒ I find that although the proposed Project could have a significant effect on the environment, there **WILL NOT** be a significant effect in this case because revisions in the Project have been made or agreed to by the Project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

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

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

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (1) 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.

Raymond Chau
Signature

May 29, 2018
Date

Raymond Chau
Printed Name
Raymond Chau, P.E.
CIP Coach

Chapter 3

DISCUSSION OF ENVIRONMENTAL CHECKLIST

A discussion of the environmental checklist is included below. In general, the format followed includes a discussion of the setting and an impact analysis for each resource category. In some resource categories, control measures are identified to minimize potential impacts. Control measures are procedures known to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and construction/operating experience. Reference and information resources for the checklist are included in Chapter 4. As appropriate, Initial Study (IS) mitigation measures are included to reduce impacts to less than significant levels. The Mitigation Monitoring and Reporting Plan is included in Appendix A.

A. AESTHETICS

SETTING

The Union Sanitary District (USD) Emergency Outfall Improvements Project (Project) site is located along Old Alameda Creek and the western border of the USD Alvarado Wastewater Treatment Plant (WWTP). Immediately surrounding land uses, in addition to the WWTP, include the Eden Landing Ecological Reserve to the north, west, and south. The closest residential land uses to the approximate 1-acre Project site are located about 900 feet to the north.

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
A. <u>AESTHETICS</u>						
Would the Project:						
1) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒	☐	5
2) Substantially damage scenic resources, including, but not limited to, trees, rock, outcroppings, and historic buildings within a state or County scenic highway or County-designated scenic road?	☐	☐	☐	☒	☐	5
3) Substantially degrade the existing visual character or quality of the site and its surroundings that are open to public views?	☐	☐	☐	☒	☐	5

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
4) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	☒	☐	5

No Impacts: Criteria A1- A4

The Project is a short-term construction activity that will not affect a scenic vista or damage scenic resources within a designated scenic roadway. During the construction schedule of up to 11 weeks, some heavy equipment will occupy the Project site and the staging area (Figure 2) will be used to temporarily store construction supplies and excavated soil. While these activities may be viewable from surrounding land uses, USD frequently has ongoing construction projects at the WWTP, residential land uses are distant (900 feet), and the Contract Documents will require the Contractor to use best management practices (BMPs) that address daily housekeeping and final site cleanup.

Figure 4 contains photographs which show the existing Project site and the Alameda County Flood Control & Water Conservation District (ACFC&WCD) outfall structure. The emergency outfall structure will not be viewable from surrounding developed land uses and its construction and operation will have no aesthetic impact relative to Criteria A1-A4.

B. AGRICULTURE AND FOREST RESOURCES

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
B. <u>AGRICULTURE AND FOREST RESOURCES</u>						
Would the Project:						
1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒	☐	5, 6
2) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒	☐	2, 5
3) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒	☐	5
4) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒	☐	5

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
5) 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?	☐	☐	☐	☒	☐	5

No Impacts: Criteria B1-B5

The Project area is classified as Other Land in the California Farmland Mapping and Monitoring Program.[6] Criteria B1 through B5 are not relevant to the Project and no impact would occur.

Mitigation Measures

None required.

C. AIR QUALITY

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
C. <u>AIR QUALITY</u> Would the Project:						
1) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒	☐	5
2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒	☐	5

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒	☐	5
4) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒	☐	5
5) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒	☐	5

No Impacts: Criteria C1-C5

The Project is a small-scale construction activity with construction schedule of up to 11 weeks with no operational air pollutant emissions. Construction emissions will be negligible. The Contract Documents will require the Contractor to water or cover soil stockpiles as needed for control of particulates, cover haul trucks transporting loose materials on-site or off-site, and remove mud or dirt track-out from approach roadways as needed. These measures are consistent with Bay Area Air Quality Management District (BAAQMD) Air Quality Guidelines for construction Projects.[7] It should be noted that with implementation of the Project, air pollutant emissions associated with regular maintenance activities will be avoided resulting in a beneficial impact to air quality. Odor is not an issue associated with the Project. No air quality or odor impacts will occur.

Mitigation Measures

None required.

D. BIOLOGICAL RESOURCES

SETTING

A Biological Resource Assessment (BRA) for the proposed Project was prepared by WRA Environmental Consultants[8] and is included in Appendix B. The reader is referred to this report for a detailed discussion of the setting and impact analysis.

The approximately 1-acre Project site is located on the eastern bank of Old Alameda Creek, partially within the western city limits of Union City (Figure 2). The surrounding landscape

is dominated by the Eden Landing Ecological Reserve, which includes restored salt ponds, adjacent diked marshes, upland transitional areas, and Old Alameda Creek, a channelized ACFC&WCD flood control channel that experiences tidal fluctuations and is bound by levees on either side. The Reserve is managed for water birds and tidal marsh species. The Project site is located partially on USD property, and developed lands of the USD Alvarado WWTP borders the site to the east. The Project area does not overlap with any habitat conservation plan areas; however, a portion of the Project area does overlap with designated Critical Habitat for green sturgeon (*Acipsenser medirostrisI*).

The overall Project site is dominated by a developed access road, which is located between the southeastern bank of Old Alameda Creek and the Alvarado WWTP. The upper elevations of the creek banks along the road support ruderal, non-native herbaceous vegetation that transitions downslope into emergent brackish marsh and open water. The existing outfall structure to be replaced crosses under the existing access road and empties out into open water within the creek. The outfall discharge point is located below the high tide line and is submerged for portions of the day during high tide cycles. To maintain its function of providing an emergency discharge point into the creek, the outfall area requires maintenance several times each year to clear sediment buildup. Immediately west of the outfall line, there is a ramp from the access road to the creek to provide equipment access to the outfall for maintenance. Further west, an ACFC&WCD outfall structure also discharges water into the creek.

Biological Communities. Table 1 lists the area of each of the five biological community types observed in the Project area. Their specific locations are identified in Appendix B. Sensitive biological communities include tidal brackish marsh and open waters of Old Alameda Creek. Non-sensitive biological communities include developed land, landscape trees, and ruderal non-native grassland.

Table 1. Biological Communities within the Project Area.

Biological Community	Acreage
Sensitive	
Coastal Brackish Marsh	0.33
Open Water	0.11
Non-Sensitive	
Developed/Bare Ground	0.52
Landscape Trees	0.10
Ruderal Non-native Grassland	0.14
Total	1.20

Source: WRA, reference 8 and Appendix B.

Sensitive biological communities are defined as those communities that are given special protection under the California Environmental Quality Act (CEQA) and other applicable federal, state and local laws, regulations, and ordinances. Non-sensitive biological communities are those communities that are not afforded special protection under CEQA or other laws, regulations, and

ordinances. However, these communities may still provide suitable habitat for some special-status plant or wildlife species.

Special-Status Species. Special-status species are plant and wildlife species that are protected under CEQA and state and federal environmental laws. The BRA identifies 51 special-status plant species documented to occur in the vicinity of the Project area, but none were observed in the site visit and none are expected to occur within the Project area. Therefore, no avoidance or mitigation measures are required.

Of the 61 special-status wildlife species known to occur in the vicinity of the Project area, the BRA concluded eight have the potential to occur in the Project area. These include the following:

- Salt marsh harvest mouse (SMHM)
- Salt marsh wandering shrew (SMWS)
- Northern harrier
- White-tailed kite
- California Ridgway's (clapper) rail (CRR)
- California black rail (CBR)
- Short-eared owl
- San Francisco common yellowthroat

The BRA also addressed the federally listed green sturgeon and Central California Coast steelhead as wildlife species. Although they are unlikely to occur within the Project area, they are included in this assessment because the National Marine Fisheries Service has developed standard avoidance measures for avoiding impacts to these species throughout most tidal waters directly connected to the Bay.

IMPACT ANALYSIS

Control Measures Incorporated by USD

D1. Erosion control measures will be utilized throughout all phases of operation where sediment runoff from exposed slopes threatens to enter all waters of the U.S. At no time will silt laden runoff be allowed to enter the channel or directed to where it may enter the stream. Erosion control structures will be monitored for effectiveness and will be repaired or replaced as needed. Appropriate erosion control measures will be installed around any stockpiles of soil or other materials which could be mobilized by rainfall or runoff.

D2. No fueling, cleaning, or maintenance of vehicles or equipment will take place within any areas where an accidental discharge to Old Alameda Creek may occur.

D3. All equipment including excavators, trucks, hand tools, etc., that may have come in contact with invasive plants or the seeds of these plants will be carefully cleaned before arriving

on the site and will also be carefully cleaned before removal from the site to prevent spread of these plants.

D4. Construction disturbance or removal of vegetation will be restricted to the minimum footprint necessary to complete the work. The work area will be delineated where necessary with orange construction fencing to minimize impacts to habitat beyond the work limit. Project activities will avoid impacts to wetland and riparian vegetation to the greatest extent possible.

D5. Staging and storage areas for equipment, materials, fuels, lubricants and solvents, will be located outside of the stream channel banks and outside of seasonal wetlands.

D6. Stationary equipment such as motors, pumps, and generators, located adjacent to aquatic features will be positioned over drip pans. Stationary heavy equipment will have suitable containment to handle a spill or leak. All activities performed near aquatic features will have absorbent materials designated for spill containment and cleanup activities on-site for use in an accidental spill.

D7. Any equipment or vehicles operated adjacent to aquatic features will be checked and maintained daily to prevent leaks of materials that could be deleterious to wildlife or habitat.

D8. Stockpiles of soil or other materials that can be blown by wind will be covered when not in active use. All trucks hauling soil, sand, and other loose materials will be covered.

D9. No other debris, rubbish, creosote-treatment materials or wastes will be allowed to enter into or be placed where they may be washed by rainfall or runoff into the aquatic features. All such debris and waste will be picked up daily and will be properly disposed of at an appropriate facility.

D10. Environmental awareness training program shall be conducted for all crews working on the site to include education on sensitive resources such as protected wildlife with the potential to occur within the Project Area, water quality, and environmental protection measures.

D11. Permittee will remove all temporary flagging, fencing, and/or barriers from the Project site and vicinity of the channel upon completion of project activities.

D12. Temporary sheetpile cofferdams will placed around construction area, and residual seepage within the cofferdam will be collected and filtered prior to discharge.

D13. Areas of ground disturbance will be revegetated using an appropriate erosion control seed mix (applicable to both sensitive and non-sensitive habitats) or will be covered with rock,

wood chips, or other suitable erosion control materials as appropriate (applicable to non-sensitive habitats only).

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Information Sources
D. <u>BIOLOGICAL RESOURCES</u>					
Would the Project:					
1) 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 & Game or U.S. Fish and Wildlife Services?	☐	☒	☐	☐	8
2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐	8
3) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐	8
4) 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?	☐	☐	☒	☐	8
5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐	8
6) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐	8

Less than Significant Impacts: Criteria D4, D6

Movement of Fish and Wildlife Species: Criterion D4. No large structure or substantial changes to the accessibility of the area for migrating wildlife will result from the Project which is a short-term construction activity. The impact to wildlife migratory corridors is less than significant.

Habitat Conservation Plans (Criterion D6). The Project is not located within a habitat conservation plan area, nor does it conflict with any other local, regional or state conservation plan. Although the Project area is partially located within mapped critical habitat for green sturgeon, potential impacts would be temporary in nature and would not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. Completing the Project would result in less frequent maintenance, and thus, less potential disturbance in the future. The impact to critical habitat is less than significant.

Less than Significant with Mitigation Incorporated: Criteria D1-D3, D5

Criteria D1-D3 address impacts to special-status species and sensitive natural communities while Criterion D5 addresses conflicts with local policies or ordinances. Earlier in this section, a series of Control Measures (D1-D13) were listed which will be included in the Contract Documents. These measures are general in nature and when combined with the species – and habitat-specific mitigation measures provided in the following discussion will reduce construction-related impacts to special-status species and sensitive commodities to less than significant levels.

Special-Status Species (Criterion D1). Of the special-status plant species documented from the vicinity of the Project area, none have potential to occur within the Project impact area. Vegetated portions of the impact area are extremely limited in size, and none of the rare plant species known from the region were observed within the Project impact area, despite being identifiable in and outside their blooming periods. Because no impacts to special-status plant species are anticipated as a result of Project construction no impacts are anticipated and no further actions are recommended for special-status plants.

Of the special-status wildlife species documented from the vicinity of the Project area, only eight have potential to occur within the Project footprint: SMHM, SMWS, northern harrier, white-tailed kite, short-eared owl, CRR, CBR, and San Francisco common yellowthroat. The CRR and CBR are unlikely to occur within the Project impact area due to lack of suitable cover, but they may still be impacted directly by the Project activities through noise and visual disturbance. Additionally, although listed fish species are unlikely to occur within the Project impact area, it is recommended that standard avoidance measures be incorporated into the Project plan to adhere to Bay-wide standards for in-water work and to avoid NMFS consultation for these

species. Impacts avoidance and minimization measures for special-status wildlife species are discussed below.

Impact BIO-1: The SMHM and SMWS could be impacted through vegetation removal, entrapment in excavations or staged equipment, and vehicle or equipment strikes.

Mitigation Measure BIO-1a: Prior to the initiation of construction, the biological monitor shall provide an endangered species training program to all personnel involved in Project construction. At a minimum, the employee education program shall consist of a brief presentation by persons knowledgeable about the biology and legislative protection of protected species with potential to occur in or adjacent to the Project area, to explain concerns to contractors, their employees, and agency personnel involved with implementation of the Project. The program shall include the following: a description of such species and their habitat needs, any reports of occurrences in the action area, an explanation of the status of these species and their protection under state and federal legislation, and a list of measures being taken to reduce impacts to protected species during the work. Fact sheets containing this information shall be provided to the Project foreman.

Mitigation Measure BIO-1b: Prior to ground disturbance, all ruderal non-native grassland and coastal brackish marsh shall be carefully removed from the impact footprint under the supervision of a qualified biologist. The biologist will first conduct a thorough nest search within vegetation to be removed. If active small mammal nests with potential to be SMHM or SMWS nests are observed, a 50-foot buffer will be established around the nest until the biologist has determined that the young are independent of the nest. Vegetation will then be removed using only hand tools or hand-operated power tools to carefully remove vegetation down to bare ground.

Mitigation Measure BIO-1c: The access road within the Project area is used by USD and the AFC&WCD, and thus the installation of effective wildlife exclusion fencing in the Project area has low feasibility. To prevent wildlife entrapment, equipment and materials shall be staged in developed areas within the USD WWTP; they shall not be staged adjacent to Old Alameda Creek where they could provide cover for small mammals that normally reside in the adjacent vegetation. Alternatively, exclusion fencing may be installed along the top of bank of Old Alameda Creek for 200 feet in either direction from the center of the Project area, and the fencing shall be inspected weekly by the qualified biologist. Exclusion fencing may double as erosion control as described in Mitigation Measure BIO-5b.

Mitigation Measure BIO-1d: A qualified biologist will be present for initial ground disturbance within the banks of Old Alameda Creek. Following initial ground disturbance, the biologist will monitor on an as-needed basis for any new ground breaking within the banks of the creek.

Mitigation Measure BIO-1e: If excavations or trenches are not backfilled on the same day as excavation, they shall either be covered so as to prevent small mammals from falling in, or they shall be provided with exit ramps suitable for small mammals to escape on their own.

Mitigation Measure BIO-1f: Work hours shall be limited to half an hour after sunrise to half an hour prior to sunset. Night work shall be avoided to the maximum extent feasible.

Mitigation Measure BIO-1g: If any mouse or shrew is observed at any time during construction, work shall not be initiated or shall be stopped immediately until the animal leaves the vicinity of the work area on its own volition. The Project biologist shall direct the contractor on how to proceed accordingly. Neither the biologist nor any other persons at the site shall pursue, capture, handle or harass any potential protected species observed.

Level of Significance after Mitigation: Less than Significant

Impact BIO-2: Noise and other disturbances resulting from the construction-related activities could disrupt CRR and CBR nesting and breeding activity in the adjacent marsh.

Mitigation Measure BIO-2a: Construction work shall be limited to the period between September 1 and January 31 to avoid the rail nesting season. If construction work is proposed after January 31 or prior to September 1, protocol-level surveys for rails shall be conducted to determine the extent and location of nesting rails.

The methodology of this survey effort was developed utilizing the survey protocol for CRR published by the U.S. Fish and Wildlife Service (USFWS 2015). Three listening stations shall be utilized to cover the area of potential rail habitat within 700 feet of the proposed work. Four surveys shall be conducted, with the first beginning before February 1. All surveys shall be conducted no less than 14 days apart from each other.

If rail activity centers are identified, a suitable buffer (700 feet for CRR; CBR buffers vary) shall be established and maintained around the activity center until September 1. If no rail nesting activity is observed during protocol-level surveys during a given year, construction may proceed adjacent to potential nesting habitat during the breeding season of the same year. Surveys are typically finalized by the beginning of April and results accepted by the USFWS by the end of April, in a given year. The USFWS typically requires receipt and confirmation of survey results prior to authorizing work during the rail breeding season. Additionally, Mitigation Measure BIO-1a shall be implemented to avoid impacts to these species.

Level of Significance after Mitigation: Less than Significant

Impact BIO-3: Project activities including vegetation clearing and earth work have potential to directly impact nests of common and special-status avian species.

Mitigation Measure BIO-3a: No surveys or other avoidance measures for nesting bird species are necessary for Project activities conducted during the non-breeding season (i.e., between September 1 and January 31). For any vegetation removal and/or ground-disturbing activities that are proposed to occur during the avian breeding season (February 1 through August 31), nesting surveys shall be conducted. Specifically, pre-construction surveys shall be conducted within 14 days of ground disturbance to avoid disturbance to active nests, eggs, and/or young of native birds. It is also recommended that any trees, shrubs, or grasses in or adjacent to the Project area that are proposed for removal and that could be used as avian nesting sites be removed during the non-breeding season (September 1 through February 1). Surveys can be used to detect the nests of special-status as well as non-special-status birds. An exclusion zone shall be established around any active nests of any native avian species found in the Project area until a qualified biologist has determined that all the young have fledged. Buffer zone distances differ depending on species, location, and placement of nest.

Level of Significance after Mitigation: Less than Significant

Impact BIO-4: In-water work has extremely limited potential to impact green sturgeon and Central California Coast steelhead fish species through increased turbidity and situation that could potentially stress respiratory function in fish. It may also temporarily impact an extremely limited area of potential rearing habitat during construction. Permanent impacts to the creek banks and mapped critical habitat from installation of rip rap and the new outfall structure are anticipated to be negligible, particularly as listed fish are unlikely to occur in the Project footprint.

Mitigation Measure BIO-4a: Impacts to these species can be avoided by scheduling Project activities during the work windows established by National Marine Fisheries Service (NMFS) for Bay dredging work. In-water work activities shall occur between June 1 and November 30 to avoid impacts to listed fish species, as per NMFS Programmatic Biological Opinion guidance for dredging in the San Francisco Bay. Temporary and permanent impacts to the creek bed and channel shall be minimized.

Mitigation Measure BIO-4b: For in-water work outside this work window (i.e., for in-water work that occurs between December 1 and May 31, a coffer dam as noted above shall be installed at low tide with the oversight from a qualified biologist to prevent or minimize increases in turbidity during in-water work. If any standing water remains inside the Project area within the coffer dam, the biologist will dip net the area to ensure that no fish have been trapped within the coffer dam prior to dewatering. If listed fish species are observed within the coffer dam area, NMFS shall be contacted immediately and the coffer dam carefully opened to allow the fish to escape.

Level of Significance after Mitigation: Less than Significant

Sensitive Natural Communities and Wetlands (Criteria D2, D3). The proposed Project was designed to minimize impacts to sensitive biological communities. However, limited areas of temporary and permanent impacts to sensitive biological communities, including coastal brackish marsh and open water, are anticipated. Of the overall impact area within sensitive biological communities, up to approximately 0.022 acre of impact is slated to occur below the high tide line within potential U.S. Army Corps of Engineers (Corps) Section 404 jurisdiction, and approximately 0.016 acre may occur to Corps Section 10 jurisdictional areas. Additionally, up to 0.031 acre of impacts would occur below the top of the creek's southern bank within potential California Department of Fish and Wildlife (CDFW) and Regional Water Quality Control Board (RWQCB) jurisdiction. Impacts may occur to up to 0.0218 acre of Bay Conservation and Development Commission (BCDC) Bay lands and 0.0535 acre of Shoreline Band. Potential impacts and mitigation measures to avoid impacts to these sensitive natural communities are described below.

Impact BIO-5: Construction activities within coastal brackish marsh and open water are anticipated to result in temporary disturbance during construction. Additionally, the installation of a new outfall structure and rip rap to stabilize the bank will result in permanent fill in wetland and non-wetland water features potentially under the jurisdiction of the Corps, BCDC, RWQCB and CDFW. Ground disturbance adjacent to Old Alameda Creek may also result in unintentional fill or discharge into wetlands or non-wetland waters. Project activities within these sensitive areas would likely require permits from the Corps, BCDC, RWQCB, and CDFW.

Mitigation Measure BIO-5a: Impacts to wetlands and waters of the U.S. and State typically require a Corps Section 404 Individual or Nationwide Permit and a RWQCB Section 401 Water Quality Certification. Additionally, impacts below the top of bank of Old Alameda Creek may require a 1602 Lake and Streambed Alteration Agreement from CDFW. The BCDC may also require a new permit or update to an existing permit for impacts to Bay and Shoreline Band jurisdiction.

Mitigation Measure BIO-5b: Best management practices shall be used to lessen potential impacts to sensitive habitats. This includes the use of silt fencing, wattles, and other appropriate stormwater pollution prevention measures. For in-water work, a coffer dam or similar shall be installed at low tide with oversight from a qualified biologist to prevent or minimize increases in turbidity during work in open water. Implementation of the proposed Project will also result in much less frequent maintenance than is currently required, and reducing maintenance-related disturbance will benefit the habitat and associated species in this part of the Creek.

Level of Significance after Mitigation: Less than Significant

Local Policies and Ordinances (Criterion D5). Several planted non-native landscaped trees (Australian blackwood and Monterey Pine) are located along the boundary between the Project area access road and the Alvarado WWTP. Title 12, Chapter 12.16 of the City of Union City Municipal Code provides requirements for protection of any tree being in or on any street, park, or public place within the city.

Impact BIO-6. If necessary for the Contractor, landscape trees within the Project area may be trimmed or removed to accommodate heavy machinery or excavation for pipeline placement.

Mitigation Measure BIO-6a: To modify or remove any tree on public lands, the Contractor shall apply to the City of Union City Director of Public Works for a permit. The Director may require an inspection and will issue or refuse to issue the permit with appropriate conditions.

Level of Significance after Mitigation: Less than Significant

E. CULTURAL RESOURCES

SETTING

A Phase I Cultural Resources Evaluation for the proposed Project was prepared by Archeo-Tec, Consulting Archaeologists[9] and is included as Appendix C. The reader is referred to this report for a detailed discussion of the setting and impact analysis.

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
E. <u>CULTURAL RESOURCES</u>						
Would the Project:						
1) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒	☐	9
2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒	☐	9

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
3) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature of paleontological or cultural value?	☐	☐	☐	☒	☐	5
4) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐	☐	9

No Impacts: Criteria E1-E3

Fill exists throughout the Alvarado WWTP and adjoining areas, and there is a high level of soil disturbance in and around the Project site which contains recently deposited sediments that are periodically removed. No impacts relative to Criteria E1-E3 would occur.

Less than Significant with Mitigation Incorporated: Criterion E4

Criterion E4 addresses the possibility of human remains being encountered during construction activities. Although extremely unlikely, fill or dredged remains could contain disturbed or redeposited human remains. This is a potentially significant adverse impact.

Mitigation Measures

To mitigate Criterion E4 impacts to less than significant levels, the following measures shall be required:

ARCH 1: An archaeologist shall be retained to prepare an archaeological "Alert Sheet" which will be distributed to the construction crew. A brief, on-site education session with the construction crew shall be conducted.

ARCH 2: If human remains are encountered, the following procedures will be implemented:

a. Per the stipulations of the California Health and Safety Code Section 7050.5(b), the Alameda County Coroner's Office will be contacted immediately; this will occur whether or not a Most Likely Descendant has already been appointed.

b. The Coroner's Office has two working days in which to examine the identified remains. If the Coroner determines that the remains are Native American, then—if a Most Likely Descendant has not yet been appointed—the Office will notify the Native American Heritage Commission (NAHC) within 24 hours.

c. Following receipt of the Coroner's Office notice, the NAHC will contact a Most Likely Descendant. The Most Likely Descendant then has 48 hours in which they can make recommendations to the project sponsor and consulting archaeologist regarding the treatment and/or re-interment of the human remains and any associated grave goods.

d. Appropriate treatment and disposition of Native American human remains and associated grave goods will be collaboratively determined in consultation between the appointed Most Likely Descendant, the consulting archaeologist, and the landowner or authorized representative. The treatment of human remains may potentially include the preservation, excavation, analysis and/or reburial of those remains and any associated artifacts.

e. If the remains are determined not to be Native American, the Coroner, archaeological research team, and USD will collaboratively develop a procedure for the appropriate study, documentation, and ultimate disposition of the historic human remains.

F. TRIBAL CULTURAL RESOURCES

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
F. <u>TRIBAL CULTURAL RESOURCES</u> Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe and that is:						
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	☐	☐	☐	☒	☐	5, 9

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
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 Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒	☐	5, 9

No Impacts: Criteria F1, F2.

Based on the Phase I Cultural Resources Evaluation discussed in Section E, no tribal cultural resources are known to exist within the Project area. Construction activities will occur in a disturbed area. Mitigation measures (ARCH 1 and ARCH 2) provide protocol for accidental discovery of human remains during construction. No impact for a tribal cultural resource will occur.

G. GEOLOGY AND SOILS

SETTING

A Geotechnical Study has been prepared for the Project by Fugro.[10] Relevant information is summarized below.

Site Geology and Seismicity

The Project site is underlain by historical levee fills in an area which was improved in the 1950s. The levee fills were most likely compacted during original construction but the details are unknown. Below the manmade levee fills, the site is likely underlain by both Holocene alluvial fan levee deposits and Holocene San Francisco Young Bay Mud.

The Project site is located in the seismically active San Francisco Bay Area. The site is not located within an Alquist-Priolo Earthquake Fault Zone and no active faults are known to pass through the Project site. The closest active fault to the site is the Hayward-Rodgers Creek Fault located about 4 miles to the northeast.

The primary geologic hazards relevant to the proposed Project include strong seismic ground shaking, liquefaction, and lateral spreading. Liquefaction refers to the sudden, temporary loss of soil strength during strong ground shaking. The Project site is located in a liquefaction

seismic hazard zone. Lateral spreading occurs when soils liquefy during an earthquake event and the liquefied soils within the overlying soils move laterally to unconfined spaces (for example, creek channel banks), which causes significant horizontal ground displacements. The Geotechnical Study concluded that construction of the Project is feasible from a geotechnical standpoint provided appropriate controls are utilized.

Groundwater

The Project includes deep excavations of up to 11 feet deep for various improvements as shown in Figure 3. Based on data from boreholes drilled for the Geotechnical Study, groundwater was encountered at a depth of about 12 feet in one borehole, while groundwater levels have also been reported at depths of about 12.0 to 13.4 feet by others. While groundwater may not be encountered during Project construction, the Geotechnical Study notes that fluctuations in the groundwater level could occur due to tidal elevations in the bay, change in seasons, variations in rainfall, and other factors. Thus, groundwater may need to be managed during construction.

IMPACT ANALYSIS

Control Measures Incorporated by USD

G1. Incorporate the recommendations of the Project Geotechnical Study for design, construction, and long-term performance into the Contract Documents for the Project.

G2. Have a geotechnical engineer review the final Project plans and specifications prior to construction to verify that geotechnical aspects of the Project are consistent with the intent of the recommendations included in the Project Geotechnical Study.

G3. Have a geotechnical engineer review geotechnical-related Contractor submittals during construction (e.g., shoring, dewatering, ground improvement, backfill materials, etc.).

G4. Have a geotechnical engineer perform periodic site inspections during the construction to observe and document subsurface conditions encountered by the Contractor with respect to the subsurface conditions described in the Project Geotechnical Study.

G5. The Contractor will submit to USD, if applicable, a copy of their annual trench and/or excavation permit issued by the California Occupational Safety and Health Administration (Cal/OSHA).

G6. In accordance with the provisions in Section 6705 of the Labor Code, the Contractor shall submit in advance of excavation of any trench or trenches 5 feet or more in depth, a detailed plan in conformance with the Project Geotechnical Study showing the design of shoring, bracing, sloping and dewatering, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. Any excavation dewatering of more than 1 foot below groundwater level must

be contained within relatively impermeable shoring to avoid settlement outside the excavation. If such plans vary from the shoring system standards set forth in the Construction Safety Orders of the Division of Industrial Safety in Title 8, Subchapter 4, Article 6, California Code of Regulations (CCR), the plans shall be prepared and signed by a California registered civil or structural engineer. Reconstruction of the levee shall be performed in accordance with appropriate Corps and ACFC&WCD requirements.

G7. Contractor shall prepare a Water Pollution Control Plan (WPCP) for USD approval. The WPCP shall include measures to be implemented for control of erosion and to prevent the discharge of contaminated stormwater runoff and other sources of pollutants from the job site and otherwise impacting any sensitive communities or special-status species. The WPCP shall include Control Measures D1-D13, appropriate requirements of the BAAQMD as discussed in Section C, recommendations of the Geotechnical Study, and requirements contained in the Resource Agency permits for this Project.

G8. Imported soil shall comply with Project specifications which define the minimum geotechnical properties and analytical quality characteristics that must be met for use of fill material from off-site borrow sources. All imported fills shall not contain environmental containments or debris and shall be non-corrosive.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
G. <u>GEOLOGY AND SOILS</u>						
Would the Project:						
1) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:						
a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒	☐	5, 10
b) Strong seismic ground shaking?	☐	☐	☒	☐	☐	5, 10
c) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐	☐	5, 10

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
d) Landslides?	☐	☐	☐	☒	☐	5
2) Result in substantial soil erosion, siltation, changes in topography and the loss of topsoil or unstable soil conditions from excavation, grading or fill?	☐	☐	☒	☐	☐	5, 10
3) 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?	☐	☐	☒	☐	☐	5, 10
4) Be located on expansive soil, as defined in Table 16-I of the Uniform Building Code (2001), creating substantial risks to life or property?	☐	☐	☐	☒	☐	5
5) 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?	☐	☐	☐	☒	☐	5
6) Result in substantial soil degradation or contamination?	☐	☐	☒	☐	☐	5, 10

No Impacts: Criteria G1(a), G1(d), G4, G5

The Project site is not within an Alquist-Priolo Earthquake Fault Special Studies Zone (Criterion G1(a)) with no potential for landslides (Criterion G1(d)). Expansive soils are not an issue with the Project (Criterion G4) and Criterion G5 relating to soils and alternative wastewater disposal systems is not relevant to the Project.

Less Than Significant Impacts: Criteria G1(b), G1(c), G2, G3, G6

Physical Hazards: Criteria G1(b), G1(c), and G3. These criteria relate to physical hazards the Project may cause or be exposed to during construction and operation. Previous discussion in this section indicated that the Project area has the potential for strong seismic ground shaking and high liquefaction potential. Additionally, Project construction will involve excavation to depth. Strong seismic ground shaking can result in damage to the outfall structures and related improvements. Liquefaction can result in flood failure, lateral spreading, ground movement, settlement, and other related effects.

Control measures, however, have been included in the Project to address these issues. Control Measures G1 through G4 provide for the ongoing involvement of a geotechnical engineer with incorporation of their recommendations into the Project plans and specifications. Controls necessary to address the primary geotechnical considerations for the Project include compliance with provisions of Chapter 16 of the California Building Code; use of prescribed measures for site preparation, subgrade preparation, use of engineered fill materials, fill placement and compaction, and pipe bedding and trench backfill; and use of a structural mat foundation with a "zero net load" approach where the weight of the new infill materials does not exceed the weight of the soils removed. Control Measures G5 and G6 address the Project's excavation activities; compliance with the Labor Code and the need to have an acceptable plan for shoring, bracing, sloping or other provisions necessary to address the hazards of caving of any trench 5 feet or more in depth; other safeguards necessary to minimize the risk of caving; and reconstruction of the levee in compliance with Corps and ACFC&WCD requirements. The Geotechnical Study concluded that construction of the proposed Project is feasible from a geotechnical standpoint provided necessary controls are implemented. Thus, potential impacts related to ground shaking, ground failure, and associated physical hazards are less than significant.

Soil Erosion: Criterion G2. Criterion G2 addresses the potential for soil erosion. Project construction will involve soil excavation to install the new outfall structure and associated piping. Although the construction activities are limited in extent and duration, these activities could still cause sediment and other pollutants to leave the site and enter Old Alameda Creek and surrounding areas and the WWTP drainage system. Control Measure G7 provides for preparation of a WPCP by the Contractor which will contain the necessary temporary construction site BMPs for control of erosion and other sources of pollutants. As a result, potential impacts associated with discharge of contaminated stormwater runoff are less than significant.

Soil Degradation: Criterion G6. Criterion G6 addresses whether the Project will result in substantial soil degradation or contamination. Soil will need to be imported to the job site to provide suitable fill and, if not regulated, could be contaminated, resulting in on-site impacts. To provide for the protection of surface and groundwater quality and public health, Control Measure G8 will require the use of fill material from off-site borrow sources to comply with analytical quality characteristics, as well as minimum geotechnical properties recommended by the Geotechnical Study. The impact is less than significant.

Mitigation Measures

None required.

H. GREENHOUSE GAS EMISSIONS

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
H. GREENHOUSE GAS EMISSIONS						
Would the Project:						
1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒	☐	5
2) Conflict with any applicable plan, policy or regulation of an agency adopted for the purposes of reducing the emissions of greenhouse gases?	☐	☐	☐	☒	☐	5

No Impacts: Criteria H1, H2

Sources of greenhouse gas (GHG) emissions include exhaust with such chemicals as carbon dioxide, methane, and nitrous oxide. The Project is a short-term construction activity with a six-week construction schedule with no GHG operational emission sources. Any GHG construction emissions will be negligible with no impact to California Global Warming Solutions Act of 2006 (AB 32) GHG reduction goals, are to the City of Union City's Climate Action Plan GHG reduction goals.[11] It should be noted that with implementation of the Project, GHG gas emissions associated with regular maintenance acts will be avoided, resulting in a beneficial impact.

I. HAZARDS AND HAZARDOUS MATERIALS

SETTING

This resource category addresses health and safety issues related to construction of the Project. As the Project site is isolated and removed from areas frequented by the public, health and safety issues apply to construction workers who would be exposed to hazardous materials and physical conditions associated with the presence of construction equipment and excavations. There are a variety of state and federal regulations that apply to construction projects for protection of health and safety. USD also has standard specifications to address these issues based on other successfully completed projects.

Several regulatory agency databases were consulted regarding the presence of hazardous materials release sites within the Project area, including the State Water Resources Control Board

(SWRCB) Geotracker website and the State Department of Toxic Substances Control Cortese List.[12, 13] No sites on the Cortese List are in the Project area. Several permitted underground storage tanks exist just to the east of the Project site.

The Geotracker database identifies the Alvarado WWTP as a program cleanup site owing to the historical occurrence of petroleum hydrocarbon contamination in three areas of the plant site. Remediation activities have been completed by USD and the site continues to be regulated by the Alameda County Water District (ACWD) with requirements for an annual groundwater monitoring program and reports.[14]

IMPACT ANALYSIS

Control Measures Incorporated by USD

I1. Store and handle all hazardous materials in strict accordance with the Material Safety Data Sheets for the products. The storage and handling of potential pollution causing and hazardous materials, including but not necessarily limited to gasoline, oil, and paint, will be in accordance with all local, state, and federal requirements.

I2. When sandblasting, spray painting, spraying insulation or other activities inconveniencing or dangerous to property or the health of employees or the public are in progress, the area of activity shall be enclosed adequately to contain the dust, overspray, or other hazards. In the event there are no permanent enclosures at the area, or such enclosures are incomplete or inadequate, the Contractor shall provide suitable temporary enclosures.

I3. Employ safety provisions conforming to the U.S. Department of Labor (OSHA), Cal/OSHA, and all other applicable federal, state, county and local laws, ordinances, and codes**.** The completed work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items, required by the state and federal industrial authorities and applicable local and national codes. Develop and submit to USD for approval a Health and Safety Plan, which has been reviewed by a certified industrial hygienist, that defines proposed site safety measures and which notifies workers of the presence of detected concentrations of chemicals at the site.

I4. Appoint an employee as safety supervisor who is qualified and authorized to supervise and enforce compliance with the Safety Program. The Safety Program will include an operation plan with emergency contacts.

I5. The Contractor shall construct appropriate safety barriers such as temporary fencing, berms, or similar facilities where required or directed by USD. To minimize disturbance of existing roads and facilities, safety barriers shall allow for normal maintenance and operation of existing facilities and roads as determined by USD or its appointed Representative. The Contractor shall conduct his work so as to ensure the least possible

obstruction to traffic and inconvenience to the general public and the residents in the vicinity of the work and to ensure the protection of persons and property.

I6. Establish, implement, and maintain a written injury prevention program as required by Labor Code Section 6401.7.

I7. In case of an emergency, make all necessary repairs and promptly execute such work when required by the Construction Manager.

I8. Submit for USD review, in accordance with the provisions of Section 6705 of the Labor Code, in advance of excavation of any trench or trenches 5 feet or more in depth, a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of ground caving. See Control Measure G6.

I9. Manhole entry and/or entry to any excavation greater than 5 feet deep shall be in full compliance with the confined space entry requirements of OSHA, Cal/OSHA and USD. The District shall have the authority to require the removal from the project of the foreman and/or superintendent in responsible charge of the work where safety violations occur.

I10. During non-working hours, all trenches shall either be covered with steel plates or protected by fencing to limit access.

I11. If complaints are received relative to unsafe conditions, identify the source, evaluate and implement appropriate corrective measures, and notify the complainant(s) of the results.

I12. If contaminated materials are encountered during excavation, then all work shall comply with the following codes:

a. Code of Federal Regulations (CFR) – Title 40 – Protection of the Environment, Part 761 (40 CFR 761).

b. CCR, Title 22, Social Security, Division 4, Environmental Health, Chapter 30 – Minimum Standards for Management of Hazardous and Extremely Hazardous Wastes.

I13. A Soil Management Plan (SMP) shall be prepared for the planned construction activities due to the presence of arsenic and nickel in exceedance of Environmental Screening Levels (ESLs). The purposes of a SMP are to provide standard construction guidelines for dust control and routine soil handling procedures to mitigate potential exposures due to dust emissions or contact with unsaturated soils containing detected analytes. The SMP should address potential risks to construction workers due to identified contaminant concentrations in soil, and should include provisions for managing soil as part of construction, including but not limited to excavating, stockpiling for waste profile characterization, erosion control measures, transportation of waste, tracking, dust control measures, and personal protective equipment decontamination procedures.

I14. Water from the dewatering operation will be given appropriate pre-treatment, such as sediment reduction, with discharge to the Old Alameda Creek Channel if acceptable to the Resource Agencies, or discharge to the WWTP drainage system.

I15. Imported soil shall comply with Project specifications which define the minimum geotechnical properties and analytical quality characteristics that must be met for use of fill material off off-site borrow sources. All imported fills shall not contain environmental contaminants or debris and shall be non-corrosive.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
I. <u>HAZARDS AND HAZARDOUS MATERIALS</u>						
Would the Project:						
1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐	☐	5
2) 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 or risk explosion?	☐	☐	☐	☒	☐	5
3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒	☐	5
4) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐	☐	12, 13
5) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport, would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☐	☒	☐	5

	RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
6)	For a project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☐	☒	☐	5
7)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒	☐	5
8)	Expose people or structures to significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒	☐	5
9)	Expose people to existing or potential hazards and health hazards other than those set forth above?	☐	☐	☒	☐	☐	5

No Impacts: Criteria I2-I3, I5-I8

The Project will not cause a public health or environmental hazard due to upset conditions (Criterion I2); is not located near a school, public airport or private airstrip (Criteria I3, I5 and I6); would not interfere with an adopted emergency response plan (Criterion I7); and would not expose people or structures to significant risk of loss, injury, or death involving wildland fires (Criterion I8).

Less Than Significant Impacts: Criteria I1, I4, I9

Use of Hazardous Materials: Criterion I1. The use of hazardous materials would be limited during construction activities and would include such traditional materials as gasoline, diesel, oil, paint, resin, and epoxy concrete. Control Measure I1 requires the storage and handling of these materials to be in strict accordance with the Material Safety Data Sheets for the products and adherence to all local, state, and federal requirements. Control Measure I2 addresses sandblasting, spray painting and other similar activities with risk to employees or the public.

Control Measures (I3 through I7) have also been included in the Project to address routine health and safety concerns. These include use of safety provisions conforming to local, state, and federal standards (Control Measure I3), use of a Safety Program and enforcement by a safety supervisor (Control Measure I4), use of safety barriers (Control Measure I5), a written injury

presentation program (Control Measure I6), and prompt emergency repairs (Control Measure I7). The impact is less than significant.

Hazardous Materials Site: Criterion I4. As discussed earlier, the Project is adjacent to the Alvarado WWTP which is a program cleanup site due to the historical occurrence of proteleum hydrocarbon contamination at several locations. Remediation activities have been completed by USD and annual groundwater monitoring is required by the ACWD. The impact relative to Criterion I4 is less than significant.

Safety and Health Hazards: Criterion I9. Criterion I9 relates to other hazards not addressed by Criteria I1 through I8 and is primarily related to the health and safety of workers and the public. The Project involves the use of heavy equipment and excavations of up to 11 feet in depth as described on Figure 3. The Geotechnical Study included drilling of two exploratory borings to depths of about 31 ½ to 51 ½ feet deep with geotechnical and chemical testing of selected samples for a variety of organic chemicals and heavy metals. In general, the constituents analyzed for were either not detected or detectable concentrations were below appropriate standards. Only arsenic and nickel were found to exceed commercial and construction worker Environmental Screening Levels (ESLs). Without suitable controls, the potential for health and safety hazards would exist.

A variety of control measures, however, have been included in the Project to address safety and health hazards. Measures include compliance with the requirements of OSHA and with all applicable local, state, and federal requirements (Control Measure I8 and I9); development and implementation of a safety program (Control Measure I3); controls over open trenches and entry pits to provide for site security and public safety (Control Measure I10); procedures for receiving and responding to unsafe working conditions should any develop (Control Measures I11). In addition, a series of control measures will be included in the Contract Documents to address contaminated soil and groundwater if encountered during excavation and to regulate the quality of imported fill (Control Measures I12-15). Thus, potential safety and health impacts are less than significant.

Mitigation Measures

None required.

J. HYDROLOGY AND WATER QUALITY

SETTING

Figure 5 shows the land use characteristics surrounding the Alvarado WWTP and the Project location. Salt ponds within Eden Landing Ecological Reserve and the Old Alameda Creek Channel are the most prominent hydrologic features in the location. A series of flood control channels also exist in the area to convey drainage from upland areas. The WWTP site is within Zone AE of the 100-year flood plain where the base flood elevation is 10 feet above mean sea level.[15] Groundwater at the site is of poorer quality and has been affected by petroleum-based contaminants from prior use of underground storage tanks. Groundwater was encountered at 12 feet below ground surface in one of the two borings completed for the Geotechnical Study[10].

IMPACT ANALYSIS

Control Measures Incorporated by USD.

I1. Develop and submit for USD review and approval, if necessary, plans of the proposed dewatering system. The dewatering system plans shall be in sufficient detail to indicate power source, sizes of pumps, piping, appurtenances, placement of wells, and the ultimate disposal point for water; and to permit USD to review the overall completeness and effectiveness of the proposed system. The submittal shall also show means of evaluating drawdown in real-time (e.g., piezometers). The control of groundwater shall be such that softening of the bottom of excavations or formation of "quick" conditions or "boils" do not occur. Dewatering systems shall be designed and operated to prevent removal of the natural soils. Sand, silt, and fine-sized soil particles shall be settled out of the water using a Baker tank or other approved method before disposal to the WWTP or to Old Alameda Creek if allowed by the Resource Agencies.

J2. Implement Control Measure G7 for temporary control of erosion and siltation during demolition and construction, and restore affected areas following completion of construction to pre-Project conditions in compliance with Corps and ACFC&WCD requirements. Route any surface drainage to the WWTP drainage system.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
J. <u>HYDROLOGY AND WATER QUALITY</u>						
Would the Project:						
1) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒	☐	5
2) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐	☐	3, 5, 10
3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site?	☐	☐	☐	☒	☐	5
4) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?	☐	☐	☐	☒	☐	5
5) 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?	☐	☐	☐	☒	☐	5, 10
6) Otherwise substantially degrade water quality?	☐	☐	☒	☐	☐	5, 10

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
7) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒	☐	5
8) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒	☐	5
9) Expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐	☐	5

No Impacts: J1, J3, J4, J7, J8

The proposed Project will not violate any water quality standards or waste discharge requirements (Criterion J1), would not substantially alter the existing drainage pattern of the site in a manner that would result in substantial erosion or siltation or the rate or amount of surface runoff (Criteria J3 and J4), does not involve construction of housing (Criterion J7), and does not involve placement of above-ground structures that would impede or redirect flood flows within the 100-year flood plain (Criterion J8).

Less Than Significant Impacts: Criteria J2, J5, J6, J9

Groundwater Depletion: Criterion J2: Dewatering may be required if a high groundwater condition is encountered during construction. Thus, The Contractor would design and implement a groundwater dewatering system (Control Measure I1). Local groundwater is of poor quality and not beneficially used. Use of the dewatering system would be temporary and only affect a small localized area, and would not substantially deplete groundwater supplies. The impact is less than significant.

Water Quality Degradation: Criteria J5 and J6. Soil erosion was discussed in Section G, Criterion G2. Control Measure J2 (G7) provides for preparation and implementation of a WPCP and use of temporary erosion control measures during demolition and construction. Affected areas will be restored per requirements of the Resource Agencies and the ACFC&WCD. Any surface drainage would be managed within the WWTP drainage system and routed to the plant headworks. The Project when completed will be a benefit to local surface water quality as USD's ongoing channel maintenance program will no longer be necessary. Impacts related to water quality degradation are less than significant.

Levee Failure: Criterion J9. The Project involves construction within and adjacent to the levee which borders the emergency outfall. To avoid future risks associated with levee failure, the levee will be designed to Corps and ACFC&WCD requirements (Control Measure J2). The impact is less than significant.

K. LAND USE AND PLANNING

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / IGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
K. LAND USE AND PLANNING						
Would the Project:						
1) Physically divide an established community?	☐	☐	☐	☒	☐	5
2) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐	☐	5
3) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒	☐	☐	5, 8

No Impacts: Criterion K1

The Project will not divide an established community (Criterion K1.

Less Than Significant Impacts: Criteria K2, K3

Land Use Plans, Policies, and Regulations: Criterion K2. The Project does not conflict with any local land use, policies or regulations. As discussed in Section D (Criteria D2 and D3), the Project is potentially within both BCDC Bay and Shoreline Band jurisdiction. USD will obtain the appropriate permit from BCDC and comply with conditions. No public assess trails exist within the Project area, so no impacts to public access potentially regulated by BCDC are anticipated. The Contractor will also obtain any needed authorization from the City of Union City

for impacts to landscape areas within the Project area and comply with conditions (Criterion D5). Impacts relative to Criterion K2 are less than significant.

Habitat or Community Conservation Plan: Criterion K3: The Project is not located within a habitat conservation plan area, nor does it conflict with any other local, regional, or state conservation plan. Although the Project area is partially located within mapped critical habitat for green sturgeon, potential impacts would be temporary in nature and would not adversely modify critical habitat (Criterion D6). Thus, the impact relative to Criterion K3 is less than significant.

Mitigation Measures

None required.

L. MINERAL RESOURCES

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
L. MINERAL RESOURCES						
Would the Project:						
1) 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?	☐	☐	☐	☒	☐	5
2) 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?	☐	☐	☐	☒	☐	5

No Impacts: Criteria L1, L2

The proposed Project includes excavation activities within a highly disturbed area and would not impact known mineral resources.

Mitigation Measures

None required.

M. NOISE

SETTING

Figure 5 shows the land uses surrounding the Alvarado WWTP and the Project location. The closest noise-sensitive residential land use is about 1,300 feet east from where proposed Project activities will occur. USD's existing Conditional Use Permit (UP-5-95) with the City of Union City limits construction activity at the WWTP during the following hours:

Monday through Friday	8:00 a.m. to 8:00 p.m.
Saturday	9:00 a.m. to 8:00 p.m.
Sundays and holidays	10:00 a.m. to 6:00 p.m.

Any construction activity occurring outside of these hours would need to meet the requirements of the City's Noise Ordinance. Construction noise limitations would include the following:[16]

A. No individual piece of equipment shall produce a noise level exceeding 83 decibels (dBA) at a distance of 25 feet. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to 25 feet from the equipment as possible.

B. The noise level at any point outside the property plane of the project shall not exceed 86 dBA.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
M. <u>NOISE</u>						
Would the Project result in:						
1) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐	☐	5, 16
2) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐	☐	5

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
3) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☐	☒	☐	5
4) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☒	☐	☐	5
5) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒	☐	5
6) For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒	☐	5

No Impacts: Criteria M3, M5, M6

The Project will not have any new operational noise sources (Criterion M3) and is not within the vicinity of an airport or private airstrip (Criteria M5 and M6).

Less Than Significant Impacts: Criteria M1, M2, M4

The Project is a small-scale construction activity that will be completed in about six weeks. The Project area is located along the western border of the WWTP and approximately 900 feet from the closest residence. Work hours would be limited to be within the allowances set by USD's Conditional Use Permit (UP-5-95) and the Contractor would comply with the City's Noise Ordinance if construction needs to occur outside the UP-5-95 work hour allowances. Impacts relative to Criteria M1, M2, and M4 are less than significant.

Mitigation Measures

None required.

N. POPULATION AND HOUSING
IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
N. <u>POPULATION AND HOUSING</u>						
Would the Project:						
1) Induce substantial population growth in an area, either directly (for example, by proposing new homes and business) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒	☐	5
2) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒	☐	5
3) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒	☐	5

No Impacts: Criteria N1-N3

The Project will replace an existing emergency outfall and no impacts relative to Criteria N1-N3 will occur.

Mitigation Measures

None required.

O. PUBLIC SERVICES

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
O. <u>PUBLIC SERVICES</u>						
Would the Project:						
1) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:						
a) Fire protection?	☐	☐	☐	☒	☐	5
b) Police protection?	☐	☐	☐	☒	☐	5
c) Schools?	☐	☐	☐	☒	☐	5
d) Parks?	☐	☐	☐	☒	☐	5
e) Electrical power or natural gas?	☐	☐	☐	☒	☐	5
f) Communication?	☐	☐	☐	☒	☐	5
g) Other public facilities?	☐	☐	☐	☒	☐	5

No Impacts: Criteria O1a-O1g

The proposed Project will have no public service impacts.

Mitigation Measures

None required.

P. RECREATION

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
P. RECREATION						
Would the Project:						
1) 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?	☐	☐	☐	☒	☐	5
2) Include recreational facilities or require the construction of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒	☐	5

No Impacts: Criteria P1, P2

The proposed Project will not increase the use of local parks nor will it involve construction of new facilities.

Mitigation Measures

None required.

Q. TRANSPORTATION/TRAFFIC

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
Q. <u>TRANSPORTATION/TRAFFIC</u>						
Would the Project:						
1) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐	☐	5
2) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐	☐	5
3) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒	☐	5
4) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☐	☒	☐	5
5) Result in inadequate emergency access?	☐	☐	☒	☐	☐	5

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
6) Conflict with adoptive policies, plans or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒	☐	5

No Impacts: Criteria Q3, Q4, Q6

The Project has no issues associated with air traffic patterns (Criterion Q3), will not increase hazards due to a design feature (Criterion Q4), and will not conflict with public transit or bicycle and pedestrian facilities (Criterion Q6).

Less Than Significant Impacts: Criteria Q1, Q2, Q5

Circulation System Performance and Conflicts with Congestion Management Program: Criteria Q1 and Q2. The Project will have a less than significant impact relative to these criteria. The Project is a short-term construction activity that will be completed in 6 to 10 weeks. While the immediate Project area has limited space for support functions, the adjacent WWTP has the necessary area for staging, parking, and storage of materials (Figure 2). It is anticipated that all excavated soils will be stockpiled within the WWTP and later redeposited as construction activities are completed, thus minimizing off-site traffic impacts. Any export of materials as well as worker traffic and import of materials, supplies, and equipment would be minor and haul traffic would use the access roadway shown on Figure 2.

Emergency Access: Criterion Q5. As indicated above, the Project area has limited space available for construction activities and is bordered by a levee road utilized by ACFC&WCD personnel. The potential exists that construction activities and equipment could interfere with roadway use by ACFC&WCD under normal and extreme circumstances. However, USD will be obtaining an encroachment permit from ACFC&WCD which will stipulate requirements for access under all conditions. The impact relative to Criterion Q5 is less than significant.

Mitigation Measures

None required.

R. UTILITIES AND SERVICE SYSTEMS

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
R. <u>UTILITIES AND SERVICE SYSTEMS</u>						
Would the Project:						
1) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒	☐	5
2) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒	☐	5
3) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒	☐	5
4) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒	☐	5
5) 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?	☐	☐	☐	☒	☐	5
6) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	☐	☐	☐	☒	☐	5
7) Comply with federal, state, and local statues and regulations related to solid waste?	☐	☐	☐	☒	☐	5

No Impacts: Criteria R1-R7

The proposed Project has no issues related to wastewater treatment requirements of the RWQCB (Criterion R1), construction of new water or wastewater treatment facilities or stormwater drainage facilities (Criteria R2 and R3), or wastewater treatment capacity (Criterion R5). Any water use during construction would be negligible, would be available from an on-site source, with no impact to local water supplies (Criterion R4). Standard measures in the construction industry are to have any solid waste materials generated during construction recycled to the extent possible with disposal of the remainder at a permitted landfill facility (Criteria R6, R7). No impact will occur.

Mitigation Measures

None required.

S. MANDATORY FINDINGS OF SIGNIFICANCE

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
S. <u>MANDATORY FINDINGS OF SIGNIFICANCE</u>						
1) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐	☐	5, 8, 9

	RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
2)	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 current projects, and the effects of probable future projects)?	☐	☐	☐	☒	☐	5
3)	Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐	☐	5

Criterion R1. The Project will not eliminate important examples of the major periods of California history or prehistory. With the implementation of avoidance and minimization mitigation measures described in Section D and Appendix B, all potential Project-related impacts to sensitive biological resources shall be avoided or reduced to less than significant levels.

Criterion R2. The Project is a short-term construction activity to replace USD's emergency outfall. Potentially significant impacts will be mitigated to less than significant levels. Cumulatively considerable impacts will not occur.

Criterion R3. The Project will have no impacts to surrounding residential land uses located about 900 feet to the east. Construction workers will be at risk due to nature and depth of excavation activities. However, the Contract Documents will contain the necessary safeguards for the protection of the health and safety of workers. The impact is less than significant.

Chapter 4

CHECKLIST AND INFORMATION SOURCES

1. City of Union City General Plan Land Use Map. January 25, 2017.
2. City of Union City Zoning Map. January 20, 2017.
3. Brown and Caldwell. Emergency Outfall Improvements–Preliminary Design. November 9, 2017.
4. Union City 511 Area Specific Plan, approved by City Council of September 14, 1997.
5. Professional judgment and expertise of the environmental specialist preparing this assessment, based upon a review of the Project site and surrounding conditions, and a review of engineering documents.
6. http://www.conservation.ca.gov
7. BAAQMD. CEQA Air Quality Guidelines. May 2017.
8. WRA. Biological Resources Assessment, USD Emergency Outfall Project. September 2017.
9. Archeo-Tec. Phase 1 Cultural Resource Assessment Report for USD Emergency Outfall Project. March 14, 2018.
10. FUGRO. Geotechnical Study, USD Emergency Outfall Improvements. April 11, 2018.
11. City of Union City. Climate Action Plan. November 2010.
12. http://geotracker.swrcb.ca.gov
13. http://www.dtsc.ca.gov/SiteCleanup/CorteseList
14. Brown and Caldwell. Alvarado WWTP Annual Groundwater Monitoring Report. 2017.
15. FEMA. Flood Insurance Rate Map for Union City. Effective August 3, 2009.
16. Union City Noise Ordinance 275-861 (part), 1986.

APPENDIX A

Mitigation Monitoring and Reporting Plan

MITIGATION MONITORING AND REPORTING PLAN

The following mitigation measures shall be implemented to reduce the impact to less than significant levels:

Potential Impact	Mitigation Measure	Responsibility	Action	Completion Date
D. Biological Resources **D1. Impact to Special-Status Species** **BIO-1:** The SMHM and SMWS could be impacted through vegetation removal, entrapment in excavations or staged equipment, and vehicle or equipment strikes.	**BIO-1a:** Prior to the initiation of construction, the biological monitor shall provide an endangered species training program to all personnel involved in Project construction. At a minimum, the employee education program shall consist of a brief presentation by persons knowledgeable about the biology and legislative protection of protected species with potential to occur in or adjacent to the Project area, to explain concerns to contractors, their employees, and agency personnel involved with implementation of the Project. The program shall include the following: a description of such species and their habitat needs, any reports of occurrences in the action area, an explanation of the status of these species and their protection under state and federal legislation, and a list of measures being taken to reduce impacts to protected species during the work. Fact sheets containing this information shall be provided to the Project foreman.	Contractor* USD * hire qualified biologist	Sensitive species training program	Prior to start of construction
	BIO-1b: Prior to ground disturbance, all ruderal non-native grassland and coastal brackish marsh shall be carefully removed from the impact footprint under the supervision of a qualified biologist. The biologist will first conduct a thorough nest search within vegetation to be removed. If active small mammal nests with potential to be SMHM or SMWS nests are observed, a 50-foot buffer will be established around the nest until the biologist has determined that the young are independent of the nest. Vegetation will then be removed using only hand tools or hand-operated power tools to carefully remove vegetation down to bare ground.	Contractor* USD * hire qualified biologist	Survey to clear small mammals and hand removal of marsh vegetation	Prior to ground disturbance

Potential Impact	Mitigation Measure	Responsibility	Action	Completion Date
	BIO-1c: The access road within the Project area is used by USD and the AFC&WCD, and thus the installation of effective wildlife exclusion fencing in the Project area has low feasibility. To prevent wildlife entrapment, equipment and materials shall be staged in developed areas within the USD WWTP; they shall not be staged adjacent to Old Alameda Creek where they could provide cover for small mammals that normally reside in the adjacent vegetation. Alternatively, exclusion fencing may be installed along the top of bank of Old Alameda Creek for 200 feet in either direction from the center of the Project area, and the fencing shall be inspected weekly by the qualified biologist. Exclusion fencing may double as erosion control as described in Mitigation Measure BIO-5b.	USD Contractor	Determine staging area location and install exclusion fencing if the alternate location is chosen	Prior to arrival of equipment and materials.
	BIO-1d: A qualified biologist will be present for initial ground disturbance within the banks of Old Alameda Creek. Following initial ground disturbance, the biologist will monitor on an as-needed basis for any new ground breaking within the banks of the creek.	Contractor* USD * hire qualified biologist	Biologist to monitor initial ground disturbance	Conclusion of all initial ground disturbance
	BIO-1e: If excavations or trenches are not backfilled on the same day as excavation, they shall either be covered so as to prevent small mammals from falling in, or they shall be provided with exit ramps suitable for small mammals to escape on their own.	Contractor USD	Fill or cover excavations or provide means of animal escape	Daily during construction
	BIO-1f: Work hours shall be limited to half an hour after sunrise to half an hour prior to sunset. Night work shall be avoided to the maximum extent feasible.	Contractor USD	Observe work hour restrictions	Daily during construction
	BIO-1g: If any mouse or shrew is observed at any time during construction, work shall not be initiated or shall be stopped immediately until the animal leaves the vicinity of the work area on its own volition. The Project biologist shall direct the contractor on how to proceed accordingly. Neither the biologist nor any other persons at the site shall pursue, capture, handle or harass any potential protected species observed.	Contractor USD	Crew to watch for small mammals, stop work if observed, notify biologist.	Daily during construction

Potential Impact	Mitigation Measure	Responsibility	Action	Completion Date
BIO-2: Noise and other disturbances resulting from the construction-related activities could disrupt CRR and CBR nesting and breeding activity in the adjacent marsh.	**BIO-2a:** Construction work shall be limited to the period between September 1 and January 31 to avoid the rail nesting season. If construction work is proposed after January 31 or prior to September 1, protocol-level surveys for rails shall be conducted to determine the extent and location of nesting rails. The methodology of this survey effort was developed utilizing the survey protocol for CRR published by the U.S. Fish and Wildlife Service (USFWS 2015). Three listening stations shall be utilized to cover the area of potential rail habitat within 700 feet of the proposed work. Four surveys shall be conducted, with the first beginning before February 1. All surveys shall be conducted no less than 14 days apart from each other. If rail activity centers are identified, a suitable buffer (700 feet for CRR; CBR buffers vary) shall be established and maintained around the activity center until September 1. If no rail nesting activity is observed during protocol-level surveys during a given year, construction may proceed adjacent to potential nesting habitat during the breeding season of the same year. Surveys are typically finalized by the beginning of April and results accepted by the USFWS by the end of April, in a given year. The USFWS typically requires receipt and confirmation of survey results prior to authorizing work during the rail breeding season. Additionally, Mitigation Measure BIO-1a shall be implemented to avoid impacts to these species..	USD* Contractor * hire qualified biologist	Determine construction schedule. Conduct rail survey if construction is to begin between January 31 and August 31.	Upon confirmation of survey results by USFWS (usually by late April) if surveys need to be conducted.
BIO-3: Project activities including vegetation clearing and earth work have potential to directly impact nests of common and special-status avian species.	**BIO-3a:** No surveys or other avoidance measures for nesting bird species are necessary for Project activities conducted during the non-breeding season (i.e., between September 1 and January 31). For any vegetation removal and/or ground-disturbing activities that are proposed to occur during the avian breeding season (February 1 through August 31), nesting surveys shall be conducted. Specifically, pre-construction surveys shall be conducted within 14 days of ground disturbance to avoid disturbance to active nests, eggs, and/or young of native birds. It is also recommended that any trees, shrubs, or grasses in or adjacent to the Project area that are proposed for removal and that could be used as avian nesting sites be removed during the non-breeding season (September 1 through February 1). Surveys can be used to detect the nests of special-status as well as non-special-status birds. An exclusion zone shall be established around any active nests of any native avian species found in the Project area until a qualified biologist has determined that all the young have fledged. Buffer zone distances differ	Contractor* USD * hire qualified biologist	Determine construction schedule. Conduct bird nesting survey if construction begins between February 1 and August 31.	Upon conclusion of nesting bird surveys or nests are no longer active.

Potential Impact	Mitigation Measure	Responsibility	Action	Completion Date
	depending on species, location, and placement of nest.			
BIO-4: In-water work has extremely limited potential to impact green sturgeon and Central California Coast steelhead fish species through increased turbidity and situation that could potentially stress respiratory function in fish. It may also temporarily impact an extremely limited area of potential rearing habitat during construction. Permanent impacts to the creek banks and mapped critical habitat from installation of rip rap and the new outfall structure are anticipated to be negligible, particularly as listed fish are unlikely to occur in the Project footprint.	**BIO-4a:** Impacts to these species can be avoided by scheduling Project activities during the work windows established by National Marine Fisheries Service (NMFS) for Bay dredging work. In-water work activities shall occur between June 1 and November 30 to avoid impacts to listed fish species, as per NMFS Programmatic Biological Opinion guidance for dredging in the San Francisco Bay. Temporary and permanent impacts to the creek bed and channel shall be minimized.	Contractor USD	Work only during work window (June 1 to November 30) and minimize creek and channel impacts.	When construction is completed or November 30
	BIO-4b: For in-water work outside this work window (i.e., for in-water work that occurs between December 1 and May 31, a coffer dam as noted above shall be installed at low tide with the oversight from a qualified biologist to prevent or minimize increases in turbidity during in-water work. If any standing water remains inside the Project area within the coffer dam, the biologist will dip net the area to ensure that no fish have been trapped within the coffer dam prior to dewatering. If listed fish species are observed within the coffer dam area, NMFS shall be contacted immediately and the coffer dam carefully opened to allow the fish to escape.	Contractor USD * hire qualified biologist	Determine work window; install coffer dam if construction is between December 1 and May 31	When construction is completed
D2 and D3. Impact to Sensitive Natural Communities and Wetlands **BIO-5:** Construction activities within coastal brackish marsh and open water are anticipated to result in temporary disturbance during construction. Additionally, the installation of a new outfall structure and rip rap to stabilize the bank will result in permanent fill in wetland and non-	**BIO-5a:** Impacts to wetlands and waters of the U.S. and State typically require a Corps Section 404 Individual or Nationwide Permit and a RWQCB Section 401 Water Quality Certification. Additionally, impacts below the top of bank of Old Alameda Creek may require a 1602 Lake and Streambed Alteration Agreement from CDFW. The BCDC may also require a new permit or update to an existing permit for impacts to Bay and Shoreline Band jurisdiction.	USD	Obtain necessary regulatory agency permits and certifications	Prior to start of construction

Potential Impact	Mitigation Measure	Responsibility	Action	Completion Date
wetland water features potentially under the jurisdiction of the Corps, BCDC, RWQCB and CDFW. Ground disturbance adjacent to Old Alameda Creek may also result in unintentional fill or discharge into wetlands or non-wetland waters. Project activities within these sensitive areas would likely require permits from the Corps, BCDC, RWQCB, and CDFW.	**BIO-5b:** Best management practices shall be used to lessen potential impacts to sensitive habitats. This includes the use of silt fencing, wattles, and other appropriate stormwater pollution prevention measures. For in-water work, a coffer dam or similar shall be installed at low tide with oversight from a qualified biologist to prevent or minimize increases in turbidity during work in open water. Implementation of the proposed Project will also result in much less frequent maintenance than is currently required, and reducing maintenance-related disturbance will benefit the habitat and associated species in this part of the Creek.	Contractor* USD * hire qualified biologist for in water work monitoring	Install appropriate erosion control BMPs, coffer dams, or other measures to protect water quality	Daily during construction
D5. Impact to Local Policies and Ordinances **BIO-6.** If necessary for the Contractor, landscape trees within the Project area may be trimmed or removed to accommodate heavy machinery or excavation for pipeline placement.	**BIO-6a:** To modify or remove any tree on public lands, the Contractor shall apply to the City of Union City Director of Public Works for a permit. The Director may require an inspection and will issue or refuse to issue the permit with appropriate conditions.	Contractor USD	Obtain permit for tree removal or modification	Prior to tree removal or modification
E. Cultural Resources **E4. Impact to Disturbed or Redeposited Human Remains**	**ARCH 1:** An archaeologist shall be retained to prepare an archaeological "Alert Sheet" which will be distributed to the construction crew. A brief, on-site education session with the construction crew shall be conducted. **ARCH 2:** If human remains are encountered, the following procedures will be implemented: a. Per the stipulations of the California Health and Safety Code Section 7050.5(b), the Alameda County Coroner's Office will be contacted immediately; this will occur whether or not a Most Likely Descendant has already been appointed.	Contractor* USD * hire qualified archaeologist Contractor USD	Prepare "Alert Sheet," have session Follow requirements of Health and Safety Code	Prior to start of construction During construction

Potential Impact	Mitigation Measure	Responsibility	Action	Completion Date
	b. The Coroner's Office has two working days in which to examine the identified remains. If the Coroner determines that the remains are Native American, then—if a Most Likely Descendant has not yet been appointed—the Office will notify the Native American Heritage Commission (NAHC) within 24 hours. c. Following receipt of the Coroner's Office notice, the NAHC will contact a Most Likely Descendant. The Most Likely Descendant then has 48 hours in which they can make recommendations to the project sponsor and consulting archaeologist regarding the treatment and/or re-interment of the human remains and any associated grave goods. d. Appropriate treatment and disposition of Native American human remains and associated grave goods will be collaboratively determined in consultation between the appointed Most Likely Descendant, the consulting archaeologist, and the landowner or authorized representative. The treatment of human remains may potentially include the preservation, excavation, analysis and/or reburial of those remains and any associated artifacts. e. If the remains are determined not to be Native American, the Coroner, archaeological research team, and USD will collaboratively develop a procedure for the appropriate study, documentation, and ultimate disposition of the historic human remains.			

APPENDIX B

Biological Resource Assessment

Biological Resources Assessment
USD Emergency Outfall Project

ALAMEDA COUNTY
CALIFORNIA

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LIST OF ACRONYMS AND ABBREVIATIONS

BCDC	San Francisco Bay Conservation and Development Commission
CBR	California black rail
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CRR	California Ridgway's rail
ESA	Federal Endangered Species Act
Inventory	CNPS Inventory of Rare and Endangered Plants
MTBA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
Project Area	Emergency Outfall Project Area
Rank	California Rare Plant Rank
RWQCB	Regional Water Quality Control Board
SMHM	Salt marsh harvest mouse
SMWS	Salt marsh wandering shrew
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WRA	WRA, Inc.

EXECUTIVE SUMMARY

Based on the results of the site visit and impacts assessment, the Project is not anticipated to result in significant impacts to sensitive biological communities, special-status plant species, special-status wildlife species, native bird species, or designated Critical Habitat. Two sensitive biological communities were identified within the Project Area. Any potential impacts to sensitive biological communities shall be avoided through the implementation of mitigation measures. Although not a sensitive biological community, landscape trees may require special permissions to trim or remove, if necessary.

No special-status plants were observed during the site visit, and none are expected to occur within the Project Area; accordingly, no avoidance or mitigation measures are required.

The salt marsh harvest mouse, salt marsh wandering shrew, California Ridgway's rail, California black rail and other nesting native birds have potential to be impacted by Project activities in the absence of avoidance and minimization measures. However, impacts will be less than significant with the implementation of suitable avoidance and minimization measures, which include seasonal work windows, biological monitoring, species-specific and breeding bird surveys, and nest buffers where applicable.

With the implementation of the avoidance and minimization measures described herein, all potential Project-related impacts to sensitive biological resources shall be avoided or reduced to less-than-significant levels.

1.0 INTRODUCTION

On April 24, 2017, WRA, Inc. (WRA) performed a field assessment of biological resources within the approximately 1-acre Union Sanitary District (USD) Emergency Outfall Project site (Project Area) along the western boundary of the City of Union City in Alameda County, California (Figure 1). The outfall site is located along Old Alameda Creek. Surrounding land uses include the developed USD treatment plant to the east, and the Eden Landing Ecological Reserve located to the north, west and south.

The purpose of the field work and this report is to provide information on biological resources necessary to complete a review of the Project as may be required under the California Environmental Quality Act (CEQA). The proposed Project is intended to make improvements to the Emergency Outfall to reduce the maintenance activities associated with the Emergency Outfall flap gate and increase the reliability of the Emergency Outfall operation during wet weather events. This report describes the results of the site visit and literature review, which assessed the Project Area for the (1) potential to support special-status species; and (2) presence of other sensitive biological resources protected by local, state, and federal laws and regulations. This report also contains an evaluation of potential impacts to special-status species and sensitive biological resources that may occur as a result of the proposed Project and potential mitigation measures to compensate for those impacts.

A biological resources assessment provides general information on the potential presence of sensitive species and habitats. The biological assessment is not an official protocol-level survey for listed species that may be required for project approval by local, state, or federal agencies. This assessment is based on information available at the time of the study and on site conditions that were observed on the date of the site visit.

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

2.1 Sensitive Biological Communities

Sensitive biological communities include certain habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations such as the Clean Water Act; state regulations such as the Porter-Cologne Act, the CDFW Streambed Alteration Program, and CEQA; or local ordinances or policies such as city or county tree ordinances, Special Habitat Management Areas, and General Plan Elements.

Waters of the United States

The U.S. Army Corps of Engineers (Corps) regulates “Waters of the United States” under Section 404 of the Clean Water Act. Waters of the U.S. are defined in the Code of Federal Regulations (CFR) as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in

Figure 1. Project Area Location Map

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Miles

wra
ENVIRONMENTAL CONSULTANTS

Union Sanitary District Emergency Outfall
Alameda County, California

Map Prepared Date: 7/28/2017
Map Prepared By: pkobylarz
Base Source: Esri Streaming - National Geographic
Data Source(s): WRA

Path: L:\Acad 2000 Files\12000\12045-7\GIS\ArcMap\Location Map2.mxd

the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wet-land hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into Waters of the U.S. generally requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act.

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the Secretary of the Army, acting through the Corps, for any activity that would have an impact on the navigable capacity of waters of the United States (33 U.S.C. 403). The Code of Federal Regulations further clarifies that the construction of any structure below, within, or over any navigable water of the United States would require authorization from the Corps. In tidally influenced areas, the upper limit of "navigable waters" is defined as the elevation of "mean high water" (MHW) (FR Doc 86-25301, 329.12.b).

Waters of the State

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream", which includes streams and rivers, is defined in the California Code of Regulations (CCR) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). "Riparian" is defined as "on, or pertaining to, the banks of a stream." Riparian vegetation is defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

San Francisco Bay and Shoreline

The San Francisco Bay Conservation and Development Commission (BCDC) has regulatory jurisdiction, as defined by the McAteer-Petris Act, over the Bay and its shoreline, which generally consists of the area between the shoreline and a line 100 feet landward of and parallel to the shoreline. Within the Project Area, BCDC has two areas of jurisdiction: San Francisco Bay and the Shoreline Band. Definitions of these areas, as described in the McAteer-Petris Act (PRC Section 66610), are given below.

> **San Francisco Bay:** all areas that are subject to tidal action from the south end of the Bay to the Golden Gate (Point Bonita-Point Lobos) and to the Sacramento River line (a line between Stake Point and Simmons Point, extending northeasterly to the mouth of Marshall Cut), including all sloughs, and specifically, the marshlands lying between mean high tide and five feet above mean sea level; tidelands (land lying between mean high tide and mean low tide); and submerged lands (land lying below mean low tide).
>
> **Shoreline Band:** all territory located between the shoreline of San Francisco Bay as defined above and a line 100 feet landward of and parallel with that line, but excluding any portions of such territory which are included in other areas of BCDC jurisdiction, provided that the Commission may, by resolution, exclude from its area of jurisdiction any area within the shoreline band that it finds and declares is of no regional importance to the Bay.

Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2017). Sensitive plant communities are also identified by CDFW (CDFG 2010). CDFW vegetation alliances are ranked 1 through 5 based on NatureServe's (2010) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or USFWS must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in city or county general plans or ordinances.

Relevant Local Policies, Ordinances, Regulations

Union City Municipal Code provides protection for trees growing on public property in Section 12.16.090. Under this Section, it is unlawful to cut, trim, remove, mutilate, injure or in any way impair the growth of any tree being grown in a public place. To modify or remove any tree on public lands, the applicant needs to apply to the Director of Public Works for a permit. The Director may require an inspection and would issue or refuse to issue the permit.

2.2 Sensitive Special-status Species

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal

Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and those that are formal candidates for listing. In addition, CDFW Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, CDFW California Fully Protected species, USFWS Birds of Conservation Concern, and CDFW special-status invertebrates, are all considered special-status species. Although these aforementioned species generally have no defined legal status, they are given special consideration under CEQA. Bat species are also evaluated for conservation status by the Western Bat Working Group (WBWG), a non-governmental entity; bats named as a "High Priority" or "Medium Priority" species for conservation by the WBWG are typically considered special-status and are considered under CEQA. In addition to regulations for special-status species, most birds in the United States, including non-special-status native species, are protected by the Migratory Bird Treaty Act of 1918 (MBTA) and the CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws, destroying active bird nests, eggs, and/or young is illegal.

Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Rank 3 and Rank 4 species are afforded little or no protection under CEQA, but are included in this analysis for completeness. A description of the CNPS Ranks is provided below in Table 1.

Table 1. Description of CNPS Ranks and Threat Codes

California Rare Plant Ranks (formerly known as CNPS Lists)	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 4	Plants of limited distribution - A watch list
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

Critical Habitat

Critical Habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with Critical Habitat, federal agencies must also ensure that their activities or projects do not adversely modify Critical Habitat to the point that it will no longer aid

in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of Critical Habitat.

3.0 METHODS

On April 24, 2017, WRA Inc. (WRA) conducted a site visit to the Project Area. Prior to the site visit, background literature was reviewed to assess the potential presence of sensitive vegetation types, aquatic communities, and special-status plant and wildlife species. The site was traversed on foot by biologists familiar with the vegetation, aquatic communities, and special-status species known from Alameda County. Site conditions were documented to assess the potential for special-status plant and wildlife to occur within the Project Area. This assessment was based on the quality, presence, and/or absence of habitat elements necessary to support special-status species and sensitive natural communities.

3.1 Biological Communities

Prior to the site visit, the Web Soil Survey for the Project Area (USDA 2017) was examined to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were present in the Project Area. Biological communities present in the Project Area were classified based on existing plant community descriptions described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

3.1.1 Non-sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other state, federal, and local laws, regulations and ordinances. However, these communities may still provide suitable habitat for some special-status plant or wildlife species and are identified or described in Section 4.1.1 below.

3.1.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive biological communities are discussed below.

<u>Wetlands and Waters</u>

The Project Area was surveyed to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, BCDC or CDFW were present. The Section 404 wetlands and waters of the U.S. assessment was based primarily on the presence of wetland plant indicators, which generally demark the High Tide Line. Any potential wetland areas were

identified as areas dominated by plant species with a wetland indicator status[1] of OBL, FACW, or FAC as given on the U.S. Army Corps of Engineers National Wetlands Plant List (Lichvar et al. 2014). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, algal mats, and oxidized root channels, or indirect (secondary) indicators, such as a water table within 2 feet of the soil surface during the dry season. The presence of hydric soils at this location was determined using a soil report for Alameda County, Western Part (USDA 2017).

Section 10 navigable waters of the U.S. were determined based on NOAA tidal benchmark data from the NOAA Tides & Currents website for the Alameda Creek tide station (Station ID: 9414632). Based on this data, correlated to correspond with National Geodetic Vertical Datum (NGVD) 1929 datum, the elevation of MHW was determined to be 3.76 feet NGVD. This elevation was used to determine areas within Corps Section 10 jurisdiction.

Waters of the State potentially regulated by the CDFW and RWQCB were delineated for creek, stream or slough features and included the bed and bank up to the edge of riparian vegetation, or if no riparian vegetation was present, up to the top of the aquatic feature's banks. For this Project, Waters of the State were delineated to the top of bank of Old Alameda Creek.

San Francisco Bay waters potentially under the jurisdiction of BCDC were delineated for tidal waters and wetlands up to 5 feet above mean sea level, which for this Project was 8.14 feet NAVD88. The BCDC Shoreline Band was delineated as 100 feet landward of the edge of potential Bay jurisdiction, excluding areas of permanent development, such as paved roads and buildings on the USD plant site adjacent to the Project site.

Other Sensitive Biological Communities

The Project Area was evaluated for the presence of other sensitive biological communities, including riparian areas, and sensitive plant communities recognized by CDFW. Prior to the site visit, aerial photographs, local soil maps, the *List of Vegetation Alliances* (CDFG 2010), and *A Manual of California Vegetation* (Sawyer et al. 2009) were reviewed to assess the potential for sensitive biological communities to occur in the Project Area. All alliances within the Project Area with a ranking of 1 through 3 were considered sensitive biological communities and mapped. These communities are described in Section 4.1.2 below.

3.2 Special-Status Species

3.2.1 Literature Review

Potential occurrences of special-status species were evaluated by first determining which special-status species occur in the vicinity of the Project Area through a literature and database search. Database searches for known occurrences of special-status species focused on the Newark and 8 surrounding 7.5 minute USGS quadrangles which covered a radius of 5 miles from the Project Area. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Project Area:

[1] OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

- CNDDB records (CDFW 2017)
- USFWS IPaC search (USFWS 2017a)
- USFWS Critical Habitat Portal (USFWS 2017b)
- Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California (USFWS 2013)
- West Coast Fisheries Species Maps & Data (NMFS 2017)
- CNPS Inventory records (CNPS 2017)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "California Bird Species of Special Concern" (Shuford and Gardali 2008)
- eBird records (eBird 2017)
- Alameda County Breeding Bird Atlas (Richmond et al. 2011)
- Updated California Amphibian and Reptile Species of Special Concern in California (UC Davis 2017)
- Aerial Imagery of the Emergency Outfall (Google Earth 2017)
- California Ridgway's Rail Surveys for the San Francisco Estuary Invasive Spartina Project (McBroom 2016)
- Salt marsh harvest mouse database and maps (SFEI 2009)

3.2.2 Site Assessment

A site visit was made to the Project Area to search for suitable habitats that may support special-status species. Habitat conditions observed at the site were used to evaluate the potential for presence of special-status species based on these searches and the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Project Area was then evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. Species is observed on the site or has been recorded (i.e. CDFW, other reports) on the site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity to determine its potential to occur in the Project Area. The site visit does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species; however, if a special-status species is observed during the site visit, its presence will be recorded and discussed.

In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of WRA biologists with experience working with the species and habitats. If necessary, recognized experts in individual species biology were contacted to obtain the most up to date information regarding species biology and ecology.

If a special-status species was observed during the site visit, its presence is recorded and discussed below in Section 4.2. For some species, a site assessment visit at the level conducted for this report may not be sufficient to determine presence or absence of a species to the specifications of regulatory agencies. In these cases, a species may be assumed to be present or further protocol-level special-status species surveys may be necessary. Special-status species for which further protocol-level surveys may be necessary are described in Section 5.0.

4.0 RESULTS

The approximately 1-acre Project site is located on the eastern bank of Old Alameda Creek, partially within the western city limits of Union City. The surrounding landscape is dominated by the Eden Landing Ecological Reserve, which includes restored salt ponds, adjacent diked marshes, upland transitional areas, and Old Alameda Creek, a channelized Alameda Flood Control District flood control channel that experiences tidal fluctuations and is bound by levees on either side. The Reserve is managed for water birds and tidal marsh species. The Project site is located partially on USD property, and developed lands of the USD treatment plant borders the site to the east. The Project Area does not overlap with any habitat conservation plan areas; however, a portion of the Project Area does overlap with designated Critical Habitat for green sturgeon (*Acipsenser medirostris*).

The overall Project site is dominated by a developed access road, which is located between the southeastern bank of Old Alameda Creek and the USD treatment plant. The upper elevations of the creek banks along the road support ruderal, non-native herbaceous vegetation that transitions downslope into emergent brackish marsh and open water. The existing outfall structure to be replaced crosses under the existing access road and empties out into open water within the creek. The outfall discharge point is located below the high tide line and is submerged for portions of the day during high tide cycles. To maintain its function of providing an emergency discharge point into the creek, the outfall area requires maintenance several times each year to clear sediment buildup. Immediately west of the outfall line, there is a ramp from the access road to the creek to provide equipment access to the outfall for maintenance. Further west, an Alameda County Flood Control District outfall structure also discharges water into the creek.

The following sections present the results and discussion of the biological assessment within the Project Area.

4.1 Biological Communities

Table 2 summarizes the area of each biological community type observed in the Project Area. Non-sensitive biological communities in the Project Area included ruderal non-native grassland, developed land, and landscape trees. Sensitive biological communities within the Project Area included the tidal brackish marsh and open waters of Old Alameda Creek. Descriptions for each biological community are contained in the following sections. Biological communities within the Project Area are shown in Figure 2.

Table 2. Biological communities within the Project Area.

Biological Community	Acreage
Sensitive	
Coastal Brackish Marsh	0.33
Open Water	0.11
Developed/Bare Ground	0.52
Landscape Trees	0.10
Ruderal Non-native Grassland	0.14
Total	**1.20**

4.1.1 Non-Sensitive Biological Communities

Ruderal Non-native Grassland

Although not described by Holland (1986), ruderal non-native grassland includes areas that have been partially developed or have been used in the past for agriculture. However, these areas are not currently used for agricultural activities and/or have been allowed to revert to a semi-natural condition. Ruderal herbaceous grassland is typically dominated by a mix of non-native annual grasses and weedy herbaceous species such as summer mustard (*Hirschfeldia incana*) and other mustards (*Brassica* spp.), Italian thistle (*Carduus pycnocephalus*), wild radish (*Raphanus sativus*), bristly ox-tongue (*Helminthotheca [Picris] echioides*), common mallow (*Malva neglecta*), and yellow star thistle (*Centaurea solstitialis*), among others.

This plant community was found on the upper banks of Old Alameda Creek and in the southwest corner of the Project Area. Approximately 0.14 acre of this community were observed in the Project Area. Ruderal grassland within the project area is dominated by wild radish, slender wild oat (*Avena barbata*), and ripgut brome (*Bromus diandrus*), with cheeseweed mallow (*Malva cf. parviflora*), black mustard (*Brassica nigra*), and other weedy, non-native species.

Developed

Approximately 0.52 acre of developed area are located within the Project Area and include the USD treatment plant infrastructure, Alameda County Flood Control and USD outfalls, and access roads. Developed areas also include the area immediately upslope of the USD outfall discharge area, where vegetation has been disturbed by outfall maintenance activities.

Landscape Trees

Several planted landscape trees are located along the boundary between the Project Area access road and the USD treatment plant. All are mature trees, and this community supports little to no ground cover. Tree species include non-native Australian blackwood (*Acacia melanoxylon*), and

Figure 2. Biological Communities
Within the Project Area

N
W E
S

0 25 50 100
Feet

Union Sanitary District Emergency Outfall
Alameda County, California

wra
ENVIRONMENTAL CONSULTANTS

Map Prepared Date: 6/14/2017
Map Prepared By: pkobylarz
Base Source: Esri Streaming - National Geographic
Data Source(s): WRA, CNDDB June 2017

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Monterey pine (*Pinus radiata*), which is not native to the San Francisco Bay Area. Although these trees do not constitute a sensitive natural community, they may be protected under local tree ordinances.

4.1.2 Sensitive Biological Communities

Coastal Brackish Marsh

Holland (1986) describes coastal brackish marsh as dominated by perennial, emergent, herbaceous monocots forming dense cover of one to two meters tall. Coastal brackish marsh is usually found along sheltered inland margins of bays, lagoons, and estuaries and is subject to tidal inundation by saltwater for at least some part of the year. Salinities may vary considerably and may increase at times of high tide or during times of low freshwater input. Characteristic vegetation includes saltgrass (*Distichlis spicata*), pickleweed (*Salicornia pacifica*), sedges (*Carex* spp.), rushes (*Schoenoplectus* spp., *Scirpus* spp., etc.), and cattail (*Typha* spp.). Vegetation may occur in horizontal zones related to depth, length, and frequency of tidal inundation.

Within the Project Area, 0.33 acre of coastal brackish marsh occurs along the lower banks and marsh plane of Old Alameda Creek. Coastal brackish marsh within the Project Area is located approximately 3 miles upstream from its mouth at South San Francisco Bay, and is tidally influenced. Dominant plant species included cattail, common reed (*Phragmites australis*), tall wheat grass (*Elymus cf. ponticus*), marsh Jaumea (*Jaumea carnosa*), broadleaved pepperweed (*Lepidium latifolium*), fat hen (*Atriplex prostrata*), marsh gumplant (*Grindelia stricta*), and pickleweed. Vegetation displayed zonation typical of coastal brackish marsh, with a transition from gumplant to pepperweed and marsh jaumea in the intertidal zone, to tall, dense cattail with limited thatch in the semi-permanently to permanently flooded zone. The marsh/upland transition was fairly abrupt due to the change in grade from the channel to the access road/levee.

Open Water

Open water within the Project Area is characterized by unvegetated mudflats that are semi-permanently to permanently flooded with the tidal brackish waters of Old Alameda Creek. Approximately 0.11 acre of open water occurs within the Project Area. The USD emergency outfall discharges into one of the larger open water areas, and maintenance activities and/or scouring from outfall exercising appears to maintain the depth and limit the vegetation growth in this area. The other major open water area occurs in the western Project Area at the Alameda County Flood Control District discharge site, and it is likely that either maintenance and/or scouring from discharging water into the creek maintain the depth and limited vegetation growth in this open water area.

4.2 Special-Status Species

4.2.1 Plants

Of the 51 special-status plant species documented to occur in the vicinity of the Project Area (CNPS 2017, CDFW 2017, USFWS 2017a), all are unlikely or have no potential to occur within the Project Area due to one or more of the following:

- Specific edaphic conditions, such as soils derived from serpentine or volcanics, are absent;
- Specific hydrologic conditions, such as fresh water streams or pools, are absent;

- The Project Area is below the documented elevation range of the species;
- Lack of a viable seed bank due to historic and contemporary soil alterations;
- Non-native species competition;
- Lack of associated species or community types such as woodland or chaparral; and
- The species has not been documented in the region in many decades and is thought to be extirpated.

Special-status plants which have been recorded in the CNDDB within 5 miles of the Project Area are shown in Figure 3. No special status plant species were observed in the Project Area during the assessment site visit. A number of the species (e.g., *Atriplex* spp., *Suaeda californica*, *Centromadia parryi* spp. *congdonii*) have distinctive vegetation that would have been visible during the site visit. A few of the species are thought to be extirpated from the vicinity of the Project Area. Several of the species would not be expected to occur based on the fact that the Project Area would be considered degraded habitat (developed outfall area, disturbed uplands along the access road). Additionally, the area of potential Project disturbance (described in Section 5.0) that overlaps vegetated areas is extremely limited, and thus the likelihood of special-status plants occurring in the impact area is low to negligible.

4.2.2 Wildlife

Of the 61 special-status wildlife species known to occur in the vicinity of the Project Area, eight were determined to have the potential to occur in the Project Area. Most of the species found in the review of background literature are unlikely or have no potential to occur within the Project Area for one or more of the following reasons:

- Associated habitats are absent from the Project site (e.g., forest, scrub, freshwater marsh, ponds, vernal pools, riparian, etc.);
- Specific habitat conditions are absent (e.g., host plants, cliffs or riverbanks, nesting/roosting trees and structures, tree cavities, deep water, friable soil, small mammal burrows, etc.);
- The Project site is outside the known range for this species;
- Poor habitat conditions due to the developed and disturbed nature of the site;
- The small of vegetated areas present within the Project impact area; and
- Habitat fragmentation due to development and disturbance in the area.

Although there are records of California least tern (*Sternula antillarum browni*) and Western snowy plover (*Charadrius alexandrinus nivosus*) nesting within 5 miles of the Project Area, these species are unlikely to nest or forage within the site due to unsuitable nesting substrate conditions, lack of documented nesting at the site, and lack of typical foraging habitat within the Project Area (CDFW 2017; Frost 2016). Additionally, although burrowing owls have been documented in the region, the site does not contain suitable small mammal burrows for this species, and the vegetation structure is likely too tall to support the owl. Thus, these species are unlikely to occur within the Project Area.

Mudflats within the Project Area may occasionally support special-status wading bird foraging, though the areas are so limited in size and experience frequent disturbance so foraging by these species would be rare. Similarly, open water within the Project Area is hydrologically connected to Old Alameda Creek, though the dense vegetation surrounding open water areas, and their shallow depths make them unlikely to support adult special-status fish species known from the region. Additionally, upstream of the Project site, Old Alameda Creek narrows and splits into

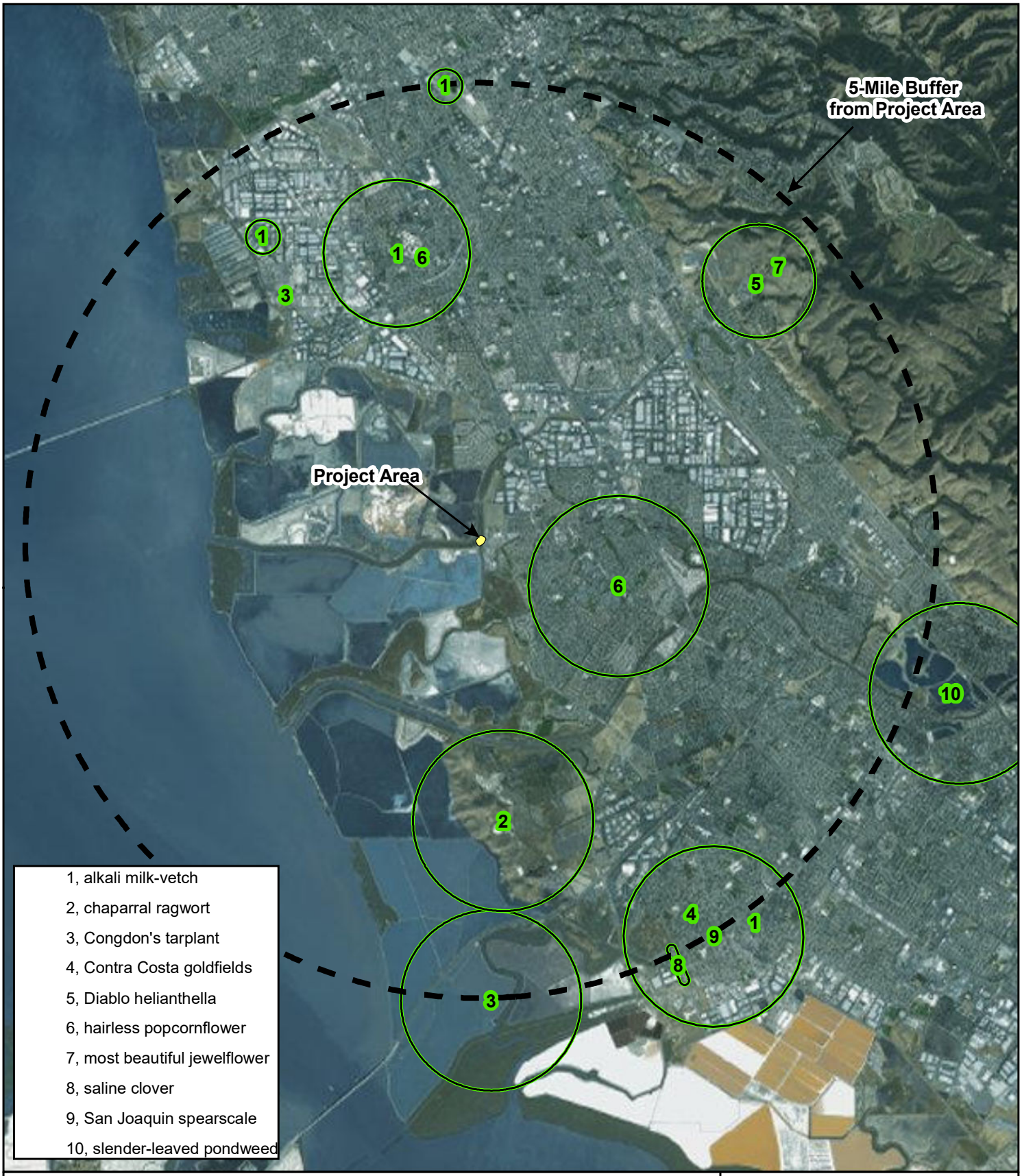


Figure 3. CNDDB Special Status Species Plants
Within 5-Mile Radius of Project Area

N
W E
S

0 0.5 1 2 3
Miles

wra
ENVIRONMENTAL CONSULTANTS

Union Sanitary District Emergency Outfall
Alameda County, California

Map Prepared Date: 6/6/2017
Map Prepared By: smortensen
Base Source: Esri Streaming - National Geographic
Data Source(s): WRA, CNDDB June 2017

Path: L:\Acad 2000 Files\12000\12045-7\GIS\ArcMap\CNDDB Plants.mxd

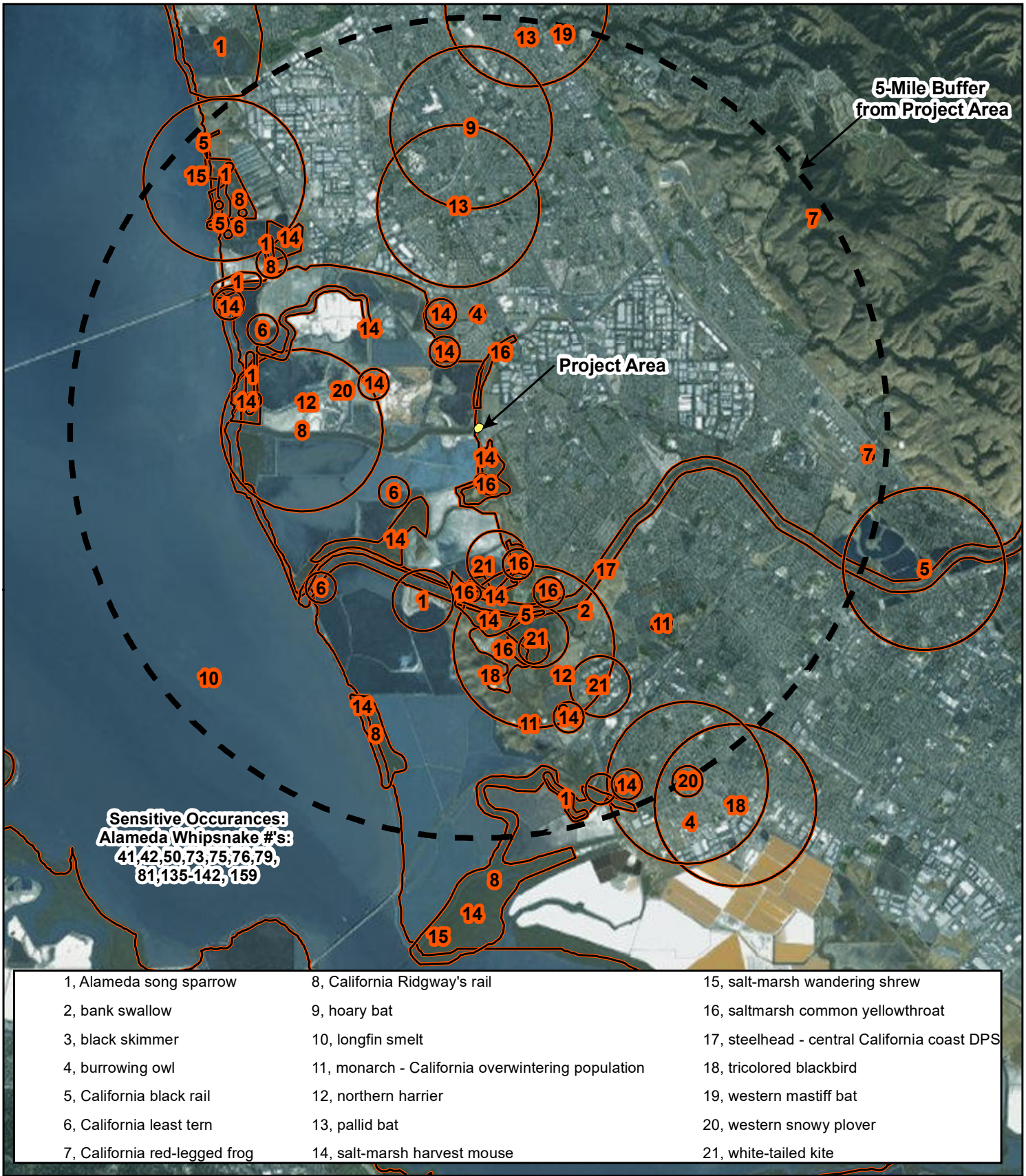
several flood control channels which drain urban runoff, and do not lead to listed fish spawning habitat. As the site is located approximately 3 miles upstream from the mouth of the Bay, and provides only a small area of very shallow open water, it is unlikely that developing or migrating juvenile salmonids, sturgeon or smelt would occur within the Project Area. Special-status wildlife species which have been recorded in the CNDDB within 5 miles of the Project Area are shown in Figure 4. None of the special-status wildlife species recorded in CNDDB were observed within the Project Area. Special-status wildlife species which have a moderate or high potential to occur in the Project Area are discussed below.

Salt marsh harvest mouse (*Reithrodontomys raviventris*); Federal Endangered Species, State Endangered Species, CDFW Fully Protected Species. Moderate Potential. The salt marsh harvest mouse (SMHM) is a relatively small rodent found only in and adjacent to suitable salt- and brackish-marsh habitat in the greater San Francisco Bay, San Pablo Bay, and Suisun Bay areas. This species has been divided into two subspecies: the northern SMHM (*Reithrodontomys raviventris halicoetes*), which lives in the brackish marshes of the San Pablo and Suisun Bays, and the southern SMHM (*Reithrodontomys raviventris raviventris*), which is found in the marshes of San Francisco Bay and several locations north of the Golden Gate. The Project site occurs within the range of the southern subspecies, which generally persists in smaller and more isolated populations than the northern subspecies. Most of the marshes of south San Francisco Bay in particular are narrow, strip-like marshes and thus support fewer harvest mice than those in the northern portions of the species' range (USFWS 2010, 2013).

Habitat associated with SMHM has been described as pickleweed- (*Salicornia*-) dominated marsh (Fisler 1965), though more recent studies have shown that SMHM is supported equally in pickleweed-dominated and mixed-vegetation (including native and non-native salt- and brackish-marsh species) (Sustaita et al. 2005, Sustaita et al. 2011). Known SMHM habitat in the Suisun Bay marshes is often composed of mixed salt- and brackish-marsh vegetation such as rushes, alkali heath (*Frankenia salina*), spearscale (*Atriplex triangularis*), and saltgrass (*Distichlis spicata*), with pickleweed as a relatively minor component. Furthermore, Shellhammer et al. (2010) found that SMHM inhabit brackish marshes with a developed thatch layer of vegetation, including bulrush (*Schoenoplectus* spp.), pepperweed (*Lepidium latifolium*)/bulrush, and pepperweed/spearscale marshes.

The SMHM does not burrow, and thus it is dependent on year-round vegetative cover. As such, the plant species composition is less important than the quality of cover from predators and the food sources provided by the vegetation. The SMHM prefers deep, dense vegetative cover greater than 11.8 inches (30 centimeters) in height (USFWS 1984), though there are indicators that shorter stands of vegetation (5.9 inches [15 centimeters] is the shortest commonly used) may also support an abundance of this species (Fisler 1965; Shellhammer et al. 1982). In tidal areas, the suitability of cover and vegetation depth is also dependent on the degree to which tidal vegetation is submerged during high tide events.

Another key habitat requirement for this species is upland or tidal refuge habitat, which is used to escape high tides and storm events that flood portions of its habitat. SMHM is a good swimmer when necessary, but it feeds, nests, and seeks cover outside the water and thus requires refuge from incoming tides and floods. Tall stands of pickleweed that remain un-submerged during high tides or floods, as well as gumplant (*Grindelia*), bulrush, natural and artificial dikes and levees, floating debris, and grasslands adjacent to the marsh edge are all potential sources of refuge. Without at least one of these forms of refuge available, the SMHM cannot persist in a wetland. The presence of grassland habitat adjacent to the marsh is not a strict requirement either, though



1, Alameda song sparrow	8, California Ridgway's rail	15, salt-marsh wandering shrew
2, bank swallow	9, hoary bat	16, saltmarsh common yellowthroat
3, black skimmer	10, longfin smelt	17, steelhead - central California coast DPS
4, burrowing owl	11, monarch - California overwintering population	18, tricolored blackbird
5, California black rail	12, northern harrier	19, western mastiff bat
6, California least tern	13, pallid bat	20, western snowy plover
7, California red-legged frog	14, salt-marsh harvest mouse	21, white-tailed kite

Figure 4. CNDDB Special Status Species Wildlife Within 5-Mile Radius of Project Area

Union Sanitary District Emergency Outfall
Alameda County, California

0 1 2 4
Miles

ENVIRONMENTAL CONSULTANTS

Map Prepared Date: 6/6/2017
Map Prepared By: smortensen
Base Source: Esri Streaming - National Geographic
Data Source(s): WRA, CNDDB June 2017

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the SMHM's seasonal use of available upland grasslands (sometimes over 300 feet from the marsh edge) suggests that they opportunistically forage and seek cover within grasslands (USFWS 2010).

This species has been documented to occur at various locations throughout Eden Landing Preserve both north and south of the Project site (CDFW 2017, SFEI 2009), and the Project site is located within the Central/Southern San Francisco Bay Recovery Unit for SMHM (USFWS 2013). Brackish marsh along the creek banks provides habitat of suitable species composition, density and height to support this species. Brackish marsh vegetation along the portion of creek bed within the Project Area is dominated by cattails with vertical structure and limited thatch which would provide suitable cover for the mouse, so this provides only marginal quality habitat. The mouse may also occur in ruderal, non-native grasslands within the Project Area for high tide escape cover year-round, or for seasonal foraging. Because suitable brackish marsh is present within the Project Area, and no barriers to dispersal occur between onsite brackish marsh and documented occurrences in the adjacent Eden Landing Preserve, this species has a moderate potential to occur throughout suitable brackish marsh adjacent grasslands.

Salt marsh wandering shrew (*Sorex vagrans halicoetes*); CDFW Species of Special Concern. Moderate Potential. This subspecies of the wandering shrew (*S. vagrans*) is endemic to the San Francisco Bay Estuary, historically inhabiting tidal marshes from the east shore of San Pablo Bay to Alviso, and along the west shore of South San Francisco Bay. Extant populations are known along the southeast shore of Bair Island, north of Corkscrew Slough, along the north bank of Mowry Slough, Dumbarton Point along the Southern Pacific elevated train tracks, and near the levee bordering the north portion of the marsh at the mouth of Alameda Creek (Josselyn et al. 1991). Typical habitat is medium to high pickleweed marsh with abundant driftwood present. This species typically lives and forages within the tidal zone where continuous ground moisture is present, and seeks refuge from high tides in the upper marsh zone.

The nearest documented occurrence of this species is less than 3 miles from the Project site at the mouth of Alameda Creek (CDFW 2017). This species may occur in portions of the brackish marsh within the Project Area when seeking refuge from high tides, though its distribution here may be limited based on the lack of large, contiguous swaths of pickleweed.

Northern harrier (*Circus cyaneus*); CDFW Species of Special Concern. Moderate Potential. Northern harrier is found in open habitats throughout most of California, including freshwater and brackish marshes, grasslands, agricultural areas, and desert habitats. Harriers typically nest on the ground in open (i.e., treeless) areas in dense, relatively tall, vegetation, the composition of which can be highly variable (Davis and Niemala 2008). Harriers are predatory and subsist on a variety of small mammals and other vertebrates. This species may forage over the open brackish marsh and ruderal grassland within the Project Area. This species may nest in marsh and upland transition zones within the Project Area, though with high levels of disturbance from the access road and plant, potential for nesting is moderate.

White-tailed kite (*Elanus leucurus*); CDFW Fully Protected. Moderate Potential. White-tailed kite is resident in agricultural areas, grasslands, scrub habitats, wet meadows, and emergent wetlands throughout the lower elevations of California. Nests are constructed mostly of twigs and placed in small to large trees, often at habitat edges (Dunk 1995). This species preys upon a variety of small mammals and other vertebrates. This species may forage over the open brackish marsh and ruderal grassland within the Project Area. This species may nest in landscape trees within the Project Area, though with high levels of disturbance from the access road and plant, potential for nesting is moderate.

California Ridgway's (clapper) rail (*Rallus obsoletus obsoletus*); Federal Endangered, State Endangered, CDFW Fully Protected Species. Moderate Potential. The California Ridgway's rail (CRR), formerly known as California clapper rail (*R. longirostris obsoletus*), is the resident Ridgway's/clapper rail subspecies of northern and central California. Although more widespread in the past, it is currently restricted to the San Francisco Bay estuary. The CRR occurs only within salt and brackish marshes. According to Harvey (1988), Shuford (1993) and Eddleman and Conway (1998), important CRR habitat components are: 1) well-developed tidal sloughs and secondary channels; 2) beds of cordgrasss (*Spartina* spp.) in the lower marsh zone; 3) dense salt marsh vegetation for cover, nest sites, and brooding areas; 4) intertidal mudflats, gradually sloping banks of tidal channels, and cordgrass beds for foraging; 5) abundant invertebrate food resources; and 6) transitional vegetation at the marsh edge to serve as a refuge during high tides. In south and central San Francisco Bay and along the perimeter of San Pablo Bay, CRR typically inhabits salt marshes dominated by pickleweed and cordgrasss. Brackish marshes supporting CRR occur along major sloughs and rivers of San Pablo Bay and along tidal sloughs of Suisun Marsh. Nesting occurs from March through July, with peak activity in late April to late May (DeGroot 1927, Harvey 1980, Harvey 1988). CRR nests, constructed of wetland vegetation and platform-shaped, are placed near the ground in clumps of dense vegetation, usually in the lower marsh zone near small tidal channels (DeGroot 1927, Evens and Page 1983, Harvey 1988).

This species has been documented to occur along Old Alameda Creek, though no nesting has been observed along the north or south banks of the creek. However, rail breeding is likely to occur in low densities in brackish marsh vegetation along the central portion of the creek, adjacent to the Project Area (McBroom 2016). This species is not expected to occur within the Project footprint; however, CRR is sensitive to noise disturbance and may abandon nesting attempts if they area within audible range of Project-related noise (typically within 700 feet).

California black rail (*Laterallus jamaicensis coturniculus*); State Threatened, CDFW Fully Protected Species, USFWS Bird of Conservation Concern. Moderate Potential. The California black rail (CBR) is the resident black rail subspecies that occurs in California coastal salt and brackish marshes from Bodega Bay to Morro Bay, with additional populations known from freshwater marshes near or in the northern Sierra Nevada foothills (Eddleman et al. 1994, Richmond et al. 2008). According to a published analysis by Spautz et al. (2005), important habitat elements for this species within the San Francisco Bay estuary are: 1) emergent marsh dominated by pickleweed, marsh gumplant, bulrush (*Scirpus maritimus*), rushes (*Juncus* spp.), and/or cattails (*Typha* spp.); 2) high density of vegetation below four inches in height; 3) high marsh elevation with transitional upland vegetation; 4) large total area of contiguous marsh; 5) proximity to a major water source; and, 6) isolation from disturbance. This species feeds primarily on invertebrates. Black rails are extremely secretive and very difficult to glimpse or flush; identification typically relies on voice. Nests are placed on the ground in dense wetland vegetation.

Potential habitat within the Project Area is located within the brackish marsh community. The CBR may forage in brackish marsh within the Project Area, though it is unlikely to breed there as breeding is rare in the South Bay.

Short-eared owl (*Asio flammeus*); CDFW Species of Special Concern. Moderate Potential. The short-eared owl is a resident and winter visitor in California. It is found in open, treeless areas with elevated perches and dense vegetation. Tall grasses and/or emergent vegetation are needed for nesting and daytime seclusion. Scattered areas of tall marsh and upland vegetation suitable for this species to nest are present along the banks of the creek within the Project Area.

Brackish marsh within and adjacent to the Project Area may provide suitable foraging habitat for this species.

San Francisco common yellowthroat (*Geothlypis trichas sinuosa*); CDFW Species of Special Concern. Moderate Potential. San Francisco (formerly saltmarsh) common yellowthroat, a subspecies of the common yellowthroat (*G. trichas*), is an endemic resident of the greater San Francisco Bay region. It typically nests and forages in emergent vegetation of salt, brackish, and freshwater marshes and also utilizes adjacent higher elevation areas. Nests are well-concealed in vegetative substrates such as grass, tules, cattails and some shrubs (Gardali and Evens 2008). This species may nest in the tall marsh or grassland vegetation within the Project Area. This species may also forage in onsite brackish marsh habitat.

Alameda song sparrow (*Melospiza melodia pusillula*); CDFW Species of Special Concern. High Potential. Alameda song sparrow, a subspecies of the common and widespread song sparrow (*M. melodia*), is an endemic resident of marsh habitat along the fringes of south and east San Francisco Bay. This subspecies prefers tidally influenced marsh, and taller shrubs such as gumplant are required for breeding to avoid nest flooding during high tides (Chan and Spautz 2008). This species has been documented to breed within the vicinity of the Project Area, and gumplant suitable for nesting is present within the brackish marsh community onsite.

Federal Listed Wildlife Species Unlikely to Occur

Although the species discussed below are unlikely to occur within the Project Area, they are addressed in this assessment because NMFS has developed standard avoidance measures for avoiding impacts to these species throughout most tidal waters directly connected to the Bay.

Green Sturgeon (*Acipsenser medirostris*); Federal Threatened, CDFW Species of Special Concern; Unlikely. Green sturgeon is primarily a marine species, entering freshwater rivers mainly to spawn, although early life stages may reside in fresh or estuarine waters for up to two years (Moyle 2002). The southernmost spawning population is in the Sacramento River system, with the principal spawning area located in the lower Feather River (Moyle 2002). Adults typically migrate into fresh water from late February through late July; spawning occurs from March to July. Juveniles migrate out to sea primarily during the summer and fall before the end of their second year (Emmett et al. 1991). Migrating individuals may hold in low-gradient or off-channel sloughs or coves where temperatures are within acceptable thresholds. Thus, sturgeons of various life stages may occur throughout the Delta and estuary. Though green sturgeon is generally more prominent in the North Bay, it is treated as potentially present throughout the San Francisco Bay Estuary, including in South San Francisco Bay (NMFS 2010). The Sacramento-San Joaquin Delta, Suisun, San Pablo, and San Francisco bays have been designated as Critical Habitat for this species (NMFS 2009).

There is no spawning habitat in San Francisco Bay for this species, and thus none is present within the Project Area. The open water in the Study Area is unlikely to provide habitat for this species as a) the site is a substantial distance (approximately 3 miles) upstream of the creek mouth, b) it is connected to the Bay through a very narrow channel (approximately 8 feet wide) which terminates at the Project Area, and c) no spawning habitat is present upstream of the Project Area that could produce out-migrating juveniles or adults. Critical Habitat has been mapped throughout the portion of Old Alameda Creek that occurs within the Project Area; however, habitat elements within the site may only meet the criteria for juvenile rearing habitat, depending on temperature and dissolved oxygen conditions at the site.

Steelhead (*Oncorhynchus mykiss irideus*) – Central California Coast ESU; Federal Threatened. Unlikely. The Central California Coast Ecologically Significant Unit of steelhead includes all naturally spawned populations of steelhead (and their progeny) in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo bays eastward to the Napa River, excluding the Sacramento-San Joaquin River Basin.

Steelhead is an anadromous salmonid, typically migrating to marine waters after spending two years in freshwater. Following out-migration to the ocean, individual Steelhead typically remain there for two to three years (and up to seven years) before returning to their natal stream to spawn. Adults typically spawn between December and June; females typically spawn twice before they die. Recent salmonid tracking studies have indicated that migrating steelhead tend to spend only limited time in San Francisco Bay and tend to stay within deeper water channels once passing through the saltwater/freshwater interface (Chapman et al. 2009). Although this behavior has not been documented in South San Francisco Bay, it is likely that similar migratory patterns are followed based on the prevalence of evidence from existing studies. Preferred spawning is found in perennial streams with cooler-temperature water, high dissolved oxygen levels, and substantial flow. Abundant riffles (shallow areas with gravel or cobble substrate) for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful reproduction.

No spawning habitat occurs within or upstream of the Project Area, and the tidal channels within the Project Area terminate onsite, so the site does not provide a movement corridor to spawning habitat. Juvenile migrating steelhead are also unlikely to use the site as rearing habitat as a) the site is a substantial distance (approximately 3 miles) upstream of the creek mouth, b) it is connected to the Bay through a very narrow channel (approximately 8 feet wide) which terminates at the Project Area, and c) no spawning habitat is present upstream of the Project Area that could produce out-migrating juveniles or adults.

5.0 POTENTIAL IMPACTS AND MITIGATION

5.1 Project Description

The purpose of the proposed Project is to make improvements to an emergency outfall to reduce the maintenance activities associated with the emergency outfall flap gate and increase the reliability of the Emergency Outfall operation during wet weather events. The USD holds an NPDES permit to discharge final effluent to Old Alameda Creek within the Project Area under wet weather conditions. Final effluent is conveyed from the Alvarado Effluent Pump Station at the WWTP, under the access road within the Project Area, and out to the south channel of Old Alameda Creek by the 48-inch diameter emergency outfall pipeline. A system of valves and piping located at the WWTP control the flow to the creek.

Under current conditions, the emergency outfall flap gate is submerged below water during high tides and is exposed during low tides. This presents a maintenance issue as the water brings in sediments that bury the flap gate and promotes vegetation growth, which impedes the operation of the flap gate. The District currently performs a maintenance program to clear the sediment and vegetation growth once every three months.

The goal of the Project is to raise the emergency outfall pipe and flap gate above high tide to avoid future maintenance issues. To achieve this, USD proposes to replace a portion of the existing pipe which is located under the access road and within a portion of Old Alameda Creek

(see Figure 5). This will require up to approximately 0.17 acre of ground disturbance, and equipment and materials are expected to be staged within the Project Area boundaries. A new outfall structure is also proposed to be installed, and stabilizing the creek banks around this structure will require the installation of rip rap both above and below the high tide line.

5.2 Significance Threshold Criteria

Pursuant to Appendix G, Section IV of the State CEQA Guidelines, a project would have a significant impact on biological resources if it would:

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 CDFW or USFWS;

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS;

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

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; and/or,
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 report utilizes these thresholds in the analysis of impacts and determination of the significance of those impacts. The assessment of impacts under CEQA is based on the change caused by the Project relative to the existing conditions at the proposed Project Site. The existing conditions at the Project Site are described above, based on the site assessments. In applying CEQA Appendix G, the terms “substantial” and “substantially” are used as the basis for significance determinations in many of the thresholds, but are not defined qualitatively or quantitatively in CEQA or in technical literature. In some cases, such as direct impacts to special-status species listed under the CESA or ESA, the determination of a substantial impact may be relatively straightforward. In other cases, the determination is less clear, and requires application of best professional judgment based on knowledge of site conditions as well as the ecology and physiology of biological resources present in a given area. Determinations of whether or not Project activities will result in a substantial adverse effect to biological resources are discussed in the following sections for sensitive biological communities, special-status plant species, and special-status wildlife species.

Total Impacts			
Impacts to Biological Communities	**Acres**	**Jurisdictional Impacts**	**Acres**
Permanent		**Permanent**	
Developed/bare ground	0.0119	Waters of the State	0.030505
Coastal Brackish Marsh	0.0042	Waters of the US: Section 10	0.017018
Open Water	0.0149	Waters of the US: Section 404	0.02361
Ruderal non-native herbaceous	0.0038	BCDC 100' Shoreline Band	0.011147
Temporary		BCDC Bay	0.02361
Developed/bare ground	0.0752	**Temporary**	
Emergent Marsh	0.0273	Waters of the State	0.041629
Landscape Trees	0.02	Waters of the US: Section 10	0.004043
Open Water	0.0017	Waters of the US: Section 404	0.023664
Ruderal non-native herbaceous	0.0159	BCDC 100' Shoreline Band	0.102857
		BCDC Bay	0.023666

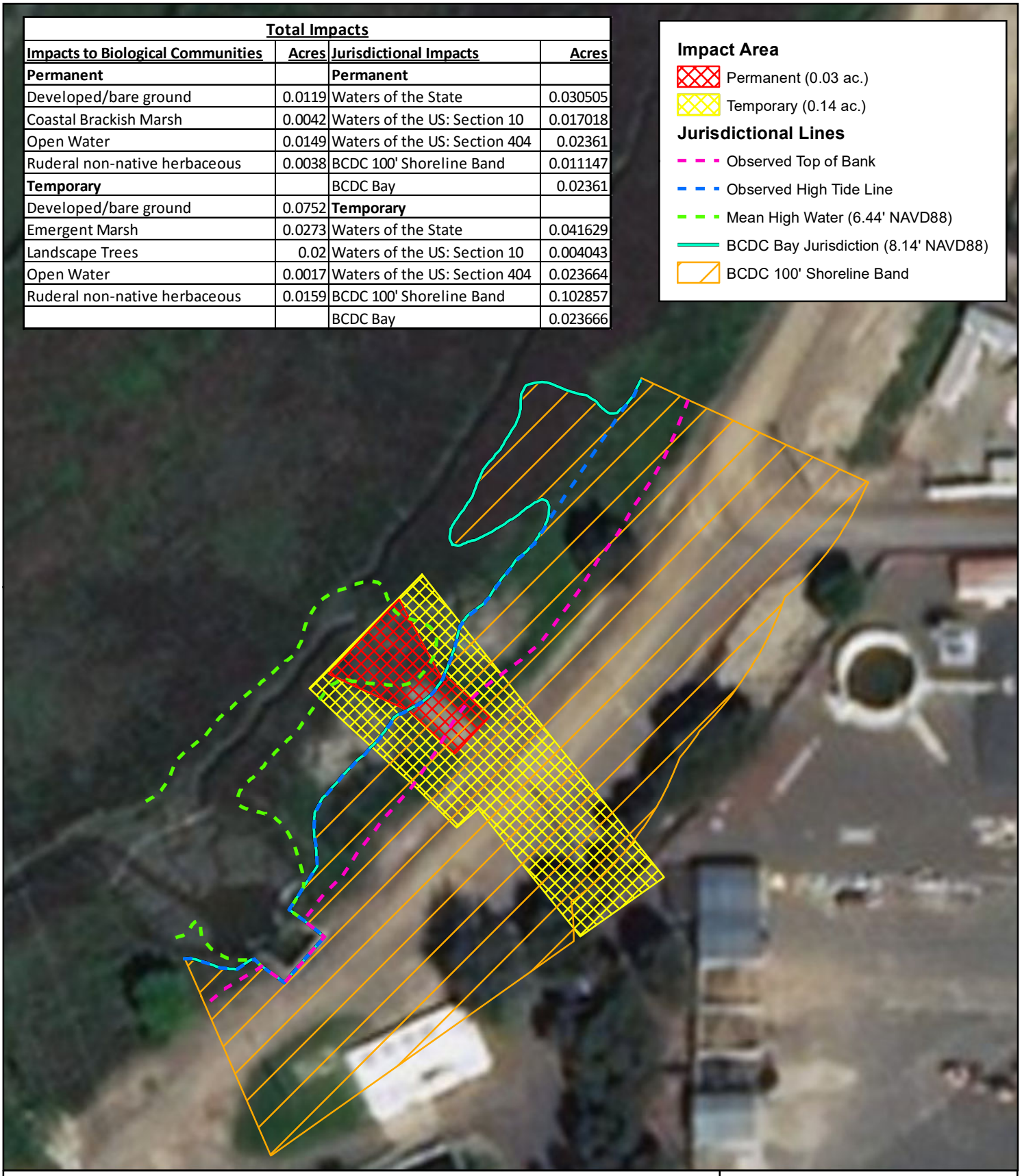

Figure 5. Impacts to Biological Communities Within the Project Area

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Feet

Union Sanitary District Emergency Outfall
Alameda County, California

wra
ENVIRONMENTAL CONSULTANTS

Map Prepared Date: 2/22/2018
Map Prepared By: pkobylarz
Base Source: Esri Streaming - NAIP 2016
Data Source(s): WRA

Path: L:\Acad 2000 Files\12000\12045-7\GIS\ArcMap\Impacts 20180215.mxd

5.3 Impacts and Mitigation Measures

Two sensitive biological communities were identified within the Project Area. No special-status plant species and eight special-status wildlife species have a moderate or high potential to occur within the Project Area. Although Federal listed fish species are unlikely to occur within the Project Area, incorporating avoidance measures into the Project is expected to eliminate the need for formal consultation with the USFWS for these species. More than half of the Study Area is comprised of non-sensitive communities, including ruderal non-native grassland, developed/bare ground, and landscape trees. The other half of the Project Area is comprised of tidal brackish marsh and open water, which are considered sensitive communities.

The proposed impact area includes up to approximately 0.17 acre of ground disturbance, of which a portion is slated to occur below the high tide line within potential Corps jurisdiction, below the top of the creek's southern bank within potential CDFW and RWQCB jurisdiction, and potentially within both BCDC Bay and Shoreline Band jurisdiction (see Figure 5). No public access trails are located within the Project Area, so no impacts to public access potentially regulated by BCDC are anticipated.

Areas of excavation and pipeline replacement represent temporary impacts. Permanent impact areas are limited to areas where the new outfall structure and rip rap will be installed. Project activities are expected to result in minimal disturbance to existing vegetation communities and open water/mud flat that may provide habitat for protected wildlife species.

No large structures or substantial changes to the accessibility of the area for migrating wildlife will result from the Project; therefore, no significant impacts to wildlife migratory corridors will occur as a result of the Project. The Project is not located within a habitat conservation plan area, nor does it conflict with any local policies or ordinances. Although the Project Area is located partially within mapped Critical Habitat for green sturgeon, potential impacts would be temporary in nature and would not adversely modify Critical Habitat to the point that it will no longer aid in the species' recovery. Completing the Project would result in less frequent maintenance, and thus less potential disturbance, in the future.

With the implementation of suitable mitigation measures, Project impacts to sensitive biological communities and species are anticipated to be less than significant. Specific impacts and mitigation measures are described below.

5.3.1 Sensitive Biological Communities

The proposed Project was designed to minimize impacts to sensitive biological communities. However, limited areas of temporary and permanent impacts to sensitive biological communities, including coastal brackish marsh and open water, are anticipated. Of the overall impact area within sensitive biological communities, up to approximately 0.022 acre of impact is slated to occur below the high tide line within potential Corps Section 404 jurisdiction, and approximately 0.016 acre may occur to Corps Section 10 jurisdictional areas. Additionally, up to 0.031 acre of impacts would occur below the top of the creek's southern bank within potential CDFW and RWQCB jurisdiction. Impacts may occur to up to 0.0218 acre of BCDC Bay lands and 0.0535 acre of Shoreline Band. Potential impacts and mitigation measures to avoid impacts to these sensitive natural communities are described below.

Potential Impact 1: Construction activities within coastal brackish marsh and open water are anticipated to result in temporary disturbance during construction. Additionally, the installation of a new outfall structure and rip rap to stabilize the bank will result in permanent fill in wetland and

non-wetland water features potentially under the jurisdiction of the Corps, BCDC, RWQCB and CDFW. Additionally, ground disturbance adjacent to Old Alameda Creek may result in unintentional fill or discharge into wetlands or non-wetland waters. Project activities within these sensitive areas would likely require permits from the Corps, BCDC, RWQCB, and CDFW.

Mitigation Measure 1: Impacts to wetlands and waters of the U.S. and State typically require a Corps Section 404 Individual or Nationwide Permit and a RWQCB Section 401 Water Quality Certification. Additionally, impacts below the top of bank of Old Alameda Creek may require a 1602 Lake and Streambed Alteration Agreement from CDFW. The BCDC may also require a new permit or update to an existing permit for impacts to Bay and Shoreline Band jurisdiction. In addition to required permitting, best management practices shall be used to lessen potential impacts to sensitive habitats. This includes the use of silt fencing, wattles, and other appropriate stormwater pollution prevention measures. For in-water work, a coffer dam or similar shall be installed at low tide with oversight from a qualified biologist to prevent or minimize increases in turbidity during work in open water. Implementation of the proposed Project will also result in much less frequent maintenance than is currently required, and reducing maintenance-related disturbance will benefit the habitat and associated species in this part of the Creek.

Level of Significance after Mitigation: Less than Significant

5.3.2 Special-status Plants

Of the special-status plant species documented from the vicinity of the Project Area, none have potential to occur within the Project impact area. Vegetated portions of the impact area are extremely limited in size, and none of the rare plant species known from the region were observed within the Project impact area, despite being identifiable in and outside their blooming periods. Because no impacts to special-status plant species are anticipated as a result of Project construction, **no impacts** are anticipated and no further actions are recommended for special-status plants.

5.3.3 Special-status Wildlife Species

Of the special-status wildlife species documented from the vicinity of the Project Area, only eight have potential to occur within the Project footprint: SMHM, SMWS, northern harrier, white-tailed kite, short-eared owl, CRR, CBR, and San Francisco common yellowthroat. The Ridgway's rail and black rail are unlikely to occur within the Project impact area due to lack of suitable cover, but they may still be impacted directly by Project activities through noise and visual disturbance. Additionally, although listed fish species are unlikely to occur within the Project impact area, it is recommended that standard avoidance measures be incorporated into the Project plan to adhere to Bay-wide standards for in-water work and to avoid NMFS consultation for these species. Impacts, avoidance and minimization measures for special-status wildlife species are discussed below.

<u>Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew</u>

Construction activities will occur in ruderal non-native grassland, where the SMHM is assumed present opportunistically foraging in spring and summer, and only at times when vegetation is suitable. Additionally, there is a narrow band of coastal brackish marsh within the impact area that has limited suitability to support SMHM and SMWS.

Potential Impact 2: The SMHM and SMWS could be impacted through vegetation removal, entrapment in excavations or staged equipment, and vehicle or equipment strikes.

Mitigation Measure 2a: Prior to the initiation of construction, the biological monitor shall provide an endangered species training program to all personnel involved in Project construction. At a minimum, the employee education program shall consist of a brief presentation by persons knowledgeable about the biology and legislative protection of protected species with potential to occur in or adjacent to the Project Area, to explain concerns to contractors, their employees, and agency personnel involved with implementation of the Project. The program shall include the following: a description of such species and their habitat needs, any reports of occurrences in the action area, an explanation of the status of these species and their protection under state and federal legislation, and a list of measures being taken to reduce impacts to protected species during the work. Fact sheets containing this information shall be provided to the Project foreman.

Mitigation Measure 2b: Prior to ground disturbance, all ruderal non-native grassland and coastal brackish marsh shall be carefully removed from the impact footprint under the supervision of a qualified biologist. The biologist will first conduct a thorough nest search within vegetation to be removed. If active small mammal nests with potential to be SMHM or SMWS nests are observed, a 50-foot buffer will be established around the nest until the biologist has determined that the young are independent of the nest. Vegetation will then be removed using only hand tools or hand-operated power tools to carefully remove vegetation down to bare ground.

Mitigation Measure 2c: The access road within the Project Area is used by USD and the Alameda County Flood Control District, and thus the installation of effective wildlife exclusion fencing in the Project Area has low feasibility. To prevent wildlife entrapment, equipment and materials shall be staged in developed areas within the USD WWTP; they shall not be staged adjacent to Old Alameda Creek where they could provide cover for small mammals that normally reside in the adjacent vegetation. Alternatively, exclusion fencing may be installed along the top of bank of Old Alameda Creek for 200 feet in either direction from the center of the Project Area, and the fencing shall be inspected weekly by the qualified biologist. Exclusion fencing may double as erosion control as described in **Mitigation Measure 1.**

Mitigation Measure 2d: A qualified biologist will be present for initial ground disturbance within the banks of Old Alameda Creek. Following initial ground disturbance, the biologist will monitor on an as-needed basis for any new ground breaking within the banks of the creek.

Mitigation Measure 2e: If excavations or trenches are not backfilled on the same day as excavation, they shall either be covered so as to prevent small mammals from falling in, or they shall be provided with exit ramps suitable for small mammals to escape on their own.

Mitigation Measure 2f: Work hours shall be limited to half an hour after sunrise to half an hour prior to sunset. Night work shall be avoided to the maximum extent feasible.

Mitigation Measure 2g: If any mouse or shrew is observed at any time during construction, work shall not be initiated or shall be stopped immediately until the animal leaves the vicinity of the work area of its own volition. The Project biologist shall direct the contractor on how to proceed accordingly. Neither the biologist nor any other persons at the site shall pursue, capture, handle or harass any potential protected species observed.

Level of Significance after Mitigation: Less than Significant

California Ridgway's Rail and California Black Rail

Although rails are unlikely to occur within the Project impact footprint, they have moderate potential to occur within tidal marsh within 700 feet from Project activities. If CRR were to nest within 700 feet of the proposed Project, there is the potential for nesting disturbance. Black rails are unlikely to nest within or adjacent to the Project footprint; however, measures to avoid impacts to CRR would also prevent any impacts, however unlikely, to CBR.

Potential Impact 3: Noise and other disturbances resulting from construction-related activities could disrupt CRR nesting and breeding activity in the adjacent marsh.

Mitigation Measure 3: Construction work shall be limited to the period between September 1 and January 31 to avoid the rail nesting season. If construction work is proposed after January 31 or prior to September 1, protocol-level surveys for rails shall be conducted to determine the extent and location of nesting rails.

The methodology of this survey effort was developed utilizing the survey protocol for CRR published by the USFWS (2015). Three listening stations shall be utilized to cover the area of potential rail habitat within 700 feet of the proposed work. Four surveys shall be conducted, with the first beginning before February 1. All surveys shall be conducted no less than 14 days apart from each other.

If rail activity centers are identified, a suitable buffer (700 feet for Ridgway's rails; black rail buffers vary) shall be established and maintained around the activity center until September 1. If no rail nesting activity is observed during protocol-level surveys during a given year, construction may proceed adjacent to potential nesting habitat during the breeding season of the same year. Surveys are typically finalized by the beginning of April and results accepted by the USFWS by the end of April, in a given year. The USFWS typically requires receipt and confirmation of survey results prior to authorizing work during the rail breeding season. Additionally, **Mitigation Measure 2a** shall be implemented to avoid impacts to these species.

Level of Significance after Mitigation: Less than Significant

Other Nesting Birds

This assessment determined that several additional special-status avian species including northern harrier, white-tailed kite, short-eared owl, Alameda song sparrow, and San Francisco common yellowthroat may forage and nest within and adjacent to the Project footprint. Other native avian species protected by the Migratory Bird Treaty Act and California Fish and Game Code may also nest within the Project Area.

Potential Impact 4: Project activities including vegetation clearing and earth work have potential to directly impact nests of common and special-status avian species.

Mitigation Measure 4: No surveys or other avoidance measures for nesting bird species are necessary for Project activities conducted during the non-breeding season (i.e., between September 1 and January 31). For any vegetation removal and/or ground-disturbing activities that are proposed to occur during the avian breeding season (February 1 through August 31), nesting surveys shall be conducted. Specifically, pre-construction surveys shall be conducted within 14 days of ground disturbance to avoid disturbance to active nests, eggs, and/or young of native birds. It is also recommended that any trees, shrubs, or grasses in or adjacent to the

Project Area that are proposed for removal and that could be used as avian nesting sites be removed during the non-breeding season (September 1 through February 1). Surveys can be used to detect the nests of special-status as well as non-special-status birds. An exclusion zone shall be established around any active nests of any native avian species found in the Project Area until a qualified biologist has determined that all young have fledged. Buffer zone distances differ depending on species, location, and placement of nest.

Level of Significance after Mitigation: Less than Significant

Fishes and Green Sturgeon Critical Habitat

Although protected fish are unlikely to occur within the Project impact area, work within tidal waters directly connected to the Bay are typically treated as occupied by listed fish species known from the region, including green sturgeon and Central California Coast steelhead. Additionally, the portion of Old Alameda Creek that passes through the Project Area is mapped as Critical Habitat for green sturgeon. Standard avoidance measures shall be implemented to avoid all potential for take of these species, however remote. Proposed impacts to designated Critical Habitat will be temporary in nature, will not adversely modify Critical Habitat to the point that it will no longer aid in the species' recovery, and will be self-mitigating by reducing maintenance activities at the outfall. Thus, consultation with NMFS is not anticipated to be necessary.

Potential Impact 5: In-water work has extremely limited potential to impact listed fish species through increased turbidity and siltation that could potentially stress respiratory function in fish. It may also temporarily impact an extremely limited area of potential rearing habitat during construction. Permanent impacts to the creek banks and mapped Critical Habitat from installation of rip rap and the new outfall structure are anticipated to be negligible, particularly as listed fish are unlikely to occur in the Project footprint.

Mitigation Measure 5a: Impacts to these species can be avoided if Project activities occur during the work windows established by NMFS for Bay dredging work. In-water work activities shall occur between June 1 and November 30 to avoid impacts to listed fish species, as per NMFS Programmatic Biological Opinion guidance for dredging in the San Francisco Bay (NMFS 2015). Temporary and permanent impacts to the creek bed and channel shall be minimized.

Mitigation Measure 5b: For in-water work outside this work window (i.e., for in-water work that occurs between December 1 and May 31), a coffer dam as noted above shall be installed at low tide with oversight from a qualified biologist to prevent or minimize increases in turbidity during in-water work. If any standing water remains inside the Project Area within the coffer dam, the biologist will dip net the area to ensure that no fish have been trapped within the coffer dam prior to dewatering. If listed fish species are observed within the coffer dam area, NMFS shall be contacted immediately and the coffer dam carefully opened to allow the fish to escape.

Level of Significance after Mitigation: Less than Significant

5.3.4 Protected Trees

Potential Impact 6: If necessary, landscape trees within the Project Area may be trimmed or removed to accommodate heavy machinery or excavation for pipeline replacement.

Mitigation Measure 6: To modify or remove any tree on public lands, the applicant shall apply to the Director of Public Works for a permit. The Director may require an inspection and will issue or refuse to issue the permit.

6.0 CONCLUSION

Based on the results of the site visit and impacts assessment, the Project is not anticipated to result in significant impacts to sensitive biological communities, special-status plant species, special-status wildlife species, native bird species, or designated Critical Habitat. Two sensitive biological communities were identified within the Project Area. Any potential impacts to sensitive biological communities shall be avoided through the implementation of mitigation measures. Although not a sensitive biological community, landscape trees may require special permissions to trim or remove, if necessary.

No special-status plants were observed during the site visit, and none are expected to occur within the Project Area; accordingly, no avoidance or mitigation measures are required.

The SMHM, SMWS, CRR, CBR and other nesting native birds have potential to be impacted by Project activities in the absence of avoidance and minimization measures. However, impacts will be less than significant with the implementation of suitable avoidance and minimization measures, which include seasonal work windows, biological monitoring, species-specific and breeding bird surveys, and nest buffers where applicable.

With the implementation of the avoidance and minimization measures described herein, all potential Project-related impacts to sensitive biological resources shall be avoided or reduced to less-than-significant levels.

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APPENDIX A

SITE PHOTOGRAPHS

Photograph 1. Disturbed open water area at emergency outfall location along the margins of Old Alameda Creek. Photograph taken facing northwest on April 24, 2017.

Photograph 2. Emergency outfall flap gate located below the high tide line. Maintenance is currently required to remove sediment deposits that keep flap gate and emergency outfall from functioning. Photograph taken April 10, 2016.

Photograph 3. Access road and ruderal, non-native grassland community along the southern bank of Old Alameda Creek. Photograph taken facing northeast on April 24, 2017.

Photograph 4. Concrete access ramp leading to emergency outfall, with ruderal, non-native vegetation along each side, open water in the center, and coastal brackish marsh of Old Alameda Creek in the background. Photograph taken April 10, 2016.

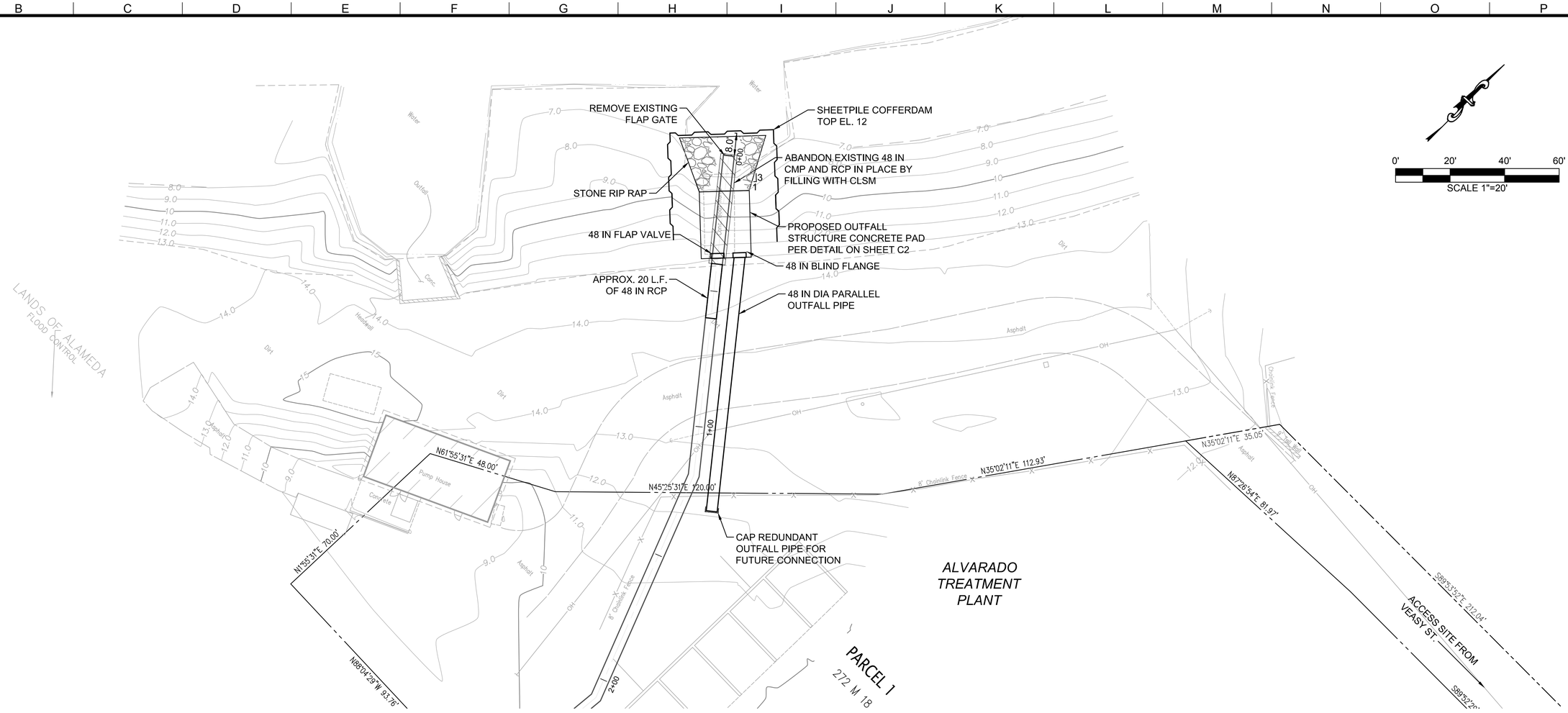
Photograph 5. Dredged materials deposit area immediately upslope from the emergency outfall. Maintenance dredging is conducted at the outfall flap gate to maintain outfall function, and spoils are placed here approximately 4 times per year, which minimizes vegetative growth on the pile. Photograph taken facing northeast on April 24, 2016.

Photograph 6. Developed access road within proposed impacts area, with landscape trees in the background. Photograph taken facing southeast on April 24, 2017.

Photograph 7. Narrow band of coastal brackish marsh within the proposed impact area, with non-native ruderal grassland on the right and coastal brackish marsh (outside the impact area) in the background and concrete access road leading to the outfall in the foreground. Photograph taken facing northeast on April 24, 2017.

APPENDIX B

PROJECT DESIGN PLANS



Brown AND Caldwell

WALNUT CREEK, CALIFORNIA

SUBMITTED: _____ DATE: _____ PROJECT MANAGER

APPROVED: _____ DATE: _____ BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

SCALE:

DESIGNED: COD

DRAWN: GMH

CHECKED:

APPROVED:

EXTERNAL REFERENCE FILES

PRELIMINARY DESIGN

THIS DRAWING IS NOT VALID FOR CONSTRUCTION PURPOSES UNLESS IT BEARS THE SEAL AND SIGNATURE OF A DULLY REGISTERED PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER — GREGORY M. BROWN — No. C72777 — CIVIL — STATE OF CALIFORNIA

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

UNION SANITARY DISTRICT
UNION CITY, CALIFORNIA

EMERGENCY OUTFALL IMPROVEMENTS PROJECT

IMPROVEMENTS PLAN AND PROFILE

FILENAME

BC PROJECT NUMBER 150459

DRAWING NUMBER C1

SHEET NUMBER 1 OF 2

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PLAN OF OUTLET STRUCTURE

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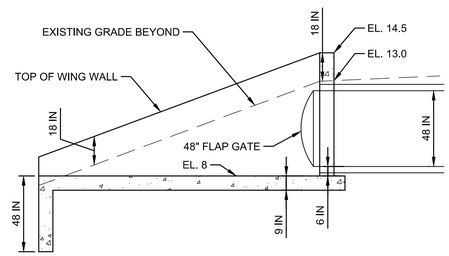

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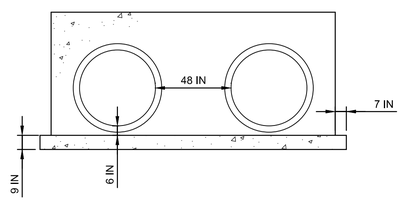

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Brown AND Caldwell

WALNUT CREEK, CALIFORNIA

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2 INCHES
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(IF NOT 2" - SCALE ACCORDINGLY)

SCALE:

DESIGNED: COD

DRAWN: GMH

CHECKED:

APPROVED:

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REGISTERED PROFESSIONAL ENGINEER
GREGORY O. PRIEN
No. C72777
CIVIL
STATE OF CALIFORNIA

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

UNION SANITARY DISTRICT
UNION CITY, CALIFORNIA

EMERGENCY OUTFALL IMPROVEMENTS PROJECT

OUTLET STRUCTURE PLAN AND SECTIONS

FILENAME

BC PROJECT NUMBER
150459

DRAWING NUMBER
C2

SHEET NUMBER
2 OF 2

APPENDIX C

Phase 1 Cultural Resources Evaluation

PHASE I CULTURAL RESOURCE ASSESSMENT REPORT

For the Union Sanitary District Emergency Outfall Project

Alameda County, California

Submitted to:

Paul Scheidegger

Scheidegger & Associates

201 N. Civic Drive

Walnut Creek, CA 94596

Submitted by:

Archeo-Tec Inc.

5283 Broadway

Oakland, CA 94618

March 14, 2018

Table of Contents

Introduction

This document presents the methods and findings of a Phase I Cultural Resources Evaluation for the Union Sanitary District's Emergency Outfall project, Union City, Alameda County, California. This Phase I Evaluation addresses the area's potential for archaeological resources and the protocol for discovery of human remains.

The Emergency Outfall Project consists of renovations to an outfall that opens to Alameda Creek: specifically, the outfall's gate, which is prone to clogging with sediment from the creek, would be removed and the outfall structure itself would be raised. Proposed ground disturbance will reach a maximum of 7 feet of disturbance for the outfall structures and 11 feet of disturbance of the outfall pipes.

The scope of work consisted of a review of documents on file at the Northwest Information Center (NWIC) at Sonoma State University, consultation with the Native American Heritage Commission (NAHC) and interested Native American representatives, and a pedestrian surface survey of the Area of Potential Effects (APE).

The Phase I study found no evidence of identified archaeological resources within the APE. Therefore, pursuant to Section 106 of the National Historic Preservation Act (NHPA), a finding of "No historic properties affected" as pertains to archaeological resources is appropriate.

Proposed Impacts

The current emergency outfall consists of a 48" reinforced concrete pipe (RCP) that emerges from the Union Sanitary District (USD) facility at approximately 8 feet below surface, crosses under Levee Road, transitions to corrugated metal pipe (CMP), and terminates in concrete sack rip rap within Old Alameda Creek. The outlet contains a flap gate that is routinely buried by sediment in the creek.

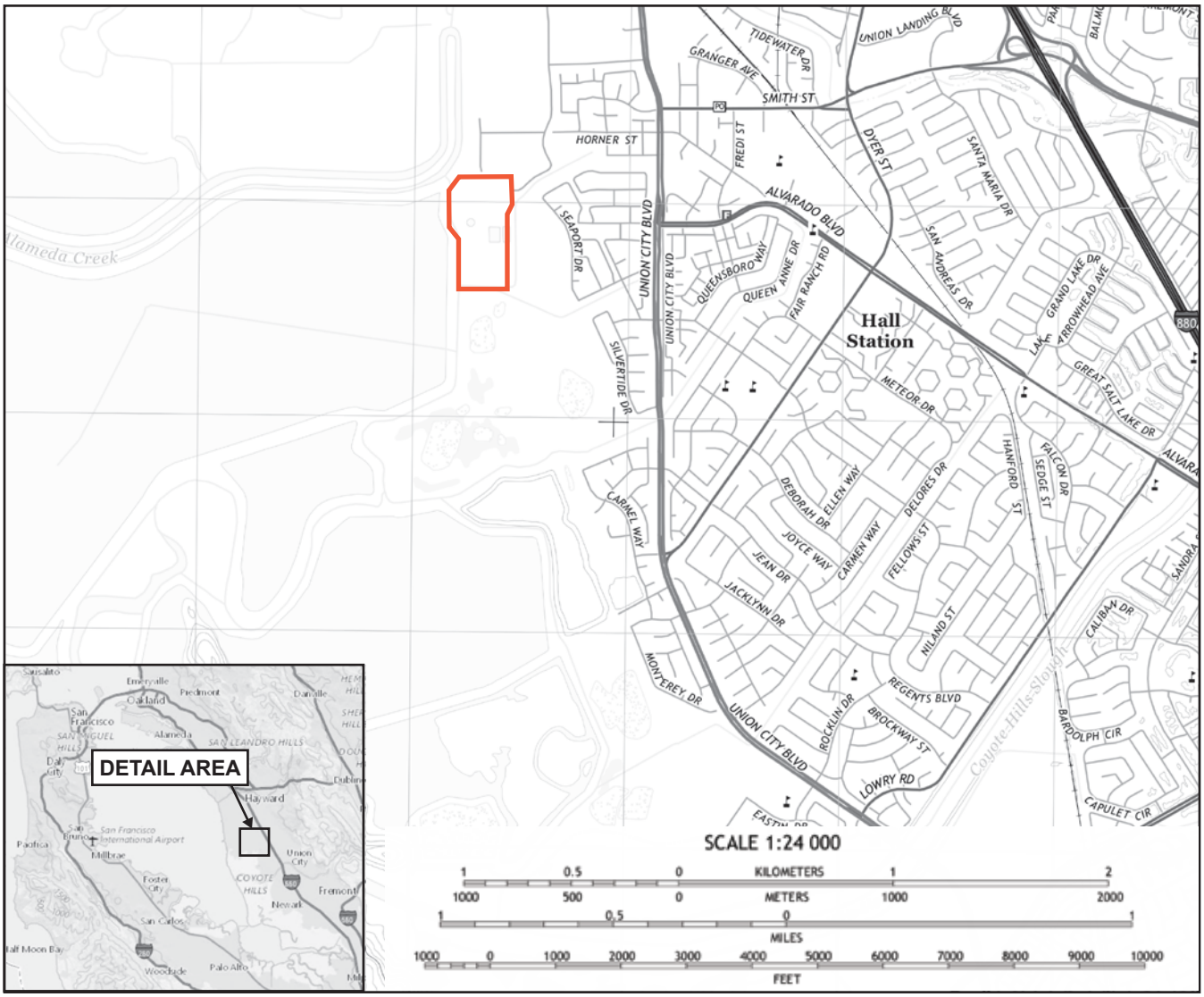
The Project would remove the existing outlet and the CMP portion of the existing pipe, which would be abandoned in place. A pair of 22.5-degree vertical angles would be installed at the end of the existing RCP to raise the elevation of the outfall above high high tide in order to prevent future sedimentation problems. A second redundant pipe would be installed parallel to the existing pipe for future use; this redundant pipe would extend from the outfall, under Levee Road, and terminate just within the USD facility fence line. The existing outlet would be replaced with a new concrete headwall, wingwalls, and apron, the design of which has not yet been finalized.

Construction of the new outfall structure will require excavation of approximately 75 to 100 cubic yards and will reach approximately 6-7 feet deep. Installation of the new redundant pipe and rehabilitation of the existing pipe will require excavation of a trench 75 feet long and 11 feet deep; the trench would generally be 41 feet wide but would extend to 46 feet wide in the outermost 25 feet to allow replacement of the existing CMP.

Legislative Authority

Section 106 of the National Historic Preservation Act (36 CFR Part 800) requires federal agencies, and agencies using either federal funds or operating under federal permit, to take into account the effect of their undertakings on historic properties.

Due to the Emergency Outfalls project's location in Alameda Creek, the U.S. Army Corps of Engineers is the lead federal permitting agency for the project. The Union Sanitary District is the owner of the facility.



Images: USGS.gov

Detail from Newark Quadrangle, 7.5 Minute Map CA 2015

Project Boundaries

1. Project Location Map
Union Sanitary District Emergency Outfall Project

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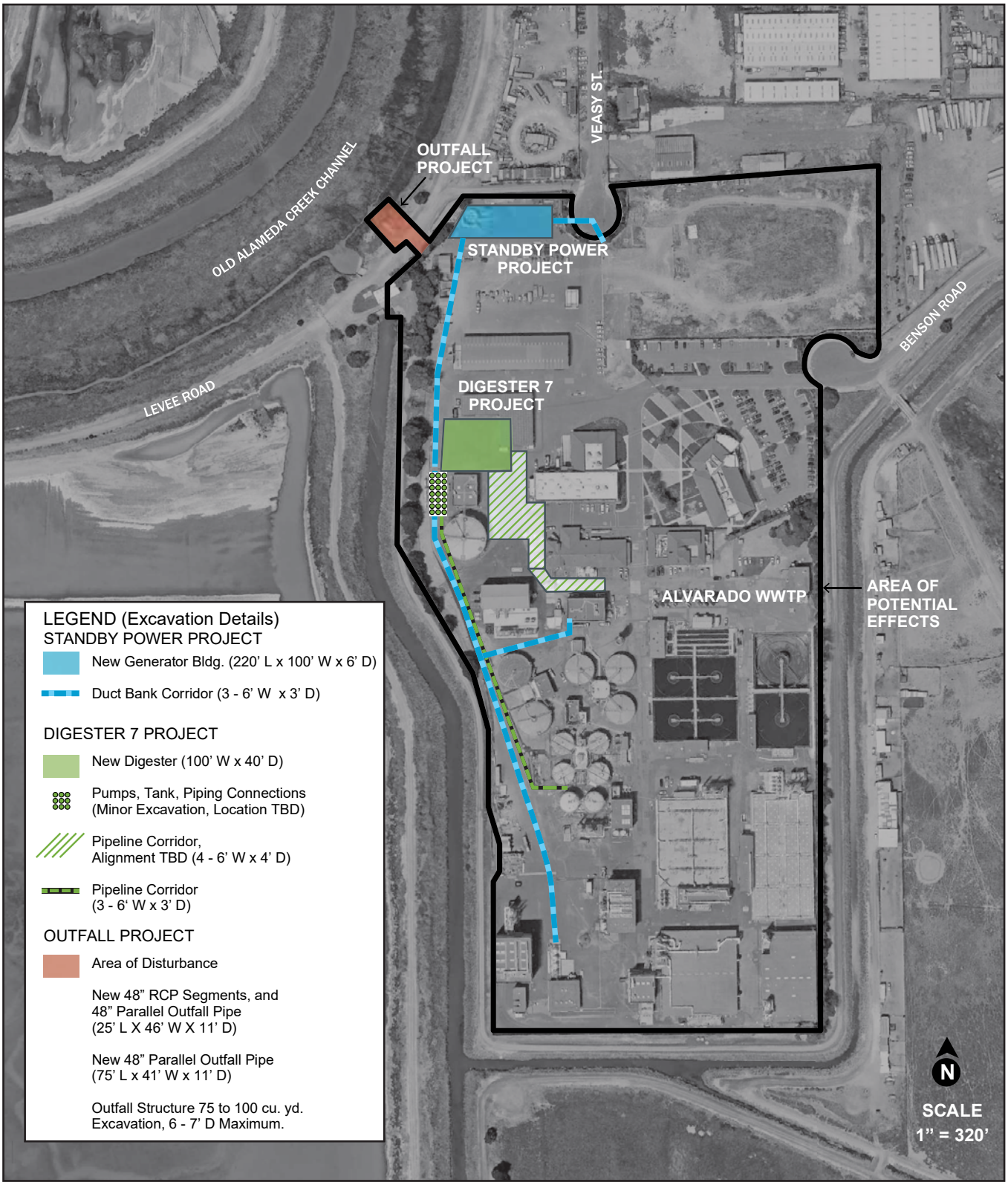
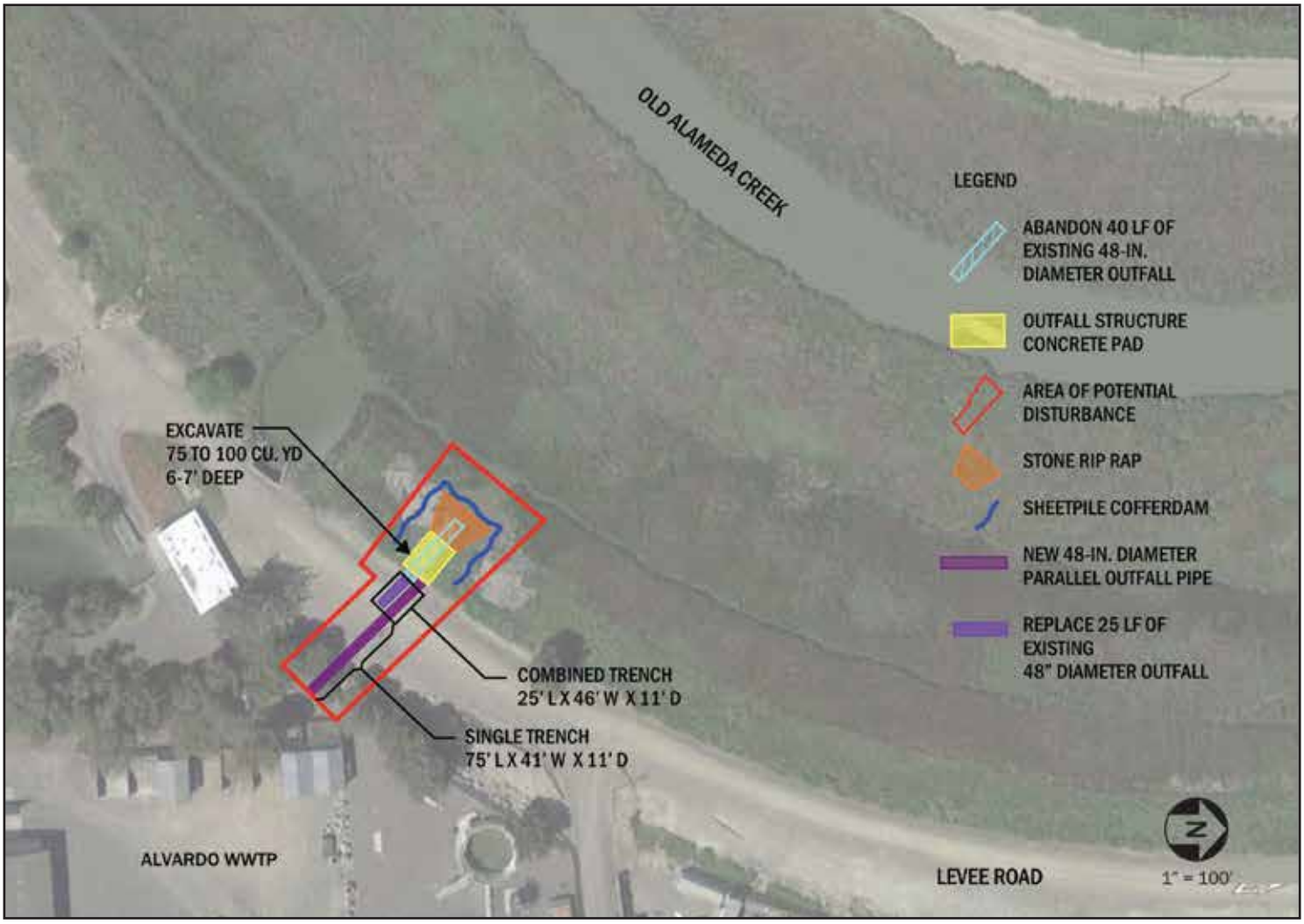
CONSULTING ARCHAEOLOGISTS



Source: Brown & Caldwell

2. Overview of Proposed Projects on the USD Campus
Union Sanitary District Emergency Outfall Project

ARCHEO-TEC
CONSULTING ARCHAEOLOGISTS



Source: Brown & Caldwell, March 2018

3. Area of Potential Effects: Outfall Area
Union Sanitary District Emergency Outfall Project

ARCHEO-TEC
CONSULTING ARCHAEOLOGISTS

The District's engineer, Brown and Caldwell, has retained Scheidegger & Associates, in association with Archeo-Tec, to assist in compliance with the cultural resources section of the project.

The National Register of Historical Places

The National Register is a listing of properties that are important to the history of our nation. To be eligible for listing, a property must typically be 50 years of age or more; it must possess historic significance; and it must possess integrity of location, design, setting, materials, workmanship, feeling and association. Historic significance is the importance of a property to the history, architecture, archaeology, engineering, or cultural aspects of a community. These significant resources can be in the form of districts, sites, buildings, or structures. To qualify for the National Register, a property must be significant to American history at the local, state, or federal levels (36 CFR 60.4(a-d)), and must:

A) be associated with events that have made a significant contribution to the broad patterns of history;
B) be associated with the lives of persons significant to our past;
C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D) have yielded, or may be likely to yield, information important to prehistory or history.

Archaeological resources are typically eligible under Criterion D for their informational value. Once a cultural resource is determined to exist or potentially exist within the boundaries of the project site, the identified historic property is then evaluated for its potential National Register eligibility. As no cultural resources were found to exist within the project area no resource was evaluated for eligibility.

Personnel Qualifications

All work was overseen by Principal Investigator Allen G. Pastron. Dr. Pastron earned his Doctorate in Anthropology from the University of California at Berkeley in 1977. He has four decades of experience with both prehistoric and historic archaeological sites in the Bay Area.

Archival research and consultation were completed by Michelle Staley and Emily Wick. The pedestrian survey was completed by Michelle Staley and monitoring of geotechnical borings was completed by Elizabeth Tjoa.

Michelle Staley earned a Master's degree in Anthropological Science from Stanford University in 2005. She has 14 years of experience in Bay Area archaeology. Emily Wick earned an interdisciplinary Bachelor's degree from the University of Redlands in 2000 and has 17 years of experience in Bay Area archaeology. Elizabeth Tjoa earned a Bachelor's degree from the University of California at Santa Cruz in 2013 and has 4 years of experience in Bay Area archaeology.

Historical Context

The subject property is situated in a rural marshland setting in western Alameda County along the eastern shore of the San Francisco Bay. Most of the flat topography is subject to flooding during the rainy season. Cool moist winters and warm dry summers characterize the climate of the area.

Ethnography

At the start of the historic era, the Project area was situated within the territory claimed by the Ohlone people, also referred to as Costanoan (the Spanish derivative for "coastal people") in anthropological literature (Kroeber 1925). The term Costanoan implies a linguistic affiliation and does not necessarily reflect a common cultural relationship or identity.

In 1770, the Ohlone/Costanoan population numbered at most around 10,000 people (Levy 1978:485), perhaps fewer (Kroeber 1925:464). But forty years later, about A.D. 1810, the aboriginal ways of these people mostly disappeared in the face of relentless European encroachment and its devastating impacts – disease, warfare, displacement, and, above all, the California mission system (Cook 1943; Cook 1957).

There is some debate as to whether the area's "languages" are, in fact, separate languages or merely regional dialects. Early ethnographic works proposed that the Costanoan language family had eight distinct, and mutually unintelligible, languages: Ramaytush (spoken on the San Francisco Peninsula), Tamien (Santa Clara Valley), Chochenyo (most of the East Bay), Karkin (Carquinez Strait), Awaswas (Santa Cruz), Mutsun (Gilroy area or Pajaro River Tribelets), Rumsen (Carmel, Sur and lower Salinas rivers) and Chalon or Soledad (Salinas River). According to these early linguistic interpretations, the peoples who lived in and around the present Project area at the time of contact with European settlers spoke Tamien [Tamyen] (Kroeber 1925; Shipley 1978:80–90; Levy 1978:485).

The family household was the basic social unit, which was extended patrilineally (Harrington 1933:3). An average of about 15 individuals – although this varies considerably – made up the household and sororal polygyny was apparently commonplace (Broadbent 1972:62; Palou 1924:64). The next larger social unit was the clan (Harrington 1933:3). Additionally, the Ohlone were divided into moieties – the Bear and the Deer – following the common central California practice (cf. Kroeber 1925:835). The largest social unit throughout most of California was the tribelet (Kroeber 1962), and in this respect, the Ohlone were no exception. The tribelet, or group of interrelated villages under the leadership of a single headman, consisted of about 200 to 400 people (Levy 1978; Milliken 1995:21). Each tribelet – of which there may have been several – served as an autonomous political unit, presumably for enforcing equal access to resources for its members and for protection from hostile neighbors.

The Ohlone were primary collectors and hunters of fish and game (Levy 1978:487). Of major importance to the aboriginal diet, as documented both ethnographically and archaeologically, were molluscan resources: ocean and bay mussels (*Mytilis californianus* and *M. edulis*), clam (especially *Macoma nasuta*), and oysters (especially *Ostrea lurida*) were extensively exploited. Many other littoral resources, including varieties of gastropods and crustaceans, contributed protein to the diet, as documented in detail by Levy (1978:481), other sources of meat included all manner of land and waterfowl, and terrestrial and sea mammals, both large and small. Fish contributed a large measure of protein to the Ohlone diet, and were taken by net, trap, hook, spear and poison (Harrington 1921; Crespi 1927:280; Font 1930; Bolton 1933). Ocean and estuarine environments yielded a wide variety of species including steelhead (*Salmogairdenerii*), sturgeon (*Acipenser* sp.), salmon (*Oncorhynchus* sp.), ray (*Mylobtis californica*), lamprey (*Entosphenus tridentatus*) and varieties of small sharks, perches and smelts (Follett 1975:73; Levy 1978:491–492).

In common with most aboriginal groups in California, plant foods probably contributed the majority of calories to the Ohlone diet. The staple was the acorn, pounded by stone mortar and pestle to form a mush,

a gruel, or bread, following the complex technique of leaching tannic acids (Gifford 1965). Buckeye (*Aesculus californica*) yielded edible nuts. A variety of berries were harvested for direct consumption, for flavoring the bland acorn starch, and for cider (Harrington 1921; Merriam 1966-1967:3). Roots, shoots, and seeds were savored, including wild onion (*Allium* sp.), cattail (*Typha latifolia*), wild carrot (*Daucus pusillus*), dock (*Rumex* sp.), tarweed (*Madia* sp.), chia (*Salvia columbariae*), and other species (Levy 1978:491). Controlled burning of the land was practiced in order to renew the succession of plant communities (Kroeber 1925:467; Crespi 1927; Galvan 1968; Lewis 1973).

In addition to providing primary subsistence, the flora and fauna of a rich natural habitat provided the remainder of life's necessities for the Ohlone. Tules (*Scirpus lacustris*) provided building materials for structures (Kroeber 1925:468) and for balsas (Heizer and Massey 1953). The balsa canoe was instrumental in fishing (Font 1933), waterfowling, and probably the hunting of sea mammals (cf. Kroeber 1925:835) These also facilitated navigation of the salt marshes and permitted transportation across the Bay (Kroeber 1925:468). Vegetal resources also provided the fabric for net and cord manufacture and especially, basket making. These latter were used in their various forms as cooking containers and utensils, storage containers, seed beaters, water jugs, cradles (Merriam 1967; Broadbent 1972:63), fish traps (Crespi 1927:280), trays for leaching and drying acorn meal (Kroeber 1925:467), and for burden (Kroeber 1925:468; Levy 1978:493).

Animal remains – bone, tooth, beak, and claw – provided awls, pins, daggers, scraping and cutting knives, and other tools. Pelts and feathers provided clothing and bedding (Kroeber 1925:467; Levy 1978:493). Sinew was used for bow support and bow strings (Harrington 1921). Feather, bone, and especially shell were used for items of ornamentation, such as beads, pendants, hair bangles, septum inserts, earrings and the like (Mason 1916:433–435).

Local rock and mineral sources provided cherts and metamorphic and igneous stones for tool manufacture; and local sandstone, highly indurated, provided suitable material for grinding and pounding tools. Exotic materials, such as steatite and particularly obsidian, could be obtained in trade, using for barter such locally available commodities as cinnabar and hematite (Heizer and Treganza 1972). Other valuable resources used to obtain exotic materials in trade with non-costal peoples included salt, shellfish meat, and shell as raw material for ornament manufacture (Davis 1961:23).

Historical Period

The first European explorers in the area were Jose Francisco Ortega in 1769 and Anza and Font in 1776. The former expedition did not leave a substantial record, but the latter remarked on the optimal settlement conditions of the present Project area: a geographically flat area at the southern tip of the San Francisco Bay. Anza and Font noted three indigenous villages of about 70 people each, as well as pathways to the south. Spanish settlement in the area soon followed; the Pueblo de San José and the Mission of Santa Clara de Asís were founded in 1777 (Bowden 2012:17).

Beginning in the first decade of the nineteenth century and continuing until the 1840s, the lands surrounding the project area were part of the extensive East Bay ranch holdings of Mission of the Glorious Patriarch, Saint Joseph (Milliken 1995:153). Mission San Jose was established June 9, 1797, and its headquarters were about 10 miles to the southeast of the Project site. A vast swath of the land surrounding Mission San Jose, encompassing the entire eastern shore of the San Francisco Bay and extending into the Coast Ranges further to the east, was used to support the Mission by grazing sheep

and cattle and growing grain (Hendry and Bowman 1940:487). As with all of the Mission's activities, the majority of this ranch work depended upon the labor of Indian neophytes, both from local villages and from raided communities throughout Northern and Central California.

Rancho Era (1821-1848)

Following the transition of California from Spanish to Mexican rule in 1821, cattle ranching became the primary industry in Alta California. The hide and tallow trade was the principal foundation for early commercial interest on the California coast and the San Francisco Bay (Phelps 1983:25), to the extent that hides were sometimes called "California bank notes" (Nickel 1978). After the California missions were secularized in 1834, mission lands were privatized by the Mexican government and distributed to prominent families who established large ranchos and claimed the missions' animals and equipment.

With the rancho system as the primary socioeconomic institution of the state, the Indian populations, deprived of their right to mission lands, and, in many cases, unable to return to tribal life, had few other options but to enter employment as rancho laborers. This arrangement ranged from slavery to wage labor. Typically, a system of peonage was created where a master provided housing, food, and basic support for an Indian in exchange for labor. Mission records show that rancho families brought in "orphans" (i.e., children of non-Christian parents) to be baptized, and there is some evidence that capture of children from remaining hunter-gatherer communities was a common practice (Milliken et al. 2009:153–167).

By the 1840s, the Missions had relinquished its claim to grazing lands in the East Bay, including those encompassing the present project area. In 1844, Augustin Alviso and Tomas Pacheco were granted Rancho Potrero de los Cerritos, which means "pasture of the little hills." The 10,000-acre land grant included the Project site.

The date of July 8, 1846, marked the conversion of the hamlet of San Francisco from Mexican to American jurisdiction. On this day, a landing party from the sloop-of-war *Portsmouth*, under the command of Captain John B. Montgomery, waded ashore at the town of Yerba Buena and raised the stars and stripes to the top of the flagpole in the town's dusty plaza, thereby claiming California for the United States.

Early American Period (1848 - 1918)

California was claimed for the United States in 1846 during the Mexican-American War; the Treaty of Guadalupe Hidalgo confirmed the transfer in 1848. In the years after the American conquest of "Upper California", rancho lands were divided and sold. The project area was initially part of a hundred-acre tract of land purchased in 1850 by John M. Horner.

The New-Jersey-born Horner, a Mormon who arrived in 1846 on the ship *Brooklyn*, was among the first American-period landowner-farmers in the state. A farmer by trade, Horner arrived with little but seed potatoes and a pistol to his name, the latter of which he traded for a pair of oxen. Initially settling near Mission San Jose, he bought land from, and employed, formerly Missionized Indians. Over the course of his period of prosperity, he built over a dozen miles of public road, laid out eight towns, and was active in growing and trading produce (Justesen 1991).

Horner named the hundred acres containing the Project area "Union City" after his newly purchased steamship *Union*, and built a landing with warehouses at the bend in Alameda Creek just north of the Project area. Union City's location at the mouth of Alameda Creek made it well-positioned for shipping to and from San Francisco and Benicia. Horner and *Union* exported produce from Horner's land and brought back hardware, manufactured items, and mail (Swenson 2009).

The small village of Union City thrived until Horner was hit hard by the post-Gold-Rush economic crash of 1853. Despite extensive land holdings in the East Bay, South Bay, and San Francisco, he was financially ruined and never fully recovered. After pouring large amounts of money into his properties—securing his titles in a time of rapid cultural change, building fences by hiring laborers to travel to redwoods and cut down trees—he was largely unable, due to lack of financial infrastructure in the growing region—to borrow against them. Horner was forced to sell his steamer, mill, and most of his property at a loss (Justesen 1991; Nickel 1978).

Alameda County was founded in 1853. In 1854, the nearby village of New Haven was combined with Union City to form the town of Alvarado. Alvarado was the first county seat of Alameda County as well as the regional center of notorious night life, which was rumored to have rivaled the Barbary Coast in splendor and debauchery. Even after the area containing Horner's original settlement was absorbed into Alvarado, many people continued to refer to it as Union City, and maps as late as 1927 divided Union City from Alvarado (Swenson 2009).

As Alvarado grew, the Union City neighborhood weakened. Horner scaled back his farming and no longer grew enough for export. He thus ceased his steamboat runs; residents and even houses themselves were moved to the center of Alvarado (Swenson 2009:7). In an 1859 letter to her New England family, an early resident of Alvarado named Marion Dyer wrote:

> Most of the buildings here in Alvarado were hauled from Union City. The latter place is getting rather shorn of its ancient glory while the former is in the ascendant. Mr. John Horner was the founder of Union City and Henry Smith of Alvarado. They are now both poor [Swenson 2009:10].

In 1878, James J. Stokes bought the property that now contains the Project area, and it became known as Stokes' Landing (Swenson 2008). From Stokes' Landing, beer, salt, and sugar were shipped to San Francisco via Alameda Creek from the county's growing industrial operations.

Alvarado flooded annually, which was a factor in the county seat being moved from Alvarado to San Leandro in the mid-1850s (it was ultimately moved to Oakland in 1875). As flooding that changed the course of Alameda Creek clearly occurred (Nickel 1978), the Project area's position relative to the bend in the creek may have changed over time; likewise, flooding may have re-deposited cultural materials from the nearby village to the Project area. Disaster's impacts to the human and natural landscape were not limited to flooding: the earthquake of 1868 on the nearby Hayward Fault was severe throughout Alvarado, and simulation maps show the area reaching a magnitude of above eight (United States Geological Survey 2008).

At century's end, the Union City area of Alvarado consisted of a scattering of domiciles, a pump station (located north of the Project area), as well as a stove foundry to its north. No known development took place within the Project boundaries during the later nineteenth century (Sanborn-Perris Map Company 1896).

After the turn of the twentieth century, large portions of surrounding marsh areas on the southeastern shore of the San Francisco Bay in the southern portion of Alameda County were used in the salt industry. The Project area and its immediate vicinity changed little from the late nineteenth to the mid-twentieth century (Sanborn Map Company 1944).

Union Sanitary District (1918-Present)

The Union Sanitary District was founded in 1918 to provide sewage treatment to southern Alameda County.

Union City itself was formed in 1959, uniting Alvarado with the nearby municipality of Decoto. After over a hundred years as the former Union City area of Alvarado, the neighborhood thus became part of the Alvarado area of Union City. (Reflecting this reversal in nomenclature is the Project area itself, which is known as the "Alvarado Treatment Plant": one facility among many within the greater Union Sanitary District.)

The first treatment facility within the Project site was constructed in 1962 to serve Union City; the current 33-acre facility was completed in 1981 and currently services the towns of Union City, Newark, and Fremont (Union Sanitary District 2016).

Archaeological Record

Prehistoric research in the San Francisco Bay Area is one of the oldest archaeological traditions in California. When U.C. Berkeley archaeologist N.C. Nelson conducted the first intensive archaeological survey of the region between 1907 and 1908, he recorded no fewer than 425 shellmounds on or near the shoreline of the Bay (Nels C. Nelson 1909). It is also useful to cite Nelson's discussion concerning the wide variety of environmental settings in which prehistoric sites were located throughout the San Francisco Bay region:

> [Shellmounds were] situated in a great variety of places; but, on the whole, the positions may be characterized as "convenient" rather than in any sense "strategic." Many of the largest mounds are located at the head of the sheltered coves, yet not a few deposits lie in thoroughly exposed places, out on the bluff and higher headlands. Occasionally a hillside, with or without any accommodating shelf or hollow, has been chosen, doubtless on account of some small spring issuing in the vicinity… Some mounds are found in apparently unnatural situations, such as on the plain where no streams pass, or out in the salt-marsh, where fresh water could not be had, [but] normally shell heaps lie close to sea level.
>
> The fact is that nearly all the mounds lie within fifty feet of the surface of the bay water… but exceptions occur, [some] mounds lie very far above the normal zone…[and] at least ten of the known deposits extend below sea [N. C. Nelson 1909:328–329].

The large prehistoric population of the San Francisco Bay region resulted in the creation of a prolific archaeological record. The Bay Area's landscape was marked by numerous large and small mounds of earth and shell containing a variety of prehistoric cultural materials and features, which captivated early twentieth-century archaeologists like N.C. Nelson and Max Uhle. Archaeological sites in the greater vicinity of the project area consist of such shell mounds.

Coyote Hills Sites

Approximately three miles to the south of the Project area lies the Coyote Hills Slough, where Alameda Creek empties into the San Francisco Bay. This was an area of intensive prehistoric settlement and resource exploitation (Garaventa et al. 1991). Major sites include CA-ALA-12, CA-ALA-13, CA-ALA-328, CA-ALA-329 and CA-ALA-341.

Between 1965 and 1991, CA-ALA-13 had been studied numerous times (Rackerby and Whelan 1967; Jackson 1973; Banks and Fredrickson 1977; Clark et al. 1984; Banks 1985; Garaventa et al. 1991). In 1949, Fenenga described the site as a "large shell midden". In 1965 Rackerby updated the site description and conducted site excavations through San Francisco State College. Peter Banks updated the site record in 1977 in association with California State College, Sonoma.

CA-ALA-12 has been recorded and/or excavated on three occasions. Fenenga first recorded the site as a "small low shell mound" with "burials washed out in wave cut west bank" in 1949. Rackerby apparently conducted excavations at the site in 1965 (Fenenga and Rackerby 1965). The site boundaries were firmly established during test trench and auger excavations at the site; Banks recorded this excavation in 1985. Banks describes CA-ALA-12 as, "one of at least four prehistoric sites situated along an un-named tributary that is south of Lines A and K and within the Coyote Hills Regional Park". The 1985 investigations determined that the site midden varied from 2 to 4 feet thick (Banks 1985)

The Garaventa study indicated CA-ALA-13 extended 1.5 to 1.7 meters in depth and is in an area of "extreme and high sensitivity" (Garaventa et al. 1991:1). San Francisco State removed 108 burials and several thousand artifacts, including bone tools and shell ornaments, in 1965 (Jackson 1973). Clark, Wiberg, and Holman located cultural deposits associated with CA-ALA-13 covering approximately 1 acre (1984). The Banks investigations included field reconnaissance and auger testing within the project area. Those investigations located the extents of CA-ALA-13 in the aftermath of a channelization project in the fall of 1982 (Banks 1985).

Nelson originally recorded CA-ALA-328 as mound #328. Excavations within this large shell mound have been recorded by Wedel in 1935, Treganza in 1949–1968, Hayward State University in 1966–1968, and Banks in 1977. At least 517 burials and over 3,500 artifacts were recovered during excavations at this site. It is described as a "major habitation site" and, according to Banks, was inhabited from 380 BC to the historic era. Banks stated that the site "may be the best preserved shellmound in the Bay Area" (Banks 1977).

CA-ALA-329, Nelson Mound #329, is another large midden site and is located directly to the south of CA-ALA-13. The site was discovered during the construction of a reservoir in 1925 and is characterized by ashy soil, shell, animal bone, and fire-altered rock (Coberly 1973). This habitation and burial site was studied intensively by University of California and Stanford field courses between 1947 and 1968 (Jackson 1973). The dimensions of the mound are 450 by 300 feet. Roughly 300 burials were removed. It was augered in 1984 during marsh restoration monitoring to further determine its limits (Clark et al. 1984).

CA-ALA-341 was most likely destroyed by the Army Corps of Engineers, July 1, 1965. It was described as a, "buried midden site exact dimensions unknown, the mound shape rises 3-4 feet above flood plain but there is three feet of silt of the midden" (Rackerby 1965).

Records Search Results

Prior to the commencement of the archaeological field reconnaissance, maps and other archival documents concerning previous archaeological studies that took place within a one-mile radius of the project site were consulted at the Northwest Information Center (NWIC) (Access Agreement File #17-1956) California Historical Resources Information System. Michelle Staley of Archeo-Tec conducted this documentary research on February 2, 2018.

One archaeological resource was found within a one-mile radius of the Project area: Nelson's Shellmound CA-ALA-326. Though its location is mapped, no official site record exists for this resource.

Twenty-seven previous studies have been conducted within the study area: S-727, S-814, S-0848, S-1479, S-2916, S-7047, S-8690, S-9768, S-10046, S-13769, S-14619, S-15236, S-18217, S-18903, S-25275, S-27516, S-27866, S-27987, S-30882, S-31419, S-31708, S-31919, S-33061, S-32329, S-33699, S-34861, and S-36278. None of these studies resulted in significant archaeological resources being uncovered.

Two of these studies included analysis of the present Project area: S-13769 (Origer 1992) and S-14619 (Chavez 1992). S-13769, conducted in 1992 by Origer & Associates, consisted of an archaeological survey of the Alvarado Wastewater Treatment Plant, which is the present Project property. No archaeological resources were found, and the surface consisted largely of inaccessible (paved and built) areas. Soils that were observed consisted of fill. In addition, the study indicated that, based on communication with a worker at the Treatment Plant, the construction of the plant consisted of the removal of approximately 20 feet of bay mud. The mud was replaced with fill, and the treatment plan constructed atop the mud (Origer 1992).

Later that same year, study S-14619 (Chavez 1992) took place across several sites within the Union Sanitary District, one of which was the "Alvarado Plant Site". After citing the negative results of the Origer study, the report states that their "investigations were limited to reviewing the outfall location and pipeline alignment, which consisted of highly disturbed terrain with extensive fill present. No evidence of archaeological or historical resources was observed" (Chavez 1992).

Sensitivity

Archaeological sensitivity is estimated based on environmental setting, proximity to nearby sites, and site stratigraphy. In terms of geographic setting, an area near a creek and near the bay is typically sensitive for prehistoric sites, though in this case the creek is not opening into the bay in this area. The area is not located in close proximity to any prehistoric sites: the closest deposit, CA-ALA-326 is located one mile away. The site stratigraphy consists of alluvium at a deep level, bay mud atop the alluvium, and fill. The upper portions of the site stratigraphy are highly disturbed, particularly in the outfall area.

Native American Consultation

As part of the present cultural resources assessment, Archeo-Tec consulted with the staff of the Native American Heritage Commission (NAHC) in Sacramento with the intention of determining whether any portion of the present project alignment may encroach upon any sites deemed sacred by members of the local Native American Community. In order to obtain this information, a letter was sent to the NAHC on January 29, 2018. This letter formally requested that the Native American Heritage Commission consult its Sacred Lands File in order to procure the requested information.

On February 21, 2018, the NAHC responded via email. The email contained an attached letter dated February 20, 2018; the letter read that the records search of the Sacred Lands File (SLF) was negative. Nonetheless, the above referenced letter cautioned that the "absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area" and included contact information for tribal representatives in the area. A copy of the NAHC letter of February 20, 2018, is included in Appendix I of this report.

On February 22, 2018, Archeo-Tec sent individual letters via email to each of the tribal representatives on the NAHC's list. No responses were received. Per the recommendations of the list, follow-up telephone calls were placed to all individuals after a two-week period.

On March 8, 2018, all individuals were contacted by phone. Messages were left for Andrew Galvan of The Ohlone Indian Tribe, Ann Marie Sayers of the Indian Canyon Mutsun Band of Costanoan, and Katherine Perez of the North Valley Yokuts Tribe. Rosemary Cambra, of the Muwekma Ohlone Indian Tribe, did not answer the phone and her voicemail box was full; a second number listed for her was out of service. Tony Cerda of the Costanoan Rumsen Carmel tribe was driving when he answered, and requested the e-mail be re-sent for his review. Irenne Zwierlein of the Amah Mutsun Tribal Band of Mission San Juan Bautista requested that all crew be culturally trained, and requested that if an archaeologist was required to monitor, an Indian monitor should also be present.

Monitoring of Geotechnical Borings

On February 16, 2018, Elizabeth Tjoa of Archeo-Tec monitored two geotechnical borings conducted within the Emergency Outfall APE. The borings were located on the road that runs between the USD facility and the creek, and were positioned at the location where the outfall crosses the road. Boring 1 (to 50 feet) was located on the east side of the road, and Boring 2 (to 30 feet) was located on the west side. Samples were taken at 5-foot intervals.

- 0-5 feet: both borings contained medium brown clay fill.
- 5-15 feet: dark grey mud was observed in Boring 1 while fine sandy silt with pea-sized wood and charcoal fragments were observed in Boring 2, as was a very small fragment of burned bone, probably from a rodent, was observed between 10 and 15 feet.
- 15-20 feet: alluvial deposits indicative of the bed of Alameda Creek was observed in both borings. These deposits consisted of light to medium brown sand with rounded pebbles.
- 20-30 feet: Boring 1 contained bay mud, and Boring 2 alternated between sand and clay.
- 30-45 feet: yellow-brown silty clay was present in both borings at around 30 feet, and extended in Boring 1 to 45 feet. Boring 2 was terminated at 30 feet.
- 45-50 feet: medium yellow brown fine sand was encountered. Boring 1 was terminated at 50 feet.

No cultural materials were encountered during archaeological monitoring of geotechnical borings.

Survey

A pedestrian survey was completed by Michelle Staley on March 7, 2018. Ms. Staley examined all unpaved and accessible surfaces within the Emergency Outfall APE; the soils immediately surrounding the current outfall were not closely inspected as they were fully saturated from the recent rain and were not accessible.

The APE could generally be broken up into four distinct areas: the area immediately around the outfall, which consisted of wetlands currently characterized by sediment deposited among reeds and grasses; the levee, which is artificial fill covered in a concrete access ramp; Levee Road, which is paved; and the shoulder between Levee Road and the USD facility fence, which consisted of bare earth partially obscured by litter from oak trees. The levee, Levee Road, and shoulder areas all appear to be artificial fill, while the wetlands area is native soils that are frequently deposited by the creek and removed by heavy equipment.

USD currently performs a maintenance program to clear the sediment and vegetative growth once every three months. Outfall soils contain intact clam shells that appear to be natural in origin. Modern trash in the form of plastic bottles, nails and screws, and similar debris was present in small quantities throughout the APE. No other cultural indicators were observed.

Conclusions and Recommendations

No cultural resources were observed during either the monitoring of geotechnical borings or the surface archaeological reconnaissance. These investigations, as well as previous archaeological studies within the facility, clearly indicate both the presence of fill throughout the campus and a high level of soil disturbance in and around the outfalls themselves, which contain recently deposited sediments that are periodically removed.

No further archaeological investigations are thus recommended within the Emergency Outfall portion of the APE. However, though such a case is extremely unlikely, the possibility of cultural materials existing within the Project area cannot be ruled out entirely: fill or dredged remains could contain disturbed or re-deposited human remains. It is thus recommended that an archaeological "Alert Sheet" be distributed to construction crews, along with a brief, on-site education session. The Alert Sheet outlines procedures for contacting an archaeologist in the unlikely event that unexpected archaeological resources are uncovered. Compliance with the California Health and Safety Code and California Public Resources Code as detailed below must be maintained.

Procedures Regarding Discovery of Human Remains

Per California Health and Safety Code §7050.5 and California Public Resources Code §5097.98, the following procedures will be followed in the event that human remains and associated cemetery/grave items are encountered. Associated cemetery/grave items are any items (e.g. clothing, funerary gifts, etc.) that are buried with an individual, as well as any cemetery furniture, architecture, fencing, or other features associated with the cemetery itself. This definition applies to both prehistoric and historic period cemeteries. The term "grave" also extends to cremation pits containing (non-intact) human remains.

Upon discovery, the Alameda Coroner's Office will be contacted for identification of human remains. The Coroner has two working days to examine the remains after being notified.

If the remains are Native American, the Coroner must notify the Native American Heritage Commission (NAHC) of the discovery within 24 hours. The NAHC will then identify and contact a Most Likely Descendant (MLD). The MLD may make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the remains and grave goods. Once proper consultation has occurred, a procedure that may include the preservation, excavation, analysis, and curation of artifacts and/or reburial of those remains and associated artifacts will be formulated and implemented.

If the remains are not Native American, the Coroner will consult with the archaeological research team and the lead agency to develop a procedure for the proper study, documentation, and ultimate disposition of the remains. If a determination can be made as to the likely identity—either as an individual or as a member of a group—of the remains, an attempt should be made to identify and contact any living descendants or representatives of the descendant community. As interested parties, these descendants may make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the remains and grave goods.

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Appendix I: Native American Correspondence

ARCHEO-TEC
CONSULTING ARCHAEOLOGISTS

Debbie Pilas-Treadway
Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, California 95691

January 29, 2018

Subject: **Sacred Lands File & Native American Contacts List Request for Union Sanitary District Emergency Outfalls/Standby Power/Digester 7 Project, located in Union City, Alameda County, California**

Dear Ms. Pilas-Treadway:

I am writing with regard to the proposed Union Sanitary District Emergency Outfalls/Standby Power/Digester 7 Project, located in Union City, Alameda County, California. Archeo-Tec is performing a Phase I archaeological study of the Project at the request of its sponsor, Union Sanitary District (USD).

The proposed Project consists of three areas of impact within the Union Sanitary District's facility. Renovations to an **Emergency Outfall** gate opening to Alameda Creek in the northwest corner of the USD facility would entail ground disturbance to a maximum of 11 feet within and around the outfall's footprint. The **Standby Power Generation System Upgrade** would construct an approximately 220- by 100-foot generator building with a depth of impact of 6 feet below surface just east of the outfalls. Associated pipeline trenches would reach 3-4 feet below surface. **Digester 7** is a proposed new digester in the western portion of the USD facility. Excavation would reach a depth of 40 feet; associated pipelines would reach a maximum depth of 4 feet.

Attached please find a map of the project area. The property is located on the "Newark, CA" 7.5-minute USGS and within Township 4S, Range 2W (Mount Diablo Meridian).

Please review the Sacred Lands File and notify us of any sacred lands that would be affected by the Project, as well as individuals or groups whom we should contact. As always, we can accept the results by email at archeo-tec@archeo-tec.com or by fax at (510) 858-7248.

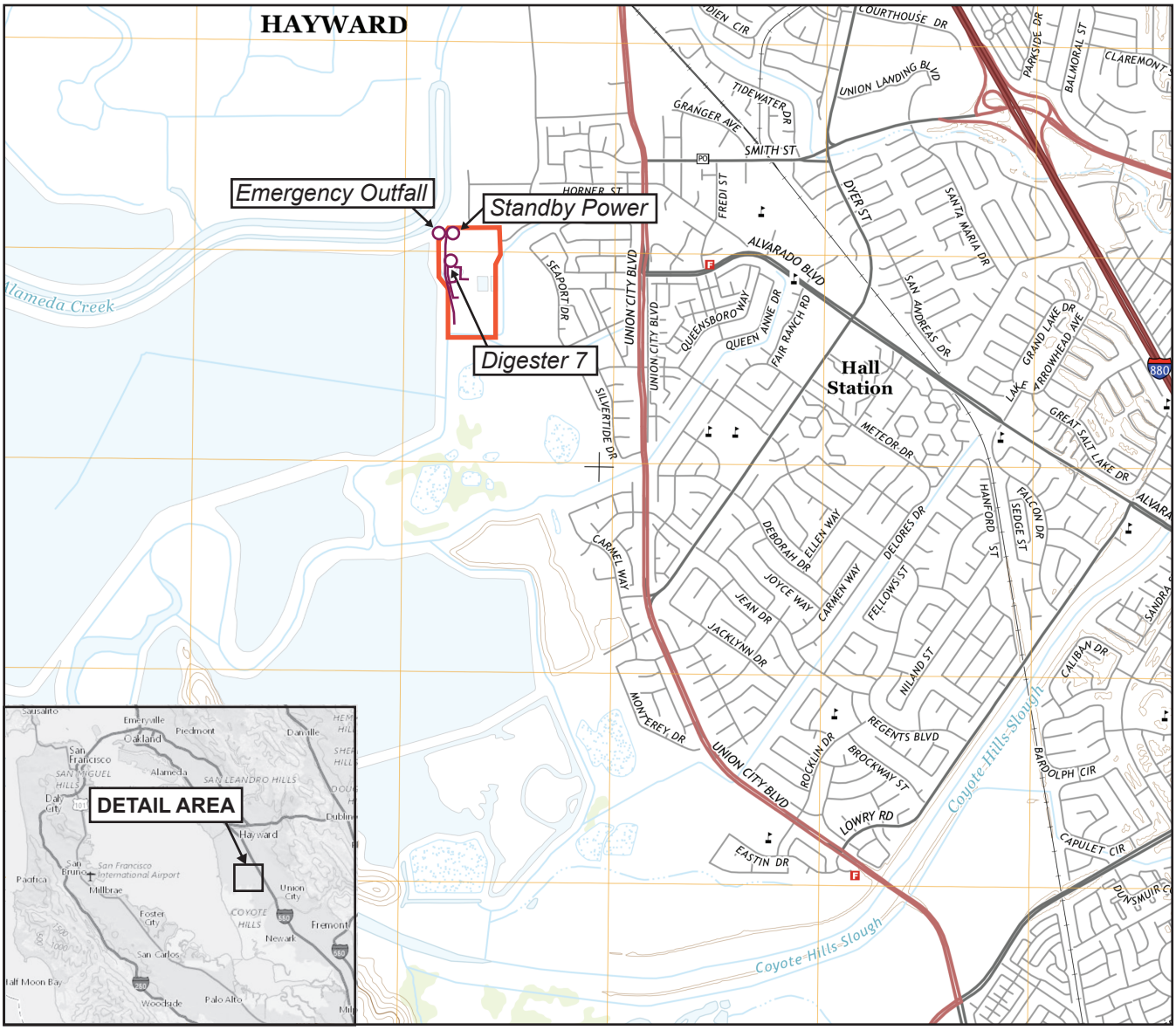
Sincerely,

Emily Wick
Archeo-Tec Consulting Archaeologists

ARCHEO-TEC
CONSULTING ARCHAEOLOGISTS

Union Sanitary District Project Location Map

January 29, 2018



Images: USGS.gov

Detail from Newark Quadrangle, 7.5 Minute Map CA 2015

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2

1000 500 0 METERS 1000 2000

1 0.5 0 1

MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

FEET

Area of Potential Effects: USD Campus

Approximate Excavation Locations

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

February 20, 2018

Emily Wick
Archeo-Tec Consulting Archaeologist

Email to: archeo-tec@archeo-tec.com

RE: Union Sanitary District Project, Alameda County

Dear Ms. Wick,

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 preclude the presence of cultural resources in any project area. Other sources for cultural resources should also be contacted for information regarding known and/or recorded sites.

Enclosed is a list of Native Americans tribes who may have knowledge of cultural resources in the 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 to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these tribes, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at 916-573-1033 or frank.lienert@nahc.ca.gov.

Sincerely,

Frank Lienert
Associate Governmental Program Analyst

Native American Heritage Commission
Native American Contacts
2/20/2018

Coastanoan Rumsen Carmel Tribe
Tonv Cerda. Chairperson
244 E. 1st Street
Pomona , CA 91766
rumsen@aol.com
(909) 524-8041 Cell
(909) 629-6081
Ohlone/Costanoan

Indian Canvon Mutsun Band of Costanoan
Ann Marie Savers. Chairperson
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ams@indiancanyon.org
(831) 637-4238
Ohlone/Costanoan

Amah MutsunTribal Band of Mission San Juan Bautista
Irenne Zwierlein. Chairperson
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amahmutsuntribal@gmail.com
(650) 851-7489 Cell
(650) 851-7747 Office
(650) 332-1526 Fax
Ohlone/Costanoan

North Vallev Yokuts Tribe
Katherine Erolinda Perez. Chairperson
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Linden , CA 95236
canutes@verizon.net
(209) 887-3415
Ohlone/Costanoan
Northern Valley Yokuts
Bav Miwok

Muwekma Ohlone Indian Tribe of the SF Bav Area
Rosemarv Cambra. Chairperson
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Ohlone / Costanoan

The Ohlone Indian Tribe
Andrew Galvan
P.O. Box 3152
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chochenyo@AOL.com
(510) 882-0527 Cell
(510) 687-9393 Fax
Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was pr oduced.

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 American Tribes with regard to cultural resources assessments for the proposed Union Sanitary District Project, Alameda County

Subject: Union Sanitary District Projects, Union City
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 2/22/2018 4:09 PM
To: rumsen@aol.com
BCC: sent@archeo-tec.com

Dear Chairperson Cerda,

I am writing with regard to a trio of proposed projects within Union Sanitary District's facility in Union City, Alameda County, California. One of the projects (Emergency Outfall Improvements Project) is subject to Section 106 regulations because it would affect a navigable waterway, and therefore requires a permit from U.S. Army Corps of Engineers.

The three proposed projects are all located within the existing Union Sanitary District (USD) facility, which is shown on the attached map. Renovations to an **Emergency Outfall** gate opening to Alameda Creek in the northwest corner of the USD facility would entail ground disturbance to a maximum of 11 feet within and around the outfall's footprint. The **Standby Power Generation System Upgrade Project** would construct an approximately 220- by 100-foot generator building with a depth of impact of 6 feet below surface just east of the outfalls. Associated pipeline trenches would reach 3-4 feet below surface. Finally, the **Digester 7 Project** would construct a new digester in the western portion of the USD facility. Excavation would reach a depth of 40 feet; associated pipelines would reach a maximum depth of 4 feet.

A records search at the Northwest Information Center (NWIC) found one archaeological site located approximately one mile east of the Project: one of Nelson's shellmounds, which appears to have not been investigated as it does not have a site record. No other archaeological sites are recorded within one mile of the Project.

We have already contacted the Native American Heritage Commission and a search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. We are interested to know if you have information about culturally significant resources on this site, or can recommend others who might share such information. Please send any response you may have within the next 30 days.

Sincerely,
Michelle Staley

Archeo-Tec
5283 Broadway
Oakland, CA 94618
(510) 601-6185 phone
(510) 858-7248 fax

Attachments:

USD Projects Location Map.pdf 7.3 MB

Subject: Fwd: Union Sanitary District Projects, Union City
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 3/8/2018 2:51 PM
To: Tony Cerda <rumsen@aol.com>

Dear Chairperson Cerda,

We just spoke on the phone about the Union Sanitary District projects discussed below, and you were particularly concerned that the Digester 7 Project would entail excavation up to 40 feet. Please have a look at these projects and let me know your thoughts or if you have additional questions.

Sincerely,

Michelle

-------- Forwarded Message --------
Subject: Union Sanitary District Projects, Union City
Date: Thu, 22 Feb 2018 16:09:55 -0800
From: Archeo-Tec <archeo-tec@archeo-tec.com>
To:rumsen@aol.com

Dear Chairperson Cerda,

I am writing with regard to a trio of proposed projects within Union Sanitary District's facility in Union City, Alameda County, California. One of the projects (Emergency Outfall Improvements Project) is subject to Section 106 regulations because it would affect a navigable waterway, and therefore requires a permit from U.S. Army Corps of Engineers.

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A records search at the Northwest Information Center (NWIC) found one archaeological site located approximately one mile east of the Project: one of Nelson's shellmounds, which appears to have not been investigated as it does not have a site record. No other archaeological sites are recorded within one mile of the Project.

We have already contacted the Native American Heritage Commission and a search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. We are interested to know if you have information about culturally significant resources on this site, or can recommend others who might share such information. Please send any response you may have within the next 30 days.

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Subject: Union Sanitary District Projects, Union City
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 2/22/2018 4:11 PM
To: Amah Mutsun TB of Mission SJB <amahmutsuntribal@gmail.com>
BCC: sent@archeo-tec.com

Dear Chairperson Zwierlein,

I am writing with regard to a trio of proposed projects within Union Sanitary District's facility in Union City, Alameda County, California. One of the projects (Emergency Outfall Improvements Project) is subject to Section 106 regulations because it would affect a navigable waterway, and therefore requires a permit from U.S. Army Corps of Engineers.

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A records search at the Northwest Information Center (NWIC) found one archaeological site located approximately one mile east of the Project: one of Nelson's shellmounds, which appears to have not been investigated as it does not have a site record. No other archaeological sites are recorded within one mile of the Project.

We have already contacted the Native American Heritage Commission and a search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. We are interested to know if you have information about culturally significant resources on this site, or can recommend others who might share such information. Please send any response you may have within the next 30 days.

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Subject: Union Sanitary District Projects, Union City
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 2/22/2018 4:26 PM
To: Katherine Erolinda Perez <canutes@verizon.net>
BCC: sent@archeo-tec.com

Dear Chairperson Perez,

I am writing with regard to a trio of proposed projects within Union Sanitary District's facility in Union City, Alameda County, California. One of the projects (Emergency Outfall Improvements Project) is subject to Section 106 regulations because it would affect a navigable waterway, and therefore requires a permit from U.S. Army Corps of Engineers.

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A records search at the Northwest Information Center (NWIC) found one archaeological site located approximately one mile east of the Project: one of Nelson's shellmounds, which appears to have not been investigated as it does not have a site record. No other archaeological sites are recorded within one mile of the Project.

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Subject: Union Sanitary District Projects, Union City
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 2/22/2018 4:14 PM
To: Rosemary Cambra <muwekma@muwekma.org>
BCC: sent@archeo-tec.com

Dear Chairperson Cambra,

I am writing with regard to a trio of proposed projects within Union Sanitary District's facility in Union City, Alameda County, California. One of the projects (Emergency Outfall Improvements Project) is subject to Section 106 regulations because it would affect a navigable waterway, and therefore requires a permit from U.S. Army Corps of Engineers.

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A records search at the Northwest Information Center (NWIC) found one archaeological site located approximately one mile east of the Project: one of Nelson's shellmounds, which appears to have not been investigated as it does not have a site record. No other archaeological sites are recorded within one mile of the Project.

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Subject: Union Sanitary District Projects, Union City
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 2/22/2018 4:16 PM
To: Andy Galvan <chochenyo@aol.com>
BCC: sent@archeo-tec.com

Dear Mr. Galvan,

I am writing with regard to a trio of proposed projects within Union Sanitary District's facility in Union City, Alameda County, California. One of the projects (Emergency Outfall Improvements Project) is subject to Section 106 regulations because it would affect a navigable waterway, and therefore requires a permit from U.S. Army Corps of Engineers.

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Subject: Union Sanitary District Projects, Union City
From: Archeo-Tec <archeo-tec@archeo-tec.com>
Date: 2/22/2018 4:18 PM
To: Ann Marie Sayers <ams@indiancanyon.org>
BCC: sent@archeo-tec.com

Dear Chairperson Sayers,

I am writing with regard to a trio of proposed projects within Union Sanitary District's facility in Union City, Alameda County, California. One of the projects (Emergency Outfall Improvements Project) is subject to Section 106 regulations because it would affect a navigable waterway, and therefore requires a permit from U.S. Army Corps of Engineers.

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